

Biopython working examples

November 24, 2020

```
[1]: pip install biopython
```

```
Requirement already satisfied: biopython in
/Users/zunqiuwang/opt/anaconda3/lib/python3.8/site-packages (1.78)
Requirement already satisfied: numpy in
/Users/zunqiuwang/opt/anaconda3/lib/python3.8/site-packages (from biopython)
(1.18.5)
Note: you may need to restart the kernel to use updated packages.
```

```
[4]: from Bio import Seq
from Bio import Entrez
from Bio import SeqIO
Entrez.email = 'A.N.Other@example.com'
```

```
[3]: handle = Entrez.einfo()
```

```
/Users/zunqiuwang/opt/anaconda3/lib/python3.8/site-
packages/Bio/Entrez/__init__.py:658: UserWarning:
Email address is not specified.
```

To make use of NCBI's E-utilities, NCBI requires you to specify your email address with each request. As an example, if your email address is A.N.Other@example.com, you can specify it as follows:

```
from Bio import Entrez
Entrez.email = 'A.N.Other@example.com'
```

In case of excessive usage of the E-utilities, NCBI will attempt to contact a user at the email address provided before blocking access to the E-utilities.

```
warnings.warn(
```

```
[8]: handle = Entrez.esearch(db="nucleotide", term="Cypripedioideae[Orgn] AND_
↳matK[Gene]", idtype="acc")
record = Entrez.read(handle)
record["idList"]
```

```
[8]: '549'
```

```
[28]: #eserch
handle = Entrez.esearch(db="protein", term= "CTLA-4", rettype = 'fasta',
    ↪retmode = 'xml', retmax=1000)
record = Entrez.read(handle)
record["IdList"]
```

```
[28]: ['1622425604', '359718947', '359718944', '99028881', '54112382', '54112380',
'1890341999', '1890284578', '1890270866', '1890268957', '1519315406',
'1331037341', '960139397', '559098473', '559098444', '530354670', '340545510',
'340545508', '224809335', '224589135', '161484597', '145580619', '112983684',
'54607137', '31981847', '23238197', '23238194', '9910352', '7657220',
'1624525620', '1624525547', '1624525517', '1530683526', '1488045834',
'1488045830', '1488045806', '1487721922', '1425088522', '928192561',
'504127939', '408360004', '345498499', '317373339', '296439425', '226423924',
'161484599', '148233596', '117956399', '117956397', '117956395', '116242835',
'83700231', '75038516', '57618998', '47523390', '47155571', '46048702',
'31543511', '30794304', '27735177', '21361212', '12644505', '10946740',
'5453611', '4885123', '4759246', '2497296', '1168846', '461606', '399208',
'115973', '1093953514', '1385123374', '1519311816', '124487313', '1012219610',
'1012219603', '1907067120', '164607135', '122937281', '404351628', '209969808',
'13928934', '63003901', '1720887037', '1720887035', '1720887033', '1899355789',
'113461963', '544583539', '85540459', '85540456', '697830834', '767920657',
'71152347', '62900110', '1169124', '117606', '1888725862', '1888426078',
'1888426073', '1888424271', '1888424266', '1887925085', '1887924494',
'1887924395', '1887736933', '1418342888', '380748984', '1866605413',
'1866605412', '1866605411', '1866605410', '1866605409', '1866605408',
'1866605407', '1866605406', '1866605405', '1866605404', '1866605402',
'1866605401', '1866605400', '1866605399', '1866605398', '1866605397',
'625186159', '354470297', '675664871', '300795429', '564730550', '45384176',
'1863046184', '1862965797', '167234425', '130502118', '924442924', '162951992',
'162951926', '154146225', '126723397', '57164229', '57163777', '50978804',
'27805837', '112817617', '57163965', '576067878', '576067783', '83700227',
'29243938', '21314838', '1852996203', '1852996170', '1852880619', '1852747649',
'1852747644', '675760416', '397500229', '397500227', '397500225', '752405086',
'470609647', '998705706', '465967436', '806638636', '1827508288', '1827508287',
'1827508286', '1827508284', '1827508283', '1827508282', '1827508280',
'1827508279', '1827508278', '1827508276', '1827508275', '1827508274',
'1827508272', '1827508271', '1827508270', '1827508268', '1827508267',
'1827508266', '1827508264', '1827508263', '1827508262', '1827508260',
'1827508259', '1827508257', '1827508256', '1827508255', '1827508253',
'1827508252', '1827508250', '1827508249', '1827508248', '1827508246',
'1827508245', '1827508243', '1827508242', '1827508241', '1827508239',
'1827508238', '1827508237', '1827508235', '1827508234', '1827508232',
'1827508231', '1827508230', '1827508228', '1827508227', '1827508226',
'1827508224', '1827508223', '1827508222', '1827508220', '1827508219',
'1827508217', '1827508216', '1827508214', '1827508213', '1827508212',
'1827508210', '1827508209', '1827508208', '1827508206', '1827508205',
```

'1827508204'	'1827508202'	'1827508201'	'1827508200'	'1827508198'
'1827508197'	'1827508196'	'1827508194'	'1827508193'	'1827508192'
'1827508190'	'1827508189'	'1827508188'	'1827508186'	'1827508185'
'1827508184'	'1827508182'	'1827508181'	'1827508180'	'1827508178'
'1827508177'	'1827508176'	'1827508174'	'1827508173'	'1827508172'
'1827508170'	'1827508169'	'1827508168'	'1827508166'	'1827508165'
'1827508164'	'1827508162'	'1827508161'	'1827508160'	'1827508158'
'1827508157'	'1827508156'	'1827508154'	'1827508153'	'1827508152'
'1827508150'	'1827508149'	'1827508148'	'1827508146'	'1827508145'
'1827508144'	'1827508142'	'1827508141'	'1827508140'	'1827508138'
'1827508137'	'1827508136'	'1827508134'	'1827508133'	'1827508132'
'1827508130'	'1827508129'	'1827508128'	'1827508126'	'1827508125'
'1827508124'	'1827508122'	'1827508121'	'1827508120'	'1827508118'
'1827508117'	'1827508116'	'1827508114'	'1827508113'	'1827508112'
'1827508110'	'1827508109'	'1827508108'	'1827508106'	'1827508105'
'1827508104'	'1827508102'	'1827508101'	'1827508100'	'1827508098'
'1827508097'	'1827508096'	'1827508094'	'1827508093'	'1827508092'
'1827508090'	'1827508089'	'1827508088'	'1827508086'	'1827508085'
'1827508084'	'1827508082'	'1827508081'	'1827508080'	'1827508078'
'1827508077'	'1827508076'	'1827508074'	'1827508073'	'1827508072'
'1827508070'	'1827508069'	'1827508067'	'1827508066'	'1827508065'
'1827508063'	'1827508062'	'1827508061'	'1827508059'	'1827508058'
'1827508057'	'1827508055'	'1827508054'	'1827508053'	'1827508051'
'1827508050'	'1827508048'	'1827508047'	'1827508046'	'1827508044'
'1827508043'	'1827508042'	'1827508040'	'1827508039'	'1827508038'
'1827508036'	'1827508035'	'1827508034'	'1827508032'	'1827508031'
'1827508030'	'1827508028'	'1827508027'	'1827508026'	'1827508024'
'1827508023'	'1827508022'	'1827508020'	'1827508019'	'1827508017'
'1827508016'	'1827508014'	'1827508013'	'1827508012'	'1827508010'
'1827508009'	'1827508008'	'1827508006'	'1827508005'	'1827508003'
'1827508002'	'1827508001'	'1827507999'	'1827507998'	'1827507997'
'1827507995'	'1827507994'	'1827507993'	'1827507991'	'1827507990'
'1827507989'	'1827507987'	'1827507986'	'1827507985'	'1827507983'
'1827507982'	'1827507981'	'1827507979'	'1827507978'	'1827507977'
'1827507975'	'1827507974'	'1827507973'	'1827507971'	'1827507970'
'1827507969'	'1827507967'	'1827507966'	'1827507964'	'1827507963'
'1827507962'	'1827507960'	'1827507959'	'1827507958'	'1827507956'
'1827507955'	'1827507954'	'1827507952'	'1827507951'	'1827507950'
'1827507948'	'1827507947'	'1827507946'	'1827507944'	'1827507943'
'1827507941'	'1827507940'	'1827507939'	'1827507937'	'1827507936'
'1827507935'	'1827507933'	'1827507932'	'1827507931'	'1827507929'
'1827507928'	'1827507927'	'1827507925'	'1827507924'	'1827507923'
'1827507921'	'1827507920'	'1827507919'	'1827507917'	'1827507916'
'1827507915'	'1827507913'	'1827507912'	'1827507911'	'1827507909'
'1827507908'	'1827507907'	'1827507905'	'1827507904'	'1827507903'
'1827507901'	'1827507900'	'1827507899'	'1827507897'	'1827507896'
'1827507895'	'1827507893'	'1827507892'	'1827507891'	'1827507889'

'1827507571', '1827507570', '1827507569', '1827507567', '1827507566',
'1827507564', '1827507563', '1827507562', '1827507560', '1827507559',
'1827507558', '1827507556', '1827507555', '1827507554', '1827507552',
'1827507551', '1827507549', '1827507548', '1827507547', '1827507545',
'1827507544', '1827507543', '1827507541', '1827507540', '1827507539',
'1827507537', '1827507536', '1827507535', '1827507533', '1827507532',
'1827507531', '1827507529', '1827507528', '1827507527', '1827507525',
'1827507524', '1827507523', '1827507521', '1827507520', '1827507519',
'1827507517', '1827507516', '1827507515', '1827507513', '1827507512',
'1827507511', '1827507509', '1827507508', '1827507507', '1827507505',
'1827507504', '1827507503', '1827507501', '1827507500', '1827507499',
'1827507497', '1827507496', '1827507495', '1827507493', '1827507492',
'1827507491', '1827507489', '1827507488', '1827507486', '1827507485',
'1827507484', '1827507482', '1827507481', '1827507480', '1827507478',
'1827507477', '1827507476', '1827507474', '1827507473', '1827507472',
'1827507470', '1827507469', '1827507468', '1827507466', '1827507465',
'1827507464', '1827507462', '1827507461', '1827507460', '1827507458',
'1827507457', '1827507456', '1827507454', '1827507453', '1827507452',
'1827507450', '1827507449', '1827507448', '1827507446', '1827507445',
'1827507444', '1827507442', '1827507441', '1827507440', '1827507438',
'1827507437', '1827507436', '1827507434', '1827507433', '1827507432',
'1827507430', '1827507429', '1827507428', '1827507426', '1827507425',
'1827507424', '1827507422', '1827507421', '1827507420', '1827507418',
'1827507417', '1827507416', '1827507414', '1827507413', '1827507412',
'1827507410', '1827507409', '1827507408', '1827507406', '1827507405',
'1827507404', '1827507402', '1827507401', '1827507400', '1827507398',
'1827507397', '1827507396', '1827507394', '1827507393', '1827507392',
'1827507390', '1827507389', '1827507388', '1827507386', '1827507385',
'1827507384', '1827507382', '1827507381', '1827507379', '1827507378',
'1827507377', '1827507375', '1827507374', '1827507373', '1827507371',
'1827507370', '1827507368', '1827507367', '1827507366', '1827507364',
'1827507363', '1827507361', '1827507360', '1827507359', '1827507357',
'1827507356', '1827507355', '1827507353', '1827507352', '1827507350',
'1827507349', '1827507348', '1827507346', '1827507345', '1827507344',
'1827507342', '1827507341', '1827507340', '1827507338', '1827507337',
'1827507336', '1827507334', '1827507333', '1827507332', '701406380',
'224056385', '565671764', '560937045', '1003922999', '1808048942', '1807795216',
'1807795207', '1807771879', '1807637711', '1807393371', '1807393370',
'1807391035', '1807391034', '1807391033', '1807391032', '1807391031',
'1807391030', '1807391029', '1807391028', '1807391027', '1807391026',
'1807391025', '1807391024', '1807391023', '1807391022', '1807391021',
'1807391020', '1482581913', '1482581911', '1297593792', '1297593788',
'1743125366', '560965747', '1220163810', '1220163807', '1220163805',
'685578004', '1770301640', '1770301639', '1770301638', '1209987294',
'744599543', '1761118070', '1761118065', '1760934763', '1760731241',
'1760731233', '1760640576', '1099226672', '426338329', '426338327', '426338321',
'724947901', '724947899', '1746156692', '1741740600', '1246155577',

```
'1735601293', '29789034', '17942842', '17942841', '1682220645', '1682157842',
'1682154653', '1682098840', '1195671034', '1195671032', '1655684318',
'806638721', '806638632', '704285862', '966977727', '966977725', '966977723',
'1621846748', '1621846746', '1615965863', '1603513964', '1601530237',
'1597443192', '593736137', '1575110572', '1575110571', '1574244879',
'1573774473', '1571969562', '594686320', '1570469765', '1570469761',
'1570469757', '1567525862', '1080154840', '1080154839', '1080154838',
'1080154837', '1080154836', '1080154835', '1080154834', '1080154833',
'939187051', '947259228', '541981584', '529434589', '874465809', '1532350986',
'1532350977', '1531514090', '1516077642', '961738232', '1497503427',
'1495959935', '1495286970', '595763526', '595763291', '595763154', '542150551',
'1489282453', '1489171687', '1489171686', '1489171644', '1489171641',
'1474839197', '1444698426']
```

```
[29]: CTLA4_id=record["IdList"]
handle = Entrez.efetch(db="protein", id=', '.join(CTLA4_id), rettype="fasta",
↳retmode="text")
print(handle.read())
```

```
>XP_028712213.1 cytotoxic T-lymphocyte protein 4 [Peromyscus leucopus]
MACLGVPKAPLQLASRNWPFVLLACLSIPTFSKAIHVTQPSVVLASSHGVSFCEYTSSHTDEV
VTVLRQTSQMMTEVCSTFTMKNKLGFLDDPFCSTGFNESKVNLTIQGLRAADTGLYFCKVELMYP
FVGMNGTQIYVIDPEPCPDSVLLWILAAVSSGLFFYSFLITAVSLKMLRKRSPLTTGSM
```

```
>NP_001240779.1 V-set domain-containing T-cell activation inhibitor 1 isoform 3
[Homo sapiens]
MASLGQILFWSIISIIIIILAGAIALIIGFGISAFSMPEVNVNDYNASSETLRCEAPRWFPQPTVVWASQVD
QGANFSEVSNTSFELNSENVTMKVSVLYNVTINNTYSCMIENDIAKATGDIKVTSEIKRRSHLQLLNS
KASLCVSSFFAISWALLPLSPYMLK
```

```
>NP_001240778.1 V-set domain-containing T-cell activation inhibitor 1 isoform 2
[Homo sapiens]
MFRGRTAVFADQVIVGNASRLKNVQLTDAGTYKCYIITSKGKGNANLEYKTGAFSMPEVNVNDYNASSET
LRCEAPRWFPQPTVVWASQVDQGANFSEVSNTSFELNSENVTMKVSVLYNVTINNTYSCMIENDIAKAT
GDIKVTSEIKRRSHLQLLNSKASLCVSSFFAISWALLPLSPYMLK
```

```
>NP_078902.2 V-set domain-containing T-cell activation inhibitor 1 isoform 1
precursor [Homo sapiens]
MASLGQILFWSIISIIIIILAGAIALIIGFGISGRHSITVTTVASAGNIGEDGILSCTFEPDIKLSDIVIQ
WLKEGVLGLVHEFKEGKDELSEQDEMFRGRTAVFADQVIVGNASRLKNVQLTDAGTYKCYIITSKGKGN
ANLEYKTGAFSMPEVNVNDYNASSETLRCEAPRWFPQPTVVWASQVDQGANFSEVSNTSFELNSENVTMKV
VSVLYNVTINNTYSCMIENDIAKATGDIKVTSEIKRRSHLQLLNSKASLCVSSFFAISWALLPLSPYML
LK
```

```
>NP_115979.3 lysine-specific demethylase 2B isoform a [Homo sapiens]
MAGPQMGGSAEDHPPKRHAAEKQKKKTVIYTKCFEFESATQRPIDRQRYDENEDLSDVEEIVSVRGFSL
EEKLRSQLYQGDFVHAMEGKDFNYEYVQREALRVPLIFREKDGGLIKMPDPDFTVRDVKLLVGSRRLLVDV
```

MDVNTQKGTEMSMSQFVRYETPEAQRDKLYNVISLEFSHTKLEHLVKRPTVVDLVDWVDNMWPQHLKEK
QTEATNAIAEMKYPVKVKKYCLMSVKGCFDTDFHIDFGGTSVWYHVFRGGKIFWLIPPTLHNLALYEEWVLS
GKQSDIFLGDRVERCQRIELKQGYTFFIPSGWIHAVYTPVDSL VF GGNILHSFNVMQLRIYEIEDRTRV
QPKFRYPFYEMCWYVLERYVYCVTQRSHLTQEYQRESMLIDAPRKPSIDGFSSDSWLEMEEEACDQQPQ
EEEEKDEEGEGRDRAPKPPTDGSTSTPTSPSEDQEALGKKPKAPALRFLKRTLSNESEESVKSTTLAVDY
PKTPTGSPATEVSAKWTHLTFELKGLKALVEKLESLPENKKCVPEGIEDPQALLEGVKNVLKEHADDDP
SLAITGVPVVTWPKKTPKNRAVGRPKGKLGPAASAVKLAANRTTAGARRRRTRCRKCEACLRTECGECHFC
KDMKKFGGPGRMKQSCIMRQCIAPVLPHTAVCLVCGEAGKEDTVEEEEGKFNLMLMECSICNEIIHPGCL
KIKESEGVVNDELPCWECPCNHNAGKTGKQKRGPGFKYASNLP GSLLKEQKMNNDNKEGQEPAKRRSEC
EEAPRRRSDEHSKKVPPDGLLRKSDDVHLRKKRKYEKPKELSGRKRASSLQTSPGSSSHLSRPPLGSS
LSPWWRSSLTYFQQQLKPGKEDKLFRRKRRSWKNAEDRMALANKPLRRFKQEPEDELPEAPPKTRES DHS
RSSSPTAGPSTEGAEGPEEKKKVKMRKRRLPNKELSRELSKELNHEIQRTE NSLANENQQPIKSEPESE
GEEPKRPPGICERPHRFSKGLNGTPREL RHQLGPSLRSPPRVISRPPPSVSPPKCIQMERHVIRPPPISP
PPDSLPLDDGAAHVMHREVWMAVFSYLSHQDLCVCMRV CRTWNRWCCDKRLWTRIDLNHCKSITPLMLS
GIIRRPVSLDLSWTNISKKQLSWLINRLPGLRDLVLSGCSWIAVSALCSSSCPLLRTLDVQWVEGLKDAQ
MRDLLSPPTDNRPGQMDNRSKLRNIVELRLAGLDITDASRLRIIRHMP LLSKLHLSYCNHVTDQSINLLT
AVGTTTRDSLTEINLSDCNKVTDQCLSFFKRCGNICHIDLR YCKQVTKEGCEQFIAEMSVSVQFGQVEEK
LLQKLS

>NP_001005366.1 lysine-specific demethylase 2B isoform b [Homo sapiens]
MEAEKDSGRRLRPIDRQRYDENEDLS DVEEIVSVRGFSLEEKLRSQLYQGDFVHAMEGKDFNYEYVQREA
LRVPLIFREKDGLGIKMPDPDFTVRDVKLLVGSRRLLVDMDVNTQKGTEMSMSQFVRYETPEAQRDKLY
NVISLEFSHTKLEHLVKRPTVVDLVDWVDNMWPQHLKEKQTEATNAIAEMKYPVKVKKYCLMSVKGCFDTDF
HIDFGGTSVWYHVFRGGKIFWLIPPTLHNLALYEEWVLSGKQSDIFLGDRVERCQRIELKQGYTFFIPSG
WIHAVYTPVDSL VF GGNILHSFNVMQLRIYEIEDRTRVQPKFRYPFYEMCWYVLERYVYCVTQRSHLT
QEYQRESMLIDAPRKPSIDGFSSDSWLEMEEEACDQQPQEEEEKDEEGEGRDRAPKPPTDGSTSTPTSP
EDQEALGKKPKAPALRFLKRTLSNESEESVKSTTLAVDYPKTPTGSPATEVSAKWTHLTFELKGLKALV
EKLESLPENKKCVPEGIEDPQALLEGVKNVLKEHADDDP SLAITGVPVVTWPKKTPKNRAVGRPKGKLG
ASAVKLAANRTTAGARRRRTRCRKCEACLRTECGECHFC KDMKKFGGPGRMKQSCIMRQCIAPVLPHTAV
CLVCGEAGKEDTVEEEEGKFNLMLMECSICNEIIHPGCLKIKESEGVVNDELPCWECPCNHNAGKTGKQ
KRGPGFKYASNLP GSLLKEQKMNNDNKEGQEPAKRRSECEEAPRRRSDEHSKKVPPDGLLRKSDDVHLR
KKRKYEKPKELSGRKR LKPGKEDKLFRRKRRSWKNAEDRMALANKPLRRFKQEPEDELPEAPPKTRES DH
SRSSSPTAGPSTEGAEGPEEKKKVKMRKRRLPNKELSRELSKELNHEIQRTE NSLANENQQPIKSEPESE
EGEEPKRPPGICERPHRFSKGLNGTPREL RHQLGPSLRSPPRVISRPPPSVSPPKCIQMERHVIRPPPISP
PPPSLPLDDGAAHVMHREVWMAVFSYLSHQDLCVCMRV CRTWNRWCCDKRLWTRIDLNHCKSITPLMLS
GIIRRPVSLDLSWTNISKKQLSWLINRLPGLRDLVLSGCSWIAVSALCSSSCPLLRTLDVQWVEGLKDA
QMRDLLSPPTDNRPGQMDNRSKLRNIVELRLAGLDITDASRLRIIRHMP LLSKLHLSYCNHVTDQSINLL
TAVGTTTRDSLTEINLSDCNKVTDQCLSFFKRCGNICHIDLR YCKQVTKEGCEQFIAEMSSVQGRSCSTT
RLGDE

>NP_001193854.2 T-lymphocyte activation antigen CD86 isoform 5 [Homo sapiens]
MGRTSFSDSWTLRLHNLQIKDKGLYQCIHHKKPTGMIRIHQMNSELSVLNFSQPEIVPISNITENVY
INLTCSIIHGYPEPKMSVLLRTKNSTIEYDGMQKSQDNVTELYDVSISLSVSFPDVTSNMTIFCILET
DKTRLLSSPFSIELEDPPPPDHIPWITAVLPTV IICVMVFCLILWKWKKKRPRNSYKCGTNTMEREES
EQTKKREKIHIPERSDEAQRVFKSSKTSSCDKSDTCF

>NP_001193853.2 T-lymphocyte activation antigen CD86 isoform 4 precursor [Homo sapiens]

MDPQCTMGLSNILFVMAFLLSANFSQPEIVPISNITENVYINLTCCSIHGYPEPKKMSVLLRTKNSTIEY
DGVMQKSQDNVTELYDVSISLSVSFPDVTSNMTIFCILETDKTRLLSSPFSIELEDPQPPDHIPWITAV
LPTV IICVMVFCLILWKWKKKRPRNSYKCGTNTMERESESEQTKKREKIHIPERSDEAQRVFKSSKTSSC
DKSDTCF

>NP_795711.2 T-lymphocyte activation antigen CD86 isoform 3 precursor [Homo sapiens]

MGLSNILFVMAFLLSGAAPLKIAYFNETADLPCQFANSQNSLSELVFWQDQENLVLNEVYLGKEKFD
SVHSKYMGRTSFSDSWTLRLHNLQIKDKGLYQCIHHKKPTGMIRIHQMNSELSVLANSQPEIVPISN
ITENVYINLTCCSIHGYPEPKKMSVLLRTKNSTIEYDGVMQKSQDNVTELYDVSISLSVSFPDVTSNMTI
FCILETDKTRLLSSPFSIGTNTMERESESEQTKKREKIHIPERSDEAQRVFKSSKTSSCDKSDTCF

>NP_008820.4 T-lymphocyte activation antigen CD86 isoform 2 precursor [Homo sapiens]

MGLSNILFVMAFLLSGAAPLKIAYFNETADLPCQFANSQNSLSELVFWQDQENLVLNEVYLGKEKFD
SVHSKYMGRTSFSDSWTLRLHNLQIKDKGLYQCIHHKKPTGMIRIHQMNSELSVLANSQPEIVPISN
ITENVYINLTCCSIHGYPEPKKMSVLLRTKNSTIEYDGVMQKSQDNVTELYDVSISLSVSFPDVTSNMTI
FCILETDKTRLLSSPFSIELEDPQPPDHIPWITAVLPTV IICVMVFCLILWKWKKKRPRNSYKCGTNT
MERESESEQTKKREKIHIPERSDEAQRVFKSSKTSSCDKSDTCF

>NP_861445.4 B- and T-lymphocyte attenuator isoform 1 precursor [Homo sapiens]

MKTL PAMLTGKGLFWVFFLIPYLDIWNHKGESCDVQLYIKRQSEHSILAGDPFELECPVKYCANRPHVT
WCKLNGTTCVKLEDRQTSWKEEKNISFFILHFEPVLPNDNGSYRCSANFQSNLIESHSTLYVTDVKAS
ERPSKDEMASRPWLLYRLLPLGGLPLLITTCFLCCLRRHQGKQNELSDTAGREINLVD AHLKSEQTEA
STRQNSQVLLSETGIYDNDPDLCFRMQEGSEVYSNPCLEENKPGIVYASLNH SVIGPNSRLARNVKEAPT
EYASICVRS

>NP_001346827.1 T-lymphocyte activation antigen CD80 precursor [Mus musculus]

MACNCQLMQDTPLLKFCPRLILLFVLLIRLSQVSSDVDEQLSKSVKDKVLLPCRYNSPHEDESEDRIYW
QKHKDVVLSVIAGKLKVWPEYKNRTLYDNTTYSLIILGLVLSDRGTYSVQVQKKERGTYEVKHLALVKLS
IKADFSTPNITESGNPSADTKRITCFASGGFPKPRFSWLENGRELPGINTTISQDPESELYTISQLDFN
TTRNHTIKCLIKYGAHVSEDFTWEKPPEDPPDSKNTLVLF GAGFGAVITVVIVVVIKCFCKHRSCFR
NEASRETNNSLTGPEEALAEQTVFL

>NP_001304676.1 T-cell receptor-associated transmembrane adapter 1 isoform 2 [Homo sapiens]

MSDKMYSYSSDHRVDEYYIEDTPIYGNLDDMISEPMDENCYEQMKARPEKSVNKMQEATPSAQATNETQ
MCYASLDH SVKGKRRKPRKQNT HFSKDGDEQLHAIDASVSKTTLVDSFSPESQAVEENIHDDPIRLFGL
IRAKREPIN

>NP_001273975.1 endophilin-B2 isoform b [Homo sapiens]

MDFNMKKLASDAGIFFTRAVQFTEEFKGAEKTELDAHFENLLARADSTKNWTEKILRQTEVLLQPNPSA
RVEEFLEYELDRKVPSRV TNGELLAQYMADAASELGPTTPYGKTLIKVAEAEKQLGAAERDFIHTASISF
LTPLRNFLGWDKTISKERRLLQNRRLDL DACKARLKAKAAEAKATTVPDFQETRPRNYILSASASALW
NDEVDKAEQELRVAQTEFDRQAEVTRLLLEGISSTHVNHRLCLHEFVKSQTTYAQCYRHMLDLQKQLGR
FPGTFVGTTEPASPLSSTSPTTAAATMPVVPVASLAPPGEASLCLEEVAPPASGTRKARVLYDYEAAD
SSELALLADELITVYSLPGMDPDWLIGERGNNKKGKVPVTYLELLS

>NP_001273974.1 endophilin-B2 isoform a [Homo sapiens]
MDFNMKKLASDAGIFFTRAVQFTEEKFGQAEKTELDHFENLLARADSTKNWTEKILRQTEVLLQPNPSA
RVEEFLEYEKLDKRVPSRVNTGELLAQYMADAASELGPTTPYGKTLIKVAEAEKQLGAAERDFIHTASISF
LTPLRNFLEGDWKTISKERRLLQNRRLDLDACKARLKKAKAAEAKATCEGDTVPDFQETRPRNYILSASA
SALWNDEVDKAEQELRVAQTEFDRQAEVTRLLEGISSTHVNHLRCLHEFVKSQTTYAQCYRHMLDLQK
QLGSSQGAIFPGTFVGTTEPASPLSSTSPTTAAATMPVVPSVASLAPPGEASLCLEEVAPPASGTRKAR
VLYDYEAADSSSELALLADELITVYSLPGMDPDWLIGERGNKKGKVPVTYLELLS

>NP_001268905.1 cytotoxic T-lymphocyte protein 4 isoform 2 precursor [Mus musculus]
MACLGRLRYKAQLQLPSRTWPFVALLTLLFIPVFSEAIQVTQPSVVLASSHGVASFPCEYSPSHNTDEVR
VTVLRQTNDQMTEVCATTFTEKNTVGFLDYFPCSGTFNESRVNLTIQGLRAVDTGlyLCKVELMYPPPYF
VGMGNGTQIYVIAKEKKSSYNRGLCENAPNRARM

>NP_001230007.1 T-cell-specific surface glycoprotein CD28 isoform 3 precursor [Homo sapiens]
MLRLLLALNLFPSIQVTGKHLCPSPFLPGPSKPFVVLVVVGGVLACYSLLVTVAFIIFWVRSKRSRLHLS
DYMNMTPRRPGPTRKHYPYAPPRDFAAYRS

>NP_001230006.1 T-cell-specific surface glycoprotein CD28 isoform 2 precursor [Homo sapiens]
MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSWKHLCPSPFLPGPSKPFVVLVVVGGVLACYS
LLVTVAFIIFWVRSKRSRLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYRS

>NP_059508.2 inducible T-cell costimulator precursor [Mus musculus]
MKPYFCRVFVFCFLIRLLTGEINGSADHRMFSFHNGGVQISCKYPETVQQLKMRLFREREVLCELTCTKG
SGNAVSIKNPMLCLYHLSNNSVSFFLNNPDSSQGSYYFCSLSIFDPPPFQERNLSGGYLHIYESQLCCQL
KLWLPVGCAAFVVVLLFGCILIIWFSKKKYGSSVHDPNSEYMFMAAVNTNKKSLAGVTS

>NP_001012779.2 RGM domain family member B isoform 2 [Homo sapiens]
MIRKKRKRSAAPGPRSHGPRPATAPPPSPPEPTRPAWTGMGLRAAPSSAAAAAAEVEQRRSPGLCPPP
LELLLLLLFSLGLLHAGDCQQAQCRIQKCTTDFVSLTSHLNSAVDGFDFSEFCKALRAYAGCTQRTSKAC
RGNLVYHSAVLGISDLMSQRNCSKDGPSTSTNPEVTHDPCNYHSHAGAREHRRGDQNPSSYLFCLFGDP
HLRTFKDNFQTCKVEGAWPLIDNNYLSVQVTNPVVPVPGSSATATNKITIIIFKAHHECTDQKVYQAVTDDL
PAAFVDGTTSGGSDAKSLRIVERESGHYEMHARYIGTTVFVRQVGRYLTLAIRMPEDLAMSYEESQDL
QLCVNGCPLSERIDDGQGVSAIILGHSLPRTSLVQAWPGYTLETANTQCHEKMPVKDIYFQSCVFDLLTT
GDANFTAAAHSALEDVEALHPRKERWHIFPSSGNGTPRGSDLSVSLGLTCLILIVFL

>NP_031668.3 T-cell-specific surface glycoprotein CD28 precursor [Mus musculus]
MTLRLFLALNFFSVQVTENKILVKQSPLLVVDSEVSLSCRYSYNLLAKEFRASLYKGVNSDVEVCVGN
GNFTYQPQFRSNAEFNCDGDFDNETVTFRLWNLHVNHDTIYFCKIEFMYPYLDNERSNGTIIHIKEKH
LCHTQSSPKLFWALVVVAGVLCYGLLVTVVALCVIWTNSRRNRLQLSDYMNMTPRRPGLTRKPYQPYAPA
RDFAAYRP

>NP_001078826.1 B- and T-lymphocyte attenuator isoform 2 [Homo sapiens]
MKTLPAMLTGKGLFWVFFLIPYLDIWNHKGESCDVQLYIKRQSEHSILAGDPFELECPVKYCANRPHVT
WCKLNGTTCVKLEDRQTSWKEKNISFFILHFEPVLPNDNGSYRCSANFQSNLIESHSTTLYVTGKQNEL
SDTAGREINLVDAHLKSEQTEASTRQNSQVLLSETGIYDNDPDLCFRMQEGSEVYSNPCLEENKPGIVYA

SLNHSVIGPNSRLARNVKEAPTEYASICVRS

>NP_033985.3 T-lymphocyte activation antigen CD80 precursor [Mus musculus]
MACNCQLMQDTPLLKFPCPRLILLFVLLIRLSQVSSDVDEQLSKSVKDKVLLPCRYNSPHEDESEDRIYW
QKHKDVLSVIAGKLKVWPEYKNRTLYDNTTYSLIILGLVLSDRGTYSVQVQKKEGTYEVKHLALVKLS
IKADFSTPNITESGNPSADTKRITCFASGGFPKPRFSWLENGRELPGINTTISQDPESELYTISSQLDFN
TTRNHTIKCLIKYGAHVSEDFTWEKPPEDPPDSKNTLVLFAGFGAVITVVIVVVIKCFCKHRSCFRR
NEASRETNNSLTFGPPEALAEQTVFL

>NP_057472.2 T-cell receptor-associated transmembrane adapter 1 isoform 1 [Homo sapiens]
MSGISGCPFFLWGLLALLGLALVISLIFNISHYVEKQRQDKMYSYSSDHTRVDEYYIEDTPIYGNLDDMI
SEPMDCENCYEQMKARPEKSVNKMQEATPSAQATNETQMCYASLDHSVKGKRRKPRKQNTHFSDKDGDEQL
HAIDASVSKTTLVDSFSPESQAVEENIHDDPIRLFLIRAKREPIN

>NP_033973.2 cytotoxic T-lymphocyte protein 4 isoform 1 precursor [Mus musculus]
MACLGLRRYKAQLQLPSRTWPFVALLTLLFIPVFSEAIQVTQPSVVLASSHGVASFPCEYSPSHNTDEV
VTVLRQTNDQMTEVCATTFTEKNTVGFLDYPFCSGTFNESRVNLTIQGLRAVDGTGLYLCKVELMYPPPYF
VGMGNGTQIYVIDPEPCPDSDFLWILVAVSLGLFFYSFLVTAVSLSKMLKKRSPLTTGVYVKMPPTPE
CEKQFQPYFIPIN

>NP_683700.1 tumor necrosis factor receptor superfamily member 18 isoform 3 precursor [Homo sapiens]
MAQHGMGAFRALCGLALLCALSLGQRPTGGPGCGPGRLLLGTGT DARCCRVHTTRCCRDYPGEECCSEW
DCMCVQPEFHCGDPCCTTCRHHPGPPGQGVQSQKGSFGFQCIDCASGTFSGGHEGHCKPWTDCQFGFL
TVFPGNKTHNAVCPGSPPAEPLGWLTVVLLAVAAACVLLL TSAQLGLHIWQLRKTQLLLEVPPSTEDARS
CQFPEERGERSAEEKGRLGDLWV

>NP_683699.1 tumor necrosis factor receptor superfamily member 18 isoform 2 precursor [Homo sapiens]
MAQHGMGAFRALCGLALLCALSLGQRPTGGPGCGPGRLLLGTGT DARCCRVHTTRCCRDYPGEECCSEW
DCMCVQPEFHCGDPCCTTCRHHPGPPGQGVQSQKGSFGFQCIDCASGTFSGGHEGHCKPWTDCWRCRR
RPKTPEAASSPRKSGASDRQRRRGWETCGCEPRPPGPPTAASPSGAPQAAGALRSALGRALLPWQK
WVQEGGSDQRPGPCSSAAAAGPCRRERETQSWPPSSLAGPDGVGS

>NP_064530.1 endophilin-B2 isoform b [Homo sapiens]
MDFNMKKLASDAGIFFTRAVQFTEEFQGAEKTELD AHFENLLARADSTKNWTEKILRQTEVLLQPNPSA
RVEEFLEYEKLDKRVPSRVNTGELLAQYMADAASELGPTTPYGKTLIKVAEAEKQLGAAERDFIHTASISF
LTPLRNFLEGDWKTISKERRLLQNRRLDL DACKARLKKAKAAEAKATTVPDFQETRPRNYILSASASALW
NDEVDKAEQELRVAQTEFDRQAEVTRLLEGISSTHVNLRLCLHEFVKSTTYAQCYRHMLDLQKQLGR
FPGTFVGTTEPASPPLSSTPTTAAATMPVVPVSVASLAPPGEASLCLEEVAPPASGTRKARVLYDYEAAD
SSELALLADELITVYSLPGMDPDWLIGERNKKGKVPVTYLELLS

>NP_056605.1 ICOS ligand precursor [Mus musculus]
MQLKCPCFVSLGTRQPVWKKLHVSSGFFSGLGLFLLLLSSLCASAETE VGAMVGSNVVLSCIDPHRRHF
NLGLYVYWQIENPEVSVTYL PYKSPGINVDSSYKNRGHLSLDSMKQGNFSLYLKNVTPQDTQEFTCRV
FMNTATELVKILEEVRLRVAANFSTPVISTSDSSNPGQERTYT CMSKNGYPEPNLYWINTT DNSLIDTA
LQNNTVYLNKLGLYDVISTRLRPWTSRGDVLCCVENVALHQNITSISQAESFTGNNTKNPQETHNNELKV

LVPVLAVLAAAAFVSFIIYRRTRPHRSYTGPKTVQLELTDHA

>NP_001356843.1 endophilin-B2 isoform d [Homo sapiens]

MDFNMKKLASDAGIFFTRAVQFTEEFKFGQAEKTELDHFENLLARADSTKNWTEKILRQTEVLLQPNPSA
RVEEFLEYEKLDKRVPSRVNTGELLAQYMADAASELGPTTPYGKTLIKVAEAEKQLGAAERDFIHTASISF
LTPLRNFLEGDWKTISKERRLLQNRRLDLDAACKARLKKAKAAEAKATCEGDTVPDFQETRPRNYILSASA
SALWNDEVDAEQELRVAQTEFDRQAEVTRLLEGISSTHVNLRLCLHEFVKSQTTYAAQCYRHMLDLQK
QLGSSSLSTACLAWLTLTGSLAREATRRARSLPTWNC SARQVPPSPPHSGLGRRGWAQPCHLTCLLVLTQL
FRVGRHPILSLPLVT

>NP_001356842.1 endophilin-B2 isoform c [Homo sapiens]

MGGWCHESLMAISHVWIVRPEARSCFFSAPREFTEEFKFGQAEKTELDHFENLLARADSTKNWTEKILRQ
TEVLLQPNPSARVEEFLEYEKLDKRVPSRVNTGELLAQYMADAASELGPTTPYGKTLIKVAEAEKQLGAAE
RDFIHTASISFLTPLRNFLEGDWKTISKERRLLQNRRLDLDAACKARLKKAKAAEAKATCEGDTVPDFQET
RPRNYILSASASALWNDEVDAEQELRVAQTEFDRQAEVTRLLEGISSTHVNLRLCLHEFVKSQTTYAA
QCYRHMLDLQKQLGSSQGAIFPGTFVGTTEPASPLSSTSPPTAAATMPVPSVASLAPPGEASLCLEEV
APPASGTRKARVLYDYEADSSSELALLADELITVYSLPGMDPDWLIGERGNKKGKVPVTYLELLS

>NP_001356844.1 endophilin-B2 isoform e [Homo sapiens]

MDFNMKKLASDAGIFFTRAVQFTEEFKFGQAEKTELDHFENLLARADSTKNWTEKILRQTEVLLQPNPSA
RVEEFLEYEKLDKRVPSRVNTGELLAQYMADAASELGPTTPYGKTLIKVAEAEKQLGAAERDFIHTASISF
LTPLRNFLEGDWKTISKERRLLQNRRLDLDAACKARLKKAKAAEAKATLWNDEVDAEQELRVAQTEFDRQ
AEVTRLLEGISSTHVNLRLCLHEFVKSQTTYAAQCYRHMLDLQKQLGSSQGAIFPGTFVGTTEPASPL
SSTSPPTAAATMPVPSVASLAPPGEASLCLEEVAPPASGTRKARVLYDYEADSSSELALLADELITVYS
LPGMDPDWLIGERGNKKGKVPVTYLELLS

>NP_001354479.1 lipopolysaccharide-responsive and beige-like anchor protein
isoform 4 [Homo sapiens]

MASEDNRPSPPTGDDGGGGGREETPTEGGALSLKPGLPIRGIRMKFAVLTGLVEVGEVSNRDIVETVF
NLLVGGQFDLEMFIIQEGESINCMVDLLEKCDITCQAEVWSMFTAILKKSIRNLQVCTEVGLVEKVLGK
IEKVDNMIADLLVDMGLVASYNLTVRELKLFSSKLQGDKGRWPPHAGKLLSVLKHPQKYGPDAFFNFP
GKSAAAIAPPIAKWPYQNGFTFHTWLRMDPVNNINVDKDKPYLYCFRTSKGLGYSAHFVGGCLIVTSIK
SKGKGFQHCVKFDFKPQKWMVTIVHIYNRWKNSSELRCYVNGELASYGEITWFVNTSDTFDKCFLGSSET
ADANRVFCGQMTAVYLFSEALNAAQIFAIYQLGLGYKGTFFKFAESDLFLAEHHKLLLYDGKLSSAIAFT
YNPRATDAQLCLESSPKDNPSIFVHSPHALMLQDVKAVALTHSIQSAMHSIGGVQVLFPLFAQLDYRQYLS
DEIDLITICSTLLAFIMELLKNSIAMQEQMLACKGFLVIGYSLEKSSKSHVSRVLELCLAFSKYLSNLQN
GMPLKQLCDHVLNPAIWIHTPAKVQLMLYTYLSTEFITGVNIYNTIRRVGTVLLIMHTLKYYYYWAVNP
QDRSGITPKGLDGPRPNQKEMLSLRAFLLMFIKQLVMKDSGVKEDELQAILNYLLTMHEDDNLMDVLQLL
VALMSEHPNSMIPAFDQRNGLRVIYKLLASKSEGIRVQALKAMGYFLKHLAPKRKAEMVLMGHGLFSLAE
RLMLQTNLITMTYNNVLFIEILIEQIGTQVIHKQHPDPDSSVKIQNPQILKVIATLLRNSPQCPESMEVRR
AFLSDMIKLFNNSRENRRSLLQCSVWQEWMLSLCYFNPKNSDEQKITEMVYAIFRILLYHAVKYEWGGWR
VWVDTLSTHISKVTFEIHKENLANIFREQQGVDEEIGLCSSTSVQAASGIRRDINVSQVGSQQPDTKDSP
VCPHFTTNGNENSSIETKSSLESASNIELQTNTSYEEMKAEQENQELPDEGTLEETLTNETRNADDLEV
SSDIIIEAVAISNSFITGKDSMTVSEVTASISSPSEEDASEMPEFLDKSIVEEEEDDDYVELKVEGSPT
EEANLPTELQDNSLSPAASEAGEKLDMFGNDDKLIFQEGKPVTEKQTD TETQDSKDSGIQMTMTASGSSAM
SPETTVSQIAVESDLGQMLEEKKATNL TRETKLINDCHGSVSEASSEQKIAKLDVSNVATDTERLELKA
SPNVEAPQPHRHVLEISRQHEQPGQGIAPDAVNGQRDRSRSTVFRIPEFNWSQMHQRLTDLDFSIEDI
QMWRSHSTKTVMDFVNSSDNVIFVHNTIHLISQVMDNMVMACGGILPLLSAATSATHELENIEPTQGLSI

EASVTFLQRLISLVDVLI FASSLGFTEIEAEKSMSSGGILRQCLRLVCAVAVRNCLECCQHSQKTRGDK
 ALKPMHSLIPLGKSAKSPVDIVTGGISPVRDLRLQDMDINRLRAVVRDIEDSKQAQFLALAVVYFI
 SVLMVSKYRDILEPQNERHSQSCTETGSENVSLSEITPAAFSTLTASVEESESTSSARRRDSGIGEE
 TATGLGSHVEVTPHTAPPGVSAGPDAISEVLSTLSLEVNKSPETKNDRGNDLDTKATPSVSVSKNVNVKD
 ILRSLVNIPADGVTVPDALLPPACLGALGDLSEVQPVQFRSFDRSVIVAAKKSAVSPSTFNTSIPTNAVS
 VVSSVDSAQASDMGGESPGSRSSNAKLPSVPTVDSVVSQDPVSNMSITERLEHALEKAAPLLREIFVDFAP
 FLSRTLLGSHGQELLIIEGTSLVCMKSSSSVVELVMLLCSQEWQNSIQKNAGLAFIELVNEGRLLSQTMKD
 HLVRVANEAEFILSRQRAEDIHRHAEFESLCAQVSADKREDEKMDHLIRAAYRDHVTATQLIKIINI
 LTDKHGAWGNSAVSRPLEFWRLDYWEDDLRRRRRFVRNPLGSTHPEATLKTAVEHATDEDEDILAKGQSIR
 SQALGNQNSENEILLEGGDDTLSSVDEKDLENLAGPVSLSTPAQLVAPSVVVKGTLSVTSSSELYFEVDEE
 DPNFKKIDPKILAYTEGLHGKWLFTIERSIFSRRYLLQNTALEIFMANRVAVMFNFPDPATVKKVVNYLP
 RVGVGTSFGLPQTRRISLASPRQLFKASNMTQRWQHREISNFEYLMFLNTIAGRSYNDLNQYPVFPWVIT
 NYESEELDLTLPTNFRDLSKPIGALNPKRAAFFAERYESWEDDQVPKFHYGTHYSTASFVLAWLLRIEPF
 TTYFLNLQGGKFHDADRTFSSISRWRNSQRDTSDIKELIPEFYYPPEMFVNFNNYNLGVMDDGTVVSDV
 ELPPWAKTSEEFVHINRLALESEFVSCQLHQWIDLIFGYKQGPQPEAVRALNVFYLYTEGAVNLNSITDP
 VLREAVEAQIRSFQTPSLLIEPHPPRGSAMQVYLLQLSPLMFTDKAQQDVIMVLKFPSNSPVTHVAAN
 TQPGLATPAVITVTANRLFVAVNKHNLPAHQGAVQDQPYQLPVEIDPLIASNTGMHRRQITDLLDQSIQV
 HSQCFVITSDNRYILVCGFWDKSFVYSTDTGRLIQVVFVGHWDVVTCLARSESYIGGNCYILSGSRDATL
 LLWYWNGKCSGIGDNPGSETAAPRAILTGHDYEVTCAAVCAELGLVLSGSQEGPCLIHSMNGDLLRTLEG
 PENCLKPKLIQASREGHCVIFYENGLFCTFSVNGKLQATMETDDNIRAIQLSRDGQYLLTGDRGVVVVR
 QVSDLKQLFAYPGCDAGIRAMALSYDQRCIISGMASGSIVLFYNDFNRRWHHEYQTRY

>NP_001353439.1 RGM domain family member B isoform 2 [Homo sapiens]
 MIRKKRKRSAAPGPCRSHGPRPATAPAPPPSPEPTRPAWTGMGLRAAPSSAAAAAAEVEQRRSPGLCPPP
 LLLLLLLFSLGLLHAGDCQQAQCRIQKCTTDFVSLTSHLNSAVDGFDFSEFCKALRAYAGCTQRTSKAC
 RGNLVYHSAVLGISDLMSQRNCSKDGPSTSTNPEVTHDPCNYHSHAGAREHRRGDQNPPSYLFCGLFGDP
 HLRTFKDNFQTCKVEGAWPLIDNNYLSVQVTNPVVPVPGSSATATNKITIIIFKAHHECTDQKVYQAVTDDL
 PAAFVDGTTSGGSDAKSLRIVERESGHYVEMHARYIGTTVFVRQVGRYLTLAIRMPEDLAMSYEESQDL
 QLCVNGCPLSERIDDGQGVSAAILGHSLPRTSLVQAWPGYTLETANTQCHEKMPVKDIYFQSCVFDLLTT
 GDANFTAAAHSALEDVEALHPRKERWHIFPSSGNGTPRGSDLSVSLGLTCLILIVFL

>NP_001353438.1 RGM domain family member B isoform 2 [Homo sapiens]
 MIRKKRKRSAAPGPCRSHGPRPATAPAPPPSPEPTRPAWTGMGLRAAPSSAAAAAAEVEQRRSPGLCPPP
 LLLLLLLFSLGLLHAGDCQQAQCRIQKCTTDFVSLTSHLNSAVDGFDFSEFCKALRAYAGCTQRTSKAC
 RGNLVYHSAVLGISDLMSQRNCSKDGPSTSTNPEVTHDPCNYHSHAGAREHRRGDQNPPSYLFCGLFGDP
 HLRTFKDNFQTCKVEGAWPLIDNNYLSVQVTNPVVPVPGSSATATNKITIIIFKAHHECTDQKVYQAVTDDL
 PAAFVDGTTSGGSDAKSLRIVERESGHYVEMHARYIGTTVFVRQVGRYLTLAIRMPEDLAMSYEESQDL
 QLCVNGCPLSERIDDGQGVSAAILGHSLPRTSLVQAWPGYTLETANTQCHEKMPVKDIYFQSCVFDLLTT
 GDANFTAAAHSALEDVEALHPRKERWHIFPSSGNGTPRGSDLSVSLGLTCLILIVFL

>NP_001353440.1 RGM domain family member B isoform 3 [Homo sapiens]
 MMKKRKRSAAPGPCRSHGPRPATAPAPPPSPEPTRPAWTGMGLRAAPSSAAAAAAEVEQRRSPGLCPPPL
 ELLLLLLFSLGLLHAGDCQQAQCRIQKCTTDFVSLTSHLNSAVDGFDFSEFCKALRAYAGCTQRTSKACR
 GNLVYHSAVLGISDLMSQRNCSKDGPSTSTNPEVTHDPCNYHSHAGAREHRRGDQNPPSYLFCGLFGDPH
 LRTFKDNFQTCKVEGAWPLIDNNYLSVQVTNPVVPVPGSSATATNKITIIIFKAHHECTDQKVYQAVTDDL
 AAFVDGTTSGGSDAKSLRIVERESGHYVEMHARYIGTTVFVRQVGRYLTLAIRMPEDLAMSYEESQDLQ
 LCVNGCPLSERIDDGQGVSAAILGHSLPRTSLVQAWPGYTLETANTQCHEKMPVKDIYFQSCVFDLLTTG
 DANFTAAAHSALEDVEALHPRKERWHIFPSSGNGTPRGSDLSVSLGLTCLILIVFL

>NP_001353437.1 RGM domain family member B isoform 1 precursor [Homo sapiens]
MGLRAAPSSAAAAAAEVEQRRSPGLCPPPLELLLLLLFSLGLLHAGDCQQPAQCRIQKCTTDFVSLTSHL
NSAVDGFDFSEFCKALRAYAGCTQRTSKACRGNLVYHSAVLGISDLMSQRNCSKDGPTSSSTNPEVTHDPCN
YHSHAGAREHRRGDQNPSSYLCGLFGDPHLRTFKDNFQTCCKVEGAWPLIDNNYLSVQVTNPVVPVPGSSA
TATNKITIIIFKAHHECTDQKVYQAVTDDLPAAFVDGTTSGGSDAKSLRIVERESGHYVEMHARYIGTTV
FVRQVGRYLTLAIRMPEDLAMSYEESQDLQLCVNGCPLSERIDGQGQVSAILGHSPLRTSLVQAWPGYT
LETANTQCHEKMPVKDIYFQSCVFDLLTTGDANFTAAAHSALEDVEALHPRKERWHIFPSSNGTTPRGGS
DLSVSLGLTCLILIVFL

>NP_001351834.1 lipopolysaccharide-responsive and beige-like anchor protein
isoform 3 [Homo sapiens]

MASEDNRPSPPTGDDGGGGGREETPTEGGALSLKPLPIRGIRMKFAVLTGLVEVGEVSNRDIVETVF
NLLVGGQFDLEMFIIQEGESINCMVDLLEKCDITCQAEVWSMFTAILKKSIRNLQVCTEVGLVEKVLGK
IEKVDNMIADLLVMDLGVLASYNLTVRELKLFSSKLQGDKGRWPPHAGKLLSVLKHMPQKYGPDAFFNFP
GKSAAAIAPPIAKWPYQNGFTFHTWLRMDPVNNINVDKDKPYLYCFRTSKGLGYSAHFVGGCLIVTSIK
SKGKGFGHCVKFDFKPQKWMVTIVHIYNRWKNSSELRCYVNGELASYGEITWFVNTSDTFDKCFLGSSET
ADANRVFCGQMTAVYLFSEALNAAQIFAIYQLGLGYKGTFFKFAESDLFLAEHHKLLLYDGKLSSAIAFT
YNPRATDAQLCLESSPKDNPSIFVHSPHALMLQDVKAVALTHSIQSAMHSIGGVQVLFPLFAQLDYRQYLS
DEIDLITICSTLLAFIMELLKNSIAMQEQLACKGFLVIGYSLEKSSKSHVSRVLELCLAFSKYLSNLQN
GMPLLKQLCDHVLLNPAIWIHTPAKVQLMLTYLSTEFITGVNIYNTIRRVGTVLLIMHTLKYYYYWAVNP
QDRSGITPKGLDGP RP NQKEMLSLRAFLLMFIKQLVMKDSGVKEDELQAILNYLLTMHEDDNLMDVLQLL
VALMSEHPNSMIPAFDQRNGLRVIYKLLASKSEGIRVQALKAMGYFLKHLAPKRKAEVMLGHGLFSLAE
RLMLQTNLITMTYNVLFIEILIEQIGTQVIHKQHPDPDSSVKIQNPQILKVIATLLRNSPQCPESEVRR
AFLSDMIKLFNNSRENRRSLLQCSVWQEWMLSLCYFNPKNSDEQKITEMVYAI FRILLYHAVKYEWGGWR
VWVDTLSITHSKVTFEIHKENLANIFREQQGVDEEIGLCSSTSVQAASGIRRDINVSVGSQQPDTKDSP
VCPHFTTNGNENSSI EKTSSLESASNIELQTNTSYEEMKAEQENQELPDEGTLEETLTNETRNADDLEV
SSDII EAVAISNSFITTGKDSMTVSEVTASISSPSEEDASEMPEFLDKSIVEEEEDDDYVELKVEGSPT
EEANLPTELQDNSLSPAASEAGEKLD MF GNDKLIFQEGKPVTEKQTD TETQDSKDSGIQTMTASGSSAM
SPETTVSQIAVESDLGQMLEEGKKATNL TRETKLINDCHGSVSEASSEQKIAKLDVSNVATDTERLELKA
SPNVEAPQPHRHVLEISRQHEQPGQGIAPDAVNGQRDRSRSTVFRIPEFNWSQMQRLRLTDLLFSIETDI
QMWRSHSTKTVMDFVNSSDNVIFVHNTIHLISQVMDNMVMACGGILPLLSAATSATHELENI EPTQGLSI
EASVTFLQRLISLVDVLIFASSLGFTEIEAEKSMSSGGILRQCLRLVCAVAVRNCLECQHSQKLKTRGDK
ALKPMHSLIPLGKSAKSPVDIVTGGISPVRDLDRLLQDMDINRLRAVVFRDIEDSKQAQFLALAVVYFI
SVLMVSKYRDILEPQNERHSQSCTETGSENNVSLSEITPAAFSTLT TASVEESESTSSARRRDSGIGEE
TATGLGSHVEVTPHTAPPGVSAGPD AISEVLSTLSLEV NKS PETKNDRGNDLDTKATPSVSVSKNVNVKD
ILRSLVNIPADGVTVD PALLPPACLGALGDLSEQPVQFRSFDRSVIVA AKKSAVSPSTFNTSIPTNAVS
VVSSVDSAQASDMGGESPGSRSSNAKLPSVPTVDSVVSQDPVSNMSITERLEHALEKAAPLLREIFVDFAP
FLSRTL LGSHGQELLI EGTSLVCMKSSSVVELVMLLCSQEWQNSIQKNAGLAFIELVNEGRLLSQT MKD
HLVRVANEAEFILSRQRAEDIHRHAEFESLCAQYSADKREDEKMC DHLIRA AKYRDHVTATQLIQKIINI
LTDKHGAWGNSAVSRPLEFWRLDYWEDDLRRRRRFVRNPLGSTHPEATLKTAVEHATDEDILAKGQSIR
SQALGNQNSENEILLEGDDDTLSSVDEKDLENLAGPVSLSTPAQLVAPSVVVKGTLSVTSSELYFEVDEE
DPNFKKIDPKILAYTEGLHGKWLFT EIRSIFSRRYLLQNTALEIFMANRVAVMFNFPDPATVKKV VNYLP
RVGVGTSFGLPQTRRISLASPRQLFKASNMTQRWQHREISNFEYLMFLNTIAGRSYNDLNQYPVPFWIT
NYESEELDLTLP TNFRDLSKPIGALNP KRAAFAERYESWEDDQVPKFHYGTHYSTASFVLAWLLRIEPF
TTYFLNLQGGKFDHADRTFSSISRWRNSQRDTS DIKELIPEFYYP EMFVNFNNYNLGVMDDGTVVSDV
ELPPWAKTSEEFVHINRLALESEFVSCQLHQWIDLIFGYKQGGPEAVRALNVFYLYTYEGAVNLNSITDP
VLREAVEAQIRSFQGTSPQLLIEPHPPRGSAMQVSPLMFTDKAQQDVIMVLKFPSNSPVTHVAANTQPGL

ATPAVITVTANRLFAVNKWHNLP AHQGA VQDQPYQLPVEIDPLIASNTGMHRRQITDLLDQSIQVHSQCF
VITSDNRYILVCGFWDKSFRVYSTDTGRLIQVVFVGHWDVVTCLARSESYIGGCYILSGSRDATLLLWYW
NGKCSGIGDNPGETAAPRAILTGHDYEVTC AAVCAELGLVLSGSQEGPCLIHSMNGDLLRTLEGPENCL
KPKLIQASREGHC VIFYENGLFCTFSVNGKLQATMETDDNIRAIQLSRDGQYLLTG GDRGVVVVRQVSDL
KQLFAYPGCDAGIRAMALS YDQRCIISGMASGSIVLFYNDFNRWHHEYQTRY

>NP_001300906.1 protein kinase C eta type isoform 2 [Mus musculus]
MEAGRQVLVDLEPEGKVFVVITLTGSFTEATLQRDRIFKHFTKRQRAMRRRVHQVNGHKFMATYLRQPT
YCSHCREFIWGVFGKQGYQCQVCTCVVHKRCHHLIVTACTCQNNINKVDAKIAEQRFGINIPHKFNVHNY
KVPTFCDHCGSLLWGIMRQGLQCKICKMNVHIRCQANVAPNCGVNAVELAKTLAGMGLQPGNISPTSCLI
SRSTLRRQKGEKSKEGNGIGVNSSSRFGIDNFEFIRVLGKGSFGKVMLARIKETGELYAVKVLKGDVILQ
DDDVECTMTEKRILSLARNHPFLTQLFCCFQTPDRLFFVMEFVNGGDLMFHIQKSRRFDEARARFYAAEI
ISALMFLHEKGIIYRDLKLDNVLLDHEGHCKLADFGMCKEGICNGVTTATFCGTPDYIAPEILQEMLYGP
AVDWWAMGVLLYEMLCGHAPFEAENEDDLFEAILNDEVVYPTWLHEDATGILKSFMTKNPTMRLGSLTQG
GEHEILRHPFFKEIDWAQLNHRQLEPPFRPRIKSREDVSNFDPDFIKEEPVLTPIDEGHLPMINQDEFNRN
FSYVSPQL

>XP_004577315.1 T-cell-specific surface glycoprotein CD28 [Ochotona princeps]
MVLLAENKILVKQSPMLVVQNNEVNLSCKYTYNLSKEFRASLYKGADSAVEVCVNGNFSHPRQFHSTT
GFSCDGLDNETVTFFLKNLHVNQTDIYFCKIEIMYPPPYIDNEKSNGTIIHVKEQHLCPAHLSSSESSTF
FWVLVVVCGVLAFYSMLLTIVLFSWMTSKKNRLLQSDYMNMTPRRPGPTRKHYQPYAPARDFAAAYRS

>sp|P31041.2|CD28_MOUSE RecName: Full=T-cell-specific surface glycoprotein CD28;
AltName: CD_antigen=CD28; Flags: Precursor
MTLRLFLALNFFSVQVTENKILVKQSPLLVDVSNVSLSCRYSYNLLAKEFRASLYKGVNSDVEVCVGN
GNFTYQPQFRSNAEFNCDGDFDNETVTFRWLNLHVNHDTIYFCKIEFMYPPPYLDNERSNGTIIHIKEKH
LCHTQSSPKLFWALVVVAGVLFCYGLLVTVLALCVIWTNSRRNRLLQSDYMNMTPRRPGPTRKPYQPYAPA
RDFAAAYRP

>NP_001186211.2 lipopolysaccharide-responsive and beige-like anchor protein
isoform 1 [Homo sapiens]
MASEDNRPSPPTGDDGGGGGREETPTEGGALSLKPLPIRGIRMKFAVLTGLVEVGEVSNRDIVETVF
NLLVGGQFDLEMFIIQEGESINCMVDLLEKCDITCQAEVWSMFTA ILKKSIRNLQVCTEVGLVEKVLGK
IEKVDNMIADLLVDMGLVASYNLTVRELKLFSSKLQGDKGRWPPHAGKLLSVLKHMPQKYGPDAFFNFP
GKSAAAIAPPIAKWPYQNGFTFHTWLRMDPVNNINVDKDKPYLYCFRTSKGLGYSAHFVGGCLIVTSIK
SKGKGFGHCVKFDFKPQKWMVTIVHIYNRWKNSLRVYNGELASYGEITWFVNTSDTFDKCFLGSSET
ADANRVFCGQMTAVYLFSEALNAAQIFAIYQLGLGYKGTFFKFAESDLFLAEHHKLLLYDGKLSSAIAFT
YNPRATDAQLCLESSPKDNPSIFVHSPHALMLQDVKAVLTHSIQSAMHSIGGVQVLFPLFAQLDYRQYLS
DEIDLTICSTLLAFIMELLKNSIAMQEQLACKGFLVIGYSLEKSSKSHVSRVLELCLAFSKYLSNLQN
GMPLKQLCDHVLLNPAIWIHTPAKVQLMLYTYLSTEFITVNIYNTIRRVGTVLLIMHTLKYYYYWAVNP
QDRSGITPKGLDGP RPNQKEMLSLRAFLLMFIKQLVMKDSGVKEDELQAILNYLLTMHEDDNLMDVLQLL
VALMSEHPNSMIPAFDQRNGLRVIYKLLASKSEGIRVQALKAMGYFLKHLAPKRKAEMVLMGHGLFSLLAE
RLMLQTNLTITMTYNVLFIEILIEIGTQVIHKQHPDPDSSVKIQNPQILKVIATLLRNSPQCPESEVRR
AFLSDMIKLFNNSRENRRSLLQCSVWQEWMLSLCYFNPKNSDEQKITEMVYAI FRILLYHAVKYEWGGWR
VWVDTL SITHSKVTFEIHKENLANIFREQGQKVDEEIGLCSSTSVQAASGIRRDINVS VGSQQPDTKDSP
VCPHFTTNGNENSSI EKTSSLESASNIELQTNTSYEEMKAEQENQELPDEGTLEETLTNETRNADDLEV
SSDII EAVAISNSFITTGKDSMTVSEVTASISSPSEEDASEMPEFLDKSIVEEEEDDDYVELKVEGSPT
EEANLPTELQDNSLSPAASEAGEKLD MFGNDDKLIFQEGKPVTEKQTD TETQDSKDSGIQTMTASGSSAM

SPETTVSQIAVESDLGQMLEEGKKATNLTRETKLINDCHGSVSEASSEQKIAKLDVSNVATDTERLELKA
 SPNVEAPQPHRHVLEISRQHEQPGGIIAPDAVNGQRRDSRSTVFRIPEFNWSQMQHRLTDLFSIETDI
 QMWRSHSTKTVMDFVNSSDNVIFVHNTIHLISQVMDNMVMACGGILPLLSAATSATHELENIEPTQGLSI
 EASVTFLQRLISLVDVLI FASSLGFTEIEAEKSMSSGGILRQCLRLVCAVAVRNCLECCQHSQKTRGDK
 ALKPMHSLIPLGKSAKSPVDIVTGGISPVRDLDRLLQDMDINRLRAVVFREDIESKQAQFLALAVVYFI
 SVLMVSKYRDILEPQNERHSQSCTETGSEENENVSLSEITPAAFSTLTASVEESESTSSARRRDSGIGEE
 TATGLGSHVEVTPHTAPPGVSAGPDASEVLSTLSLEVNKSPETKNDRGNDLDTKATPSVSVSKNVNVKD
 ILRSLVNIPADGVTVDPALLPACLGALGDLSEVQPVQFRSFDRSVIVAAKKSAVSPSTFNTSIPTNAVS
 VVSSVDSAQASDMGGESPGSRSSNAKLPSVPTVDSVSQDPVSNMSITERLEHALEKAAPLLREIFVDFAP
 FLSRTLGLSHGQELLIEGTSLVCMKSSSSVVELVMLLCSQEWQNSIQKNAGLAFIELVNEGRLLSQTMKD
 HLVRVANEAEFILSRQRAEDIHRHAEFESLCAQVSADKREDEKMDHLIRAAKYRDHVTATQLIQKIINI
 LTDKHGAWGNSAVSRPLEFWRLDYWEDDLRRRRFRVRNPLGSTHPEATLKTAVEHATDEDILAKGQSIR
 SQALGNQNSENEILLEGGDDTLSSVDEKDLENLAGPVSLSTPAQLVAPSVVVKGTLSVTSSSELYFEVDEE
 DPNFKKIDPKILAYTEGLHGKWLFTIERSIFSRRYLLQNTALEIFMANRVAVMFNFPDPATVKKVNYLP
 RVGVGTSFGLPQTRRISLASPRQLFKASNMTQRWQHREISNFEYLMFLNTIAGRSYNDLNQYPVFPWVIT
 NYESEELDTLPTNFRDL SKPIGALNPKRAAFFAERYESWEDDQVPKFHYGTHYSTASFVLAWLLRIEPF
 TTYFLNLQGGKFDHADRTFSSISRWRNSQRDTSIDIKELIPEFYLLPEMFVNFNNYNLGVMDGTVVSDV
 ELPPWAKTSEEFVHINRLALESEFVSCQLHQWIDLIFGYKQQGPEAVRALNVFYLLTYEGAVNLNSITDP
 VLREAVEAQIRSFQTPSQLLIEPHPPRGSAMQVSPLMFTDKAQQDVIMVLKFPSNSPVTHVAANTQPGL
 ATPAVITVTANRLFAVNKWHNLP AHQGAQQDPYQLPVEIDPLIASNTGMHRRQITDLLDQSIQVHSQCF
 VITSDNRYILVCGFWDKSFRVYSTDTGRLIQVVFHWDVVTCLARSESYIGGCYILSGSRDATLLLWYW
 NGKCSGIGDNPGETAAPRAILTGHDYEVTCAA VCAELGLVLSGSQEGPCLIHSMNGDLLRTLEGPENCLK
 PKLIQASREGHCVIFYENGLFCTFSVNGKLQATMETDDNIRAIQLSRDQGYLLTGGRGVVVVRQVSDLK
 QLFAYPGCDAGIRAMALSYDQRCIISGMASGSIVLFYNDFNRRWHHEYQTRY

>sp|P42081.2|CD86_HUMAN RecName: Full=T-lymphocyte activation antigen CD86;
 AltName: Full=Activation B7-2 antigen; AltName: Full=B70; AltName: Full=BU63;
 AltName: Full=CTLA-4 counter-receptor B7.2; AltName: Full=FUN-1; AltName:
 CD_antigen=CD86; Flags: Precursor
 MDPQCTMGLSNILFVMAFLLSGAAPLKIQA YFNETADLPCQFANSQNSLSSELVVFQQDENLVLNEVYL
 GKEKFDSVHSKYMGRTSFSDSDSWTLRLHNLQIKDKGLYQCIIHKKPTGMIRIHQMNSELSVLANFSQPE
 IVPISNITENVYINLTCSSIHGYPEPKMSVLLRTKNSTIEYDGVMQKSQDNVTELYDVSISLSVSFPDV
 TSNMTIFCILETDKTRLLSSPFSIELEDPPPPDHIPWITAVLPTVIICVMVFCLILWKWKKKKRPRNSY
 KCGTNTMERESESEQTKKREKIHIPERSDEAQRVFKSSKTSSCDKSDTCF

>sp|Q7Z6A9.3|BTLA_HUMAN RecName: Full=B- and T-lymphocyte attenuator; AltName:
 Full=B- and T-lymphocyte-associated protein; AltName: CD_antigen=CD272; Flags:
 Precursor
 MKTLPAMLGTGKLFVWFFLIPYLDIWNHKGESCDVQLYIKRQSEHSILAGDPFELECPVKYCANRPHVT
 WCKLNGTTCKVLEDRQTSWKKEKNISFFILHFEPVLPNDNGSYRCSANFQSNLIESHSTTLVTDVKSAS
 ERPSKDEMASRPWLLYRLLPLGGLPLLITTCFLFCCLRRHQGKQNELSDTAGREINLVD AHLKSEQTEA
 STRQNSQVLLSETGIYDNDPDLCFRMQEGSEVYSNPCLEENKPGIVYASLNHNSVIGPNSRLARNVKEAPT
 EYASICVRS

>NP_001139797.1 T-cell immunoreceptor with Ig and ITIM domains precursor [Mus
 musculus]
 MHGWLVLVWVQGLIQAAFLATGATAGTIDTKRNISAEEGGSVILQCHFSSDTAEVTQVDWKQDQLLAIY
 SVDLGWHVASVFSRVRVPGPSLGLTFQSLTMNDTGEYFCTYHTYPPGGIYKGRIFLKVQESSVAQFQTAPL

GGTMAAVLGLICLMVTGVTVLARKKSIRMHSIESGLGRTEAEPQEWNLRLSSPGSPVQTQTAPAGPCGE
QAEDDYADPQEYFNVLSYRSLESFIAVSKTG

>NP_062261.3 T-lymphocyte activation antigen CD86 precursor [Mus musculus]
MDPRCTMGLAILIFVTVLLISDAVSVETQAYFNGTAYLPCPFTKAQNISLSELVFWQDQKLVLYEHYL
GTEKLDVNAKYLGRTSFDRNNWTLRLHNVQIKDMGSYDCFIQKKPPTGSIILQQTLTELSVIANFSEPE
IKLAQNVGTGNSGINLTCTSKQGHKPKKMYFLITNSTNEYGDNMQISQDNVTELFISISNLSLSPFDGVW
HMTVVCVLETESMKISSKPLNFTQEFSPQTYWKEITASVTVALLLVMLLIIVCHKKPNQPSRPSNTASK
LERDSNADRETINLKELEPQIASAKPNAE

>NP_006717.2 lipopolysaccharide-responsive and beige-like anchor protein isoform
2 [Homo sapiens]
MASEDNRPSPPTGDDGGGGGREETPTEGGALSLKPGLPIRGIRMKFAVLTGLVEVGEVSNRDIVETVF
NLLVGGQFDLEMFIIQEGESINCMVDLLEKCDITCQAEVWSMFTAILKKSIRNLQVCTEVGLVEKVLGK
IEKVDNMIADLLVDMGLVASYNLTVRELKLFSSKLQGDKGRWPPHAGKLLSVLKHMPQKYGPDAFFNFP
GKSAAAIAPPIAKWPYQNGFTFHTWLRMDPVNNINVDKDKPYLYCFRTSKGLGYSAHFVGGCLIVTSIK
SKGKGFGHCVKFDFKPQKWMVTIVHIYNRWKNSLRVYNGELASYGEITWFVNTSDTFDKCFLGSSET
ADANRVFCGQMTAVYLFSEALNAAQIFAIYQLGLGYKGTFFKFAESDLFLAEHHKLLLYDGKLSSAIAFT
YNPRATDAQLCLESSPKDNPSIFVHSPHALMLQDVKAVALTHSISQAMHSIGGVQVLFPLFAQLDYRQYLS
DEIDLITICSTLLAFIMELLKNSIAMQEQLACKGFLVIGYSLEKSSKSHVSRVLELCLAFSKYLSNLQN
GMPLLKQLCDHVLLNPAIWIHTPAKVQLMLTYLSTEFITGVNIYNTIRRVGTVLLIMHTLKYYYWAVNP
QDRSGITPKGLDGPRPNQKEMLSLRAFLLMFIKQLVMKDSGVKEDELQAILNYLLTMHEDDNLMDVLQLL
VALMSEHPNSMIPAFDQRNGLRVIYKLLASKSEGIRVQALKAMGYFLKHLAPKRKAEVMLGHGLFSLLAE
RLMLQTNLITMTYNVLFIEILIEQIGTQVIHKQHPDPDSSVKIQNPQILKVIATLLRNSPQCPESEVRR
AFLSDMIKLFNNSRENRRSLLQCSVWQEWMLSLCYFNPKNSDEQKITEMVYAIFRILLYHAVKYEWGGWR
VWVDTLSITHSKVTFEIHKENLANIFREQQGVDEEIGLCSSTSVQAASGIRRDINVSVGSQQPDTKDSP
VCPHFTTNGNENSSIIEKTSSLESASNIELQTNTSYEEMKAEQENQELPDEGTLEETLTNETRNADDLEV
SSDIIIEAIAISSNSFITTGKDSMTVSEVTASISSPSEEDASEMPEFLDKSIVEEEEDDDYVELKVEGSPT
EEANLPTELQDNSLSPAASEAGEKLDMGNDKILIFQEGKPVTEKQTDTTQDSKDSGIQTMTASGSSAM
SPETTVSQIAVESDLGQMLEEGKATNLTRTKLINDCHGSVSEASSEQKIAKLDVSNVATDTERLELKA
SPNVEAPQPHRHVLEISRQHEQPGQGIAPDAVNGQRDRSSTVFRIPEFNWSQMHQRLTDLFSIETDI
QMWRSHSTKTVMDFVNSSDNVIFVHNTIHLISQVMDNMVMACGGILPLLSAATSATHELENIEPTQGLSI
EASVTFLQRLISLVDVLIASSLGFTIEIAEKSMSSGGILRQCLRLVCAVAVRNCLECQHSQKTRGDK
ALKPMHSLIPLGKSAKSPVDIVTGGISPVRDLDRLLQDMDINRLRAVVFRDIEDSKQAQFLALAVVYFI
SVLMVSKYRDILEPQNERHSQSCTETGSENVNSLSEITPAAFSTLTASVEESESTSSARRRDSGIGEE
TATGLGSHVEVTPHTAPPGVSAGPDASEVLSTLSLEVNKSPETKNDRGNDLDTKATPSVSVSKNVNVKD
ILRLSVNIPADGVTVDPALLPACLGALGDLSEVQPVQFRSFDPSVIVAAKKSAVSPSTFNTSIPTNAVS
VVSSVDSAQASDMGGESPGSRSSNAKLPSVPTVDSVVSQDPVSNMSITERLEHALEKAAPLLREIFVDFAP
FLSRTLLGSHGQELLIIEGTSLVCMKSSSVVELVMLLCSQEWQNSIQKNAGLAFIELVNEGRLLSQTMKD
HLVRVANEAEFILSRQRAEDIHRHAEFESLCAQYSADKREDEKMDHLIRAAYRDHVTATQLIKIINI
LTDKHGAWGNSAVSRPLEFWRLDYWEDDLRRRRRFVRNPLGSTHPEATLKTAVEHVCIFKLRENSKATDE
DILAKGKQSIRSQUALGNQNSENEILLEGDDDTLSSVDEKDLENLAGPVSLSTPAQLVAPSVVVKGLSVT
SSELYFEVDEEDPNFKKIDPKILAYTEGLHGKWLFEIRSIFSRRYLLQNTALEIFMANRVAVMFNFPDP
ATVKKVNVNYPVGVGTSFGLPQTRRISLASPRQLFKASNMTQRWQHREISNFEYLMFLNTIAGRSYNDL
NQYPVFPWVITNYESEELDLTLPNTFRDLSPKIGALNPKRAAFFAERYESWEDDQVPKFHYGTHYSTASF
VLAWLLRIEPTTYFLNLQGGKFDHADRTFSSISRWRNSQRDTSIDIKELIPEFYLPFMFVNFNNYNLG
VMDDGTVSDVELPPWAKTSEEFVHINRLALESEFVSCQLHQWIDLIFGYKQGPEAVRALNVFYLYTE
GAVNLNSITDPVLREAVEAQIRSFQGTPSQLLIEPHPPRGSAMQVSPLMFTDKAQQDVIMVLKFPSNSPV

THVAANTQPGLATPAVITVTANRLFAVNKWHNLP AHQGA VQDQPYQLPVEIDPLIASNTGMHRRQITDLL
DQSIQVHSQC FVITSDNRYILVCGFWDK SFRVYSTDTGR LIQVVF GHWDVVTCLARSESYIGGNCYILSG
SRDATLLLWY WNGKCSGIGDNPGSETAAPRAILTGH DYEVTCAAVCAELGLVLSGSQEGPCLIHSMNGDL
LRTLEGPENCLKPKLIQASREGHC VIFYENGLFCTFSVNGKLQATMETDDNIRAIQLSRDGQYLLTGDR
GVVVVRQVSDLKQLFAYPGCDAGIRAMALSYDQRCIISGMASGSIVLFYNDFNRRWHHEYQTRY

>NP_109620.2 lipopolysaccharide-responsive and beige-like anchor protein isoform
alpha [Mus musculus]

MASEDNRAPSRPPTGDDGGGGGKEETPTEGGALSLKPLPIRGIRMKFAVLTGLVEVGEVSNRDIVETVF
NLLVGGQFDLEMFIIQEGESIMCMVELLEKCDVTCQAEVWSMFTA ILKKSIRNLQVCTEVGLVEKVLGK
IEKVDSMIADLLVDM LGVLASYNLTVRELK LFFSKLQGDKGQWPPHAGKLLSVLKHMPQKYGPDAFFNFP
GKSAAAIALPPIARWPYQNGFTFHTWLRMDPVNNINVDKDKPYLYCFRTSKGLGYSAHFVGGCLIITSIK
SKGKGQFHCVKFDFKPKQWYMTIVHIYNRWKNSSELRCYVNGELASYGEITWFVNTSDTFDKCFLGSSET
ADANRVFCGQMTAVYLFSDALNAAQIFAIYQLGLGYKGTFFKFAESDLFLAEHHKLLLYDGKLSSAIAFT
YNPRATDAQLCLESSPKDNPSIFVHSPHALMLQDVKA VLTHSIQSAMHSIGGVQVLFPLFAQLDYKQYLS
DEVDLTICTTLLAFIMELLKNSIAMQEQLACKGFLVIGYSLEKSSKSHVSRVLELCLAFSKYLSNLQN
GMPLLKQLCDHILLNPAVWIHTPAKVQLMLYTYLSTEFIGTVNIYNTIRRVGTVLLIMHTLKYYYYWAVNP
QDRSGITPKGLDGPRPNQKEILSLRAFLLMFIKQLVMKDSGVKEDELQAILNYLLTMHEDDNLMDVLQLL
VALMAEHPNSMIPAFDQRNGLRVIYKLLASKSEGIRVQALKALGYFLKHLAPKRKAEVMLGHGLFSLLAE
RLMLQTNLITMTMYNVLF EILIEQICTQVIHKQHPDPSTVKIQNPQILKVIATLLRNSPQCPESEVRR
AFLSDMIKLFNNSRENRRSLLQCSVWQEWMLSLCYFNPKNSDEQKITEMVYAI FRILLYHAVKYEWGGWR
VWVDTLSITHSKVTFEIHKENLANIFREEQRKGDEETGPCSSSLVPEGTGATRGVDVSVGSQHEDRKDSP
ISPHFTRNSDENSSIGRASSIDSASNTLQTHDMSSDEKKVERENQELLDQATVEETATNGAKDDLETSS
DAAEPVTINSNSLEPGKDTVTISEVSASISSPSEEDAAEMPELLEKSGVEEEEDDDYVELKVEGSPTEEA
GLPTELQGEGLSVAASEGREEPDMCGHGCEVQVEAPITKIHNDPETTDSEDSRFPTVATAGSLATSSEVP
VPQATVQSDSHEMLDGGMKATNLAGETESVSDCADNVSEAPATSEQKITKLDVSSVASDTERFELKASTS
TEAPQQRHGLEISRQQEQTAQGTAPDAVDQQRDRSRSTMFRIPEFKWSQMHQRLLTDLLFSIETDIQMW
RSHSTKTVMDFVNSSDNVIFVHNTIHLISQVMDNMVMACGGILPLLSAATSATHELENIEPTQGLSIEAS
VTFLQRLISLVDVLIFASSLGFTIEIAEKNMSSGGILRQLRLVCAVAVRNCLECCQHSQ LKARGDTAKS
SKTIHSLIPMGKSAAKSPVDIVTGGISPVRDLDRLLQDMDINRLRAVVFRDIEDSKQAQFLALAVVYFIS
VLMVSKYRDILEPQDERHSQSLKETSSDNGNASLPDAENTPAEFSSLTLSSVEESLEGTSCTRRRDSGLG
EETASGLGSGLSVASPAAPLGVSAGPD AISEVLCTLSLEV NKSQETRIDGGNELDRKVTPSVPVSKNVNV
KDILRSLVNMPADGVTVDPALLPACLGALGDLSDVPPMQFRSFDRSVIIATKKSSVLP SALTTSAPSSA
VSVVSSVDPTHASDTGGESPGSRSPNAKLPSVAAVGSVPQDPAAHMSITERLEHALEKAAPLLREIFVDF
APFLSRTLLGSHGQELLI EGTSLVCMKSSSSVVELVMLLCSQEWQNSIQKNAGLAFIELVNEGRLLSQTM
KDHLVRVANEAEFILSRQRAEDIHRHAEFESLCAQYSADKREEEKMCDHLIRAAKYRDHVTATQLIQKII
NLLTDKHGAWGSSAVSRPREFWRLDY WEDDLRRRRRFRVRNPLGSTHPEATLKTAVEHAADEDILAKGKQS
IKSQALGNQNSENEALLEGDDDTLSSVDEKDLENLAGPVSLSTPAQLVAPSVVVKGTLSVTSSELYFEVD
EEDPNFKKIDPKILAYTEGLHGKWL FTEIRSIFSRRYLLQNTALEIFMANRVAVMFNFPDPATVKKVVNY
LPRVGVGTSFGLPQTRISLATPRQLFKASNMTQRWQHREISNFEYLMFLNTIAGRSYNDLNQYPVPFWV
ITNYESEELDLTLPSNFRDLSKPIGALNPKRAAFFAERFESWEDDQVPKFHYGTHYSTASFVLAWLLRIE
PFTTYFLNLQGGKFDHADRTFSSVSRWRNSQRDTS DIKELIPEFYYPEMFVNFNNYNLGVMDDGTVVS
DVELPPWAKTSEEFVRINRLALESEFVSCQLHQWIDLIFGYKQQGPEAVRALNVFYLYTYEGAVNLNSIT
DPVLREAVEAQIRSFGQTPSQLLIEHP PRGSAMQASPLMFTDQAQQDVIMVLKFPSNSPVTHVAANTQP
GLAMPVITVTANRLFAVNKWHNLP AHQGA VQDQPYQLPVEIDPLIACGTGTHRRQVTDLLDQSIQVHSQ
CFVITSDNRYILVCGFWDK SFRVYSTDTGKLIQVVF GHWDVVTCLARSESYIGGNCYILSGSRDATLLLW
YWNGKSSGIGDNPGGETATPRAILTGH DYEITCAAVCAELGLVLSGSQEGPCLIHSMNGDLLRTLEGPEN
CLKPKLIQASREGHC VIFYENGCFCTFSVNGKLQATVETDDHIRAIQLSRDGQYLLTG DNGVVIVRQVS

DLKQLFAYPGCDAGIRAMALSFDQRCIISGMASGSIVLFYNDFNRWHHEYQTRY

>NP_001071156.1 lipopolysaccharide-responsive and beige-like anchor protein isoform beta [Mus musculus]

MASEDNRAPSRPPTGDDGGGGGKEETPTEGGALSLKPGLPIRGIRMKFAVLTGLVEVGEVSNRDIVETVF
NLLVGGQFDLEMFIIQEGESIMCMVELLEKCDVTCQAEVWSMFTAILKKSIRNLQVCTEVGLVEKVLGK
IEKVDSMIADLLVDMGLVASYNLTVRELKLFSSKLQGDKGQWPPHAGKLLSVLKHMPQKYGPDAFFNFP
GKSAAAIALPPIARWPYQNGFTFHTWLRMDPVNNINVDKDKPYLYCFRTSKGLGYSAHFVGGCLIITSIK
SKGKGFQHCVKFDFKPQKWYMTIVHIYNRWKNSLRVYNGELASYGEITWFVNTSDFDKCFLGSSET
ADANRVFCGQMTAVYLFSDALNAAQIFAIYQLGLGYKGTFFKFAESDLFLAEHHKLLLYDGKLSSAIAFT
YNPRATDAQLCLESSPKDNPSIFVHSPHALMLQDVKAFLTHSIQSAMHSIGGVQVLFPLFAQLDYKQYLS
DEVDLTICTTLLAFIMELLKNSIAMQEMLACKGFLVIGYSLEKSSKSHVSRVLELCLAFSKYLSNLQN
GMPLLKQLCDHILLNPAVWIHTPAKVQLMLYTYLSTEFITVNIYNTIRRVGTVLLIMHTLKYYYYWAVNP
QDRSGITPKGLDGP RP NQKEILSLRAFLLMFIKQLVMKDSGVKEDELQAILNYLLTMHEDDNLMDVLQLL
VALMAEHPNSMIPAFDQRNGLRVIYKLLASKSEGIRVQALKALGYFLKHLAPKRKAEVMLGHGLFSLAE
RLMLQTNLITMTYNVLFIEILIEQICTQVIHKQHPDPSTVKIQNPQILKVIATLLRNSPQCPESEVRR
AFLSDMIKLFNNSRENRRSLLQCSVWQEWMLSLCYFNPKNSDEQKITEMVYAIFRILLYHAVKYEWGGWR
VWVDTLSITHSKVTFEIHKENLANIFREEQRKGDEETGPCSSSLVPEGTGATRGVDVSVGSQHEDRKDSP
ISPHFTRNSDENSSIGRASSIDSASNTLQTHDMSSDEKKVERENQELLDQATVEETATNGAKDDLETSS
DAAEPTVINSNSLEPGKDTVTISEVSASISSPSEEDAAEMPELLEKSGVEEEEDDDYVELKVEGSPTEEA
GLPTLQGEGLSVAASEGREEPDMCGHGCEVQVEAPITKIHNDPETTSSEDSRFP TVATAGSLATSSEVP
VPQATVQSDSHEMLDGGMKATNLAGESESVDCA DN VSEAPATSEQKITKLDVSSVASDTERFELKASTS
TEAPQQRHGLEISRQEQTAQGTAPDAVDQQRDRSRSTMFRIPEFKWSQMHRLLTDLLFSIETDIQMW
RSHSTKTVMDFVNSSDNVIFVHNTIHLISQVMDNMVACGGILPLLSAATSATHELENIEPTQGLSIEAS
VTFLQRLISLVDVLI FASSLGFTIEAEKNMSSGGILRQCLRLVCAVAVRNCLECQQHSQLKARGDTAKS
SKTIHSLIPMGKSAAKSPVDIVTGGISPVRDLDRLLQDMDINRLRAVVFRDIEDSKQAQFLALAVVYFIS
VLMVSKYRDILEPQDERHSQSLKETSSDNGNASLPDAENTPAEFSSLTLSSVEESLEGTSCTRRRDSGLG
EETASGLGSGLSVASPAAPLGVSAGPDASEVLCTLSLEVNKSQETRIDGGNELDRKVTPSPVSKNVNV
KDILRSLVNMPADGVTVPDALLPPACLGALGDLSDVPPMQFRSFRSVIIATKKSSVLP SALTTSAPSSA
VSVVSSVDPTHASDTGGESPGSRSPNAKLPSVAAVGSVPQDPAAHMSITERLEHALEKAAPLLREIFVDF
APFLSRTLLGSHGQELLI EG TSLVCMKSSSSVVELVMLLCSQEWQNSIQKNAGLAFIELVNEGRLLSQT
KDHLVRVANEAEFILSRQRAEDIHRHA EFESLCAQYSADKREEEKMCDHLIRAAKYRDHVTATQLIQKII
NLLTDKHGAWGSSAVSRPREFWRLDYWEDDLRRRRRFRV R NPLGSTHPEATLKTAVEHA ADEDILAKGKQS
IKSQALGNQNSENEALLEGDDDTLSSVDEKDLENLAGPVSLSTPAQLVAPSVVVKGTLSVTSSELYFEVD
EEDPNFKKIDPKILAYTEGLHGKWLFT EIRSIFSRRYLLQNTALEIFMANRVAVMFNFPDPATVKKVNY
LPRVGVGTSFGLPQTRISLATPRQLFKASNMTQRWQHREISNFEYLMFLNTIAGRSYNDLNQYPVFPWV
ITNYESEELDTLPSNFRDLSKPIGALNPKRAAFFAERFESWEDDQVPKFHYGTHYSTASFVLAWLLRIE
PFTTYFLNLQGGKFDHADRTFSSVSRAWRNSQRDTS DIKELIPEFYYP EMFVNFNNYNLGVMDDGTVVS
DVELPPWAKTSEEFVRINRLALESEFVSCQLHQWIDLIFGYKQQGPEAVRALNVFYLYTEGAVNLNSIT
DPVLREAVEAQIRSFGQTPSLLIEPHPPRG SAMQASPLMFTDQAQQDVIMVLKFPSNSPVTHVAANTQP
GLAMPAVITVTANRLF AVNKWHNLPAHQGAVQDQPYQLPVEIDPLIACGTGTHRRQVTDLLDQSIQVHSQ
CFVITSDNRYILVCGFWDKSFRVYSTDTGKL IQVVFGHWVVTCLARSESYIGGCYILSGSRDATLLW
YWNGKSSGIGDNPGGETATPRAILTGH DYEITCAAVCAELGLVLSGSQEGPCLIHSMNGDLLRTLEGPEN
CLKPKLIQASREGHC VIF YENGCFCTFSVNGKLQATVETDDHIRVSAVGSTL FLLLGSSK

>NP_001071155.1 lipopolysaccharide-responsive and beige-like anchor protein isoform gamma [Mus musculus]

MASEDNRAPSRPPTGDDGGGGGKEETPTEGGALSLKPGLPIRGIRMKFAVLTGLVEVGEVSNRDIVETVF

NLLVGGQFDLEMFIIQEGESIMCMVELLEKCDVTCQAEVWSMFTAILKKSIRNLQVCTEVGLVEKVLGK
 IEKVDSMIADLLVDMGLVSLASYNLTVRELKLFSSKLQGDKGQWPPHAGKLLSVLKHMPQKYGPDAFFNFP
 GKSAALIALPPIARWPYQNGFTFHTWLRMDPVNNINVDKDKPYLYCFRTSKGLGYSAHFVGGCLIITSIK
 SKGKGFQHCVKFDFKPKQWYMTIVHIYNRWKNSLRVYNGELASYGEITWFVNTSDTFDKCFLGSSET
 ADANRVFCGQMTAVYLFSDALNAAQIFAIYQLGLGYKGTFFKAESDLFLAEHHKLLLYDGKLSSAIAFT
 YNPRATDAQLCLESSPKDNPSIFVHSPHALMLQDVKAULTHSIQSAMHSIGGVQVLFPLFAQLDYKQYLS
 DEVDLTICTTLLAFIMELLKNSIAMQEQMLACKGFLVIGYSLEKSSKSHVSRVLELCLAFSKYLSNLQN
 GMPLKQLCDHILLNPAVWIHTPAKVQLMLYTYLSTEFITVNIYNTIRRVGTVLLIMHTLKYYYWAVNP
 QDRSGITPKGLDGRPNQKEILSLRAFLLMFIKQLVMKDSGVKEDELQAILNYLLTMHEDDNLMDVLQLL
 VALMAEHPNSMIPAFDQRNGLRVIYKLLASKSEGIRVQALKALGYFLKHLAPKRKAEMVLGHGLFSLAE
 RLMLQTNLTITMTYNVLFIEILIEQICTQVIHKQHPDPDSTVKIQNPQILKVIATLLRNSPQCPESEVRR
 AFLSDMIKLFNNSRENRRSLQCSVWQEWMLSLCYFNPKNSDEQKITEMVYAFRILLYHAVKYEWGGWR
 VWVDTLSITHSKVTFEIHKENLANIFREEQRKGDEETGPCSSSLVPEGTGATRGVDVSVGSQHEDRKDSP
 ISPHFTRNSDENSSIGRASSIDSASNTLQTHDMSSDEKKVERENQELLDQATVEETATNGAKDDLETSS
 DAAEPVTINSNSLEPGKDTVTIIEVSASISSPSEEDAAEMPELLEKSGVEEEEDDYVELKVEGSPTEEA
 GLPTLQGEGLSVAASEGREEDPMCGHGCVEQVEAPITKIHNDPETTDESDSRFPTVATAGSLATSSEVP
 VPQATVQSDSHEMLDGGMKATNLAGESESVDCAVNSEAPATSEQKITKLDVSSVASDTERFELKASTS
 TEAPQQRHGLEISRQQEQTAQGTAPDAVDQQRDRSRSTMFRIPEFKWSQMHQRLLTDLLFSIETDIQMW
 RSHSTKTVMDFVNSSDNVIFVHNTIHLISQVMDNMVACGGILPLLSAATSATHELENIEPTQGLSIEAS
 VTFLQRLISLVDVLIASSLGFTIEAEKNMSSGGILRQCLRLVCAVAVRNCLECQQHSQLKARGDTAKS
 SKTIHSLIPMGKSAAKSPVDIVTGGISPVRDLDRLLQDMDINRLRAVVFRDIEDSKQAQFLALAVVYFIS
 VLMVSKYRDILEPQDERHSQSLKETSSDNGNASLPDAENTPAEFSSLTSSVEESLEGTSCTRRRDSGLG
 EETASGLGSGLSVASPAAPLGVSAGPDAISEVLCTLSLEVNKSQETRIDGGNELDRKVTPSVPSKNVNV
 KDILRSLVNMPADGVTVDPALLPACLGALGDLSDVPPMQFRSFDRSVIIATKKSSVLPSALTTSAPSSA
 VSVVSSVDPTHASDTGGESPGSRSPNAKLPSVAAVGSVPQDPAAHMSITERLEHALEKAAPLLREIFVDF
 APFLSRTLLGSHGQELLIEGTSLVCMKSSSSVVELVMLLCSQEWQNSIQKNAGLAFIELVNEGRLLSQTM
 KDHLVRVANEAEFILSRQRAEDIHRHAEFESLCAQYSADKREEEKMCDHLIRAAKYRDHVTATQLIQKII
 NLLTDKHGAWGSSAVSRPREFWRLDYWEDDLRRRRRFRVRNPLGSTHPEATLKTAVEHAADEDILAKGKS
 IKSQALGNQNSENEALLEGDDTLSSVDEKDLENLAGPVSLSTPAQLVAPSVVVKGTLSVTSSSELYFEVD
 EEDPNFKKIDPKILAYTEGLHGKWLFTIERSIFSRRYLLQNTALEIFMANRVAVMFNFPDPATVKKVNY
 LPRVGVTSGFLPQTRRISLATPRQLFKASNMTQRWQHREISNFEYLMFLNTIAGRSYNDLNQYPVPFWV
 ITNYESEELDLTLPNFRDLSPKIGALNPKRAAFFAERFESWEDDQVPKFHYGTHYSTASFVLAWLLRIE
 PFTTYFLNLQGGKFDHADRTFSSVSRAWRNSQRDTSIDELIPEFYYPPEMFVNFNNYNLGVMDDGTVVS
 DVELPPWAKTSEEFVRINRLALESEFVSCQLHQWIDLIFGYKQGPEAVRALNVFYLYTYEGAVNLNSIT
 DPVLRFAVEAQIRSFGQTPSLLIEPHPPRGSAMQASPLMFTDQAQQDVIMVLKFPSNSPVTHVAANTQP
 GLAMPAVITVTANRLFAVNKWHNLPALHQAQVQDQPYQLPVEIDPLIGLSLLSLFAIH

>sp|P42681.3|TXK_HUMAN RecName: Full=Tyrosine-protein kinase TXK; AltName:
 Full=Protein-tyrosine kinase 4; AltName: Full=Resting lymphocyte kinase
 MILSSYNTIQSVFCCCCCSVQKRQMRQTQISLSTDEELPEKYTQRRRPWLSQLSNKKQSNTRGVQPSKRK
 PLPLPPSEVAEEKIQVKALYDFLPREPCNLALRRAEEYLILEKYNPHWWKARDRLGNEGLIPSNYVTEN
 KITNLEIYEWYHRNITRNQAEHLLRQESKEGAFIVRDSRHLGYSYISVFMGARRSTEAAIKHYQIKKNS
 GQWYVAERHAFQSIPELIWYHQHNAAGLMTRLRYPVGLMGSCLPATAGFSYEKWEIDPSELAFIKEIGSG
 QFGVVHLGEWRSHIQVAIKAINEGSMSEEDFIEEAKVMMKLSHSLVQLYGVCIQRKPLYIVTEFMENG
 C LLNYLRENKGLRKEMLLSVCQDICEGMEYLERNGYIHRDLAARNCLVSSTCIVKISDFGMTRYVLDDEY
 VSSFGAKFPIKWSPEVFLFNKYSSKSDVWSFGVLMWEVFTGKMPFENKSNLQVVEAISEGFRLYRPHL
 APMSIYEVMYSCWHEKPEGRPTFAELLRAVTEIAETW

>NP_001032720.1 cytotoxic T-lymphocyte protein 4 isoform CTLA-4delTM [Homo sapiens]

MACLGFRHKAQLNLATRTWPCTLLFLLFIPVFCKAMHVAQPAVVLASSRGIASFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPY
LGIGNGTQIYVIAKEKKPSYNRGLCENAPNRARM

>sp|002757.1|CD28_FELCA RecName: Full=T-cell-specific surface glycoprotein CD28;
AltName: CD_antigen=CD28; Flags: Precursor

MILRLLLALNFFPSIQVTENKILVKQLPRLVVYNNEVNLCKYTHNFFSKEFRASLYKGVDSAVEVCVVN
GNYSHQPQFYSSSTGFDGKLGNETVTFYLRNLFVNQTDIYFCKIEVMYPPPYIDNEKSNGTIIHVKEKH
LCPAQLSPESSKPFWALVVVGILGFYSLLATVALGACWMKTKRSRILQSDYMNMTPRRPGPTRRHYQPY
APARDFAAAYRS

>NP_001009844.1 T-cell-specific surface glycoprotein CD28 precursor [Felis catus]

MILRLLLALNFFPSIQVTENKILVKQLPRLVVYNNEVNLCKYTHNLSKEFRASLYKGVDSAVEVCVVN
GNYSHQPQFYSSSTGFDGKLGNETVTFYLRNLFVNQTDIYFCKIEVMYPPPYIDNEKSNGTIIHVKEKH
LCPAQLSPESSKPFWALVVVGILGFYSLLATVALGACWMKTKRSRILQSDYMNMTPRRPGPTRRHYQPY
APARDFAAAYRS

>NP_999314.1 cytotoxic T-lymphocyte protein 4 precursor [Sus scrofa]

MACSGFRSHGAWLELTSRTWPCTALFSLFIPVFSKGMHVAQPAVVLANSRGVASFVCEYGSAGKAAEVR
VTVLRAGSQMTEVCAATYTVEDELTFDDSTCTGTSTENKVNLTIQGLRAVDGLYICKVELLYPPPY
VGMGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFYSFLITAVSLSKMLKKRSLTTGVYVKMPPTPE
CEKQFQPYFIPIN

>NP_998795.1 B- and T-lymphocyte attenuator precursor [Rattus norvegicus]

MKTVPAMLVTPRSFREFFILLGLWSILCKEPTKRIGEERVLKIKRNSSRSATWGELFKIECPVTYCV
HRPNVTWCKHNGTRCVPLEVGPQLHTSWVENDQASAFVLYFEPIHLSDDGVYTCSANLNSEVINSHSVVI
HVTERTQNCSEHPLITASDIPDATNASRPSTMEERPGRTWLLYALLPLGTSLLLLACVCLLCFLRRIQK
EKKPSDLAGRERETNLVDIPVSSRTNSQILTSETGIYDNDPWSSRLGESESTISSQLEGNKQGIVYASLN
HCVIGRTPRQASKIQEAPTEYASICVRS

>NP_990642.1 T-cell-specific surface glycoprotein CD28 homolog precursor [Gallus gallus]

MLGILVVLCLIPAADV TENKILVAQRPLLIVANRTATLVCNYTYNGTGKEFRASLHKGTDSAVEVCFISW
NMTKINSNSNKEFNCRGIHDKDKVIFNLWNMSASQTDIYFCKIEAMYPPPYVYNEKSNGTVIHVRETPIQ
TQEPESATSYWVMVAVTGLLGFYSMLITAVFIIYRQKSKRNRYRQSDYMNMTPRHPPHQKNKGYPYAPT
RDYTAYRSWQP

>NP_032882.2 protein kinase C eta type isoform 1 [Mus musculus]

MSSGTMKFNGLRVRIGEAVGLQPTRWSLRHSLFKKGHQLDPYLTVSVDQVRVGQTSTKQKTNKPTYNE
EFCANVTDGGHLELAVFHETPLGYDHFVANCTLQFQELLRTAGTSDTFEGWVDLEPEGKVFFVITLTGSF
TEATLQRDRIFKHFTRKRRQRAMRRRVHQVNGHKFMATYLRQPTYCSHCREFIWGVFGKQGYQCQVCTCVV
HKRCHHLIVTACTCQNNINKVDKIAEQRFGINIPHKFNVHNYKVPTFCDHCGSLLWGIMRQGLQCKICK
MNVHIRCQANVAPNCGVNAVELAKTLAGMGLQPGNISPTSKLISRSTLRRQGKEGSKEGNGIGVNSSSRF
GIDNFEFIRVLGKGSFGKVMLARIKETGELYAVKVLKQDVILQDDDVECTMTEKRILSLARNHPFLTQLF
CCFQTPDRLFFVMEFVNGGDLMFHIQKSRRFDEARARFYAAEIIISALMFLHEKGIYRDLKLDNVLLDHE

GHCKLADFGMCKEGICNGVTTATFCGTPDYIAPEILQEMLYGPAVDWWAMGVLLYEMLCGHAPFEAENED
DLFEAILNDEVVYPTWLHEDATGILKSFMTKNPTMRGLSLTQGGHEILRHPFFKEIDWAQLNHRQLEPP
FRPRIKSREDVSNFDPDFIKEEPVLTPIDEGHLPMINQDEFNFSYVSPQL

>NP_851347.1 T-cell-specific surface glycoprotein CD28 precursor [Bos taurus]
MLRLLLALNFFPSIQVAENKILVKQSPMLVVNDNEVNLSCKYTYNLSKEFRASLYKGADSAVEVCAVNG
NHSHPQLSTNKEFNCTVKVGNETVTFYLDLYVNQTDIYFCKLEVLYPPPYIDNEKSNGTIIHVKEKHL
PSPRSPESKPFWLVVVGVLVYFSLVTVALSNCWMKNKRNRLQSDYMNMTPRRPGPTRRHYQPYAP
ARDFAAAYS

>sp|P16410.3|CTLA4_HUMAN RecName: Full=Cytotoxic T-lymphocyte protein 4;
AltName: Full=Cytotoxic T-lymphocyte-associated antigen 4; Short=CTLA-4;
AltName: CD_antigen=CD152; Flags: Precursor
MACLGFQRHKAQLNLATRTWPCTLLFLLFIPVFCKAMHVAQPAVVLASSRGIAFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPY
LGIGNGTQIYVIDPEPCPDSDFLWILAAVSSGLFFYSFLTAVSLSKMLKKRSPLTTGVYVKMPPEPE
CEKQFQPYFIPIN

>NP_005205.2 cytotoxic T-lymphocyte protein 4 isoform CTLA4-TM precursor [Homo sapiens]
MACLGFQRHKAQLNLATRTWPCTLLFLLFIPVFCKAMHVAQPAVVLASSRGIAFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPY
LGIGNGTQIYVIDPEPCPDSDFLWILAAVSSGLFFYSFLTAVSLSKMLKKRSPLTTGVYVKMPPEPE
CEKQFQPYFIPIN

>sp|Q9MYX7.1|CTLA4_PIG RecName: Full=Cytotoxic T-lymphocyte protein 4; AltName:
Full=Cytotoxic T-lymphocyte-associated antigen 4; Short=CTLA-4; AltName:
CD_antigen=CD152; Flags: Precursor
MACSGFQSHGAWLELTSRTWPCTALFSLFIPVFSGMHVAQPAVVLANSRGVASFVCEYGSAGKAAEVR
VTVLRRAGSQMTEVCAATYTVDELTFLLDDSTCTGTSTENKVNLTIQGLRAVDGLYICKVELLYPPPY
VGMGNGTQIYVIDPEPCPDSDFLWILAAVSSGLFFYSFLITAVSLSKMLKKRSPLTTGVYVKMPPEPE
CEKQFQPYFIPIN

>NP_067371.1 programmed cell death 1 ligand 2 precursor [Mus musculus]
MLLLLPILNLSLQLHPVAALFTVTAPKEVYTVDVGVSSVLECFDRRECTELEGRASLQKVENDTSLQS
ERATLLEEQLPLGKALFHIPSVQVRDSGQYRCLVICGAAWDYKYLTVKVKASYMRIDTRILEVPGTGEVQ
LTCQARGYPLAEVSWQNVSPANTSHIRTEGLYQVTSVLRLKPQSRNFSMFVNAHMKELTSAIIDPL
SRMEPKVPRTWPLHVFIPACTIALIFLAIVIIQRKRI

>NP_006130.1 T-cell-specific surface glycoprotein CD28 isoform 1 precursor [Homo sapiens]
MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVY
NYSQQLQVYSKTGFNCDGKLGNEVTFYLDLYVNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHL
CPSPLFPGPSKPFVVLVVVGVLACYSLLVTVAFIIFWVRSKRSRLHSDYMNMTPRRPGPTRKHYPYA
PPRDFAAAYS

>NP_005182.1 T-lymphocyte activation antigen CD80 precursor [Homo sapiens]
MGHTRRQGTSPSKCPYLNFFQLLVLAGLSHFCSGVIHVTKEVKEVATLSCGHNVSVLELAQTRIYWQKEK

KMVLTMMSGDMNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVTL SVKA
DFPTPSISDFEIPSTNIRRIICSTSGGFPEPHLSWLENGEELNAINTTVSQDPETELYAVSSKLDNFMTT
NHSFMCLIKYGHRLVNTQTFNWNTTKQEHFPDNLPSWAITLISVNGIFVICCLTYCFAPRCRERRRNERL
RRESVRPV

>NP_004186.1 tumor necrosis factor receptor superfamily member 18 isoform 1
precursor [Homo sapiens]
MAQHGMAGAFRALCGLALLCALSLGQRPTGGPGCGPGRLLLGTGTDARCCRVHTTRCCRDYPGEECCSEW
DCMCVQPEFHCGDPCCTTCRHHCPPGQGVQSQKFSFGFQCIDCASGTFSGGHEGHCKPWTDTQFGFL
TVFPGNKTHNAVCPGSPPAEPLGWLTVVLLAVAACVLLL TSAQLGLHIWQLRSQCMWPRETQLLLEVPP
STEDARSCQFPEEERGERSAEEKGRLGDLWV

>sp|Q28071.1|CD28_BOVIN RecName: Full=T-cell-specific surface glycoprotein CD28;
AltName: CD_antigen=CD28; Flags: Precursor
MLRLLLLALNFFPSIQVAENKILVKQSPMLVVNDNEVNL SCKYTYNLF SKEFRASLYKGADSAVEVCAVNG
NHSHP LQSTNKEFNCTVKVGNETVTFYLQDLVYNQTDIYFCKLEVLYPPPYIDNEKSNGTIIHVKEKHL C
PSPRSPESKPFWALVVVNGVLV FYSLLVTVALSNCWMKNKRNRLQSDYMNMTPRRPGPTRRHYQPYAP
ARDFAA YRS

>sp|P42069.1|CD28_RABIT RecName: Full=T-cell-specific surface glycoprotein CD28;
AltName: CD_antigen=CD28; Flags: Precursor
MILRLLAFNFFPSIQGTENKILVKQSPMLVVNNNEVNL SCKYTYNLF SKEFRASLYKGADSAVEVCVVN
GNFSHPHQFHSTGFNC DGKLGNETVTFYLNLYVNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKEQH
FCPAHPSPKSSTLFWVLVVVGAVLAFYSMLVTVALFSCWMKSKKNRLLQSDYMNMTPRRPGPTRKHYPY
APARDFAA YRS

>sp|P33681.1|CD80_HUMAN RecName: Full=T-lymphocyte activation antigen CD80;
AltName: Full=Activation B7-1 antigen; AltName: Full=BB1; AltName: Full=CTLA-4
counter-receptor B7.1; Short=B7; AltName: CD_antigen=CD80; Flags: Precursor
MGHTRRQGTSPSKCPYL NFFQLLVLAGLSHFCSGVIHVTKEVKEVATLSCGHNV SVEELAQTRIYWQKEK
KMVLTMMSGDMNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYECVVLKYEKDAFKREHLAEVTL SVKA
DFPTPSISDFEIPSTNIRRIICSTSGGFPEPHLSWLENGEELNAINTTVSQDPETELYAVSSKLDNFMTT
NHSFMCLIKYGHRLVNTQTFNWNTTKQEHFPDNLPSWAITLISVNGIFVICCLTYCFAPRCRERRRNERL
RRESVRPV

>sp|P31043.1|CD28_CHICK RecName: Full=T-cell-specific surface glycoprotein CD28
homolog; AltName: Full=CHT28; Flags: Precursor
MLGILVVLCLIPAADV TENKILVAQRPLLIVANRTATLVCNYTYNGTGKEFRASLHKGTDSAVEVCFISW
NMTKINSNSNKEFNCRGIHDKDKVIFNLWNMSASQTDIYFCKIEAMYPPPYVYNEKSNGTVIHVRETPIQ
TQEPESATSYWVMVAVTGLLG FYSLITAVFIIYRQKSKRNRYRQSDYMNMTPRHPPHQKNKGYPYAPT
RDYTAYRSWQP

>sp|P10747.1|CD28_HUMAN RecName: Full=T-cell-specific surface glycoprotein CD28;
AltName: Full=TP44; AltName: CD_antigen=CD28; Flags: Precursor
MLRLLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLF SREFRASLHKGLDSAVEVCVVG
NYSQQLQVYSKTGFNC DGKLGNESVTFYLNLYVNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHL
CPSPLFPGPSKPFWVLVVVGVLACYSLLVTVAFIIFWVRSKRSRLHSDYMNMTPRRPGPTRKHYPYA
PPRDFAA YRS

>NP_001333735.1 endophilin-B2 isoform 4 [Mus musculus]

MDFNMKKLASDAGIFFTRAVQFTEEFKFGQAEKTELDHFENLLARADSTKNWTERILRQTEVLLQPNPSA
RVEEFLEYEKLDKRVPSRVNTGELLAQYMAEAASELGPSTPYGKTLIKVSEAEKRLGAAERDFIHTASLSF
LTPLRNFLEGDWKTISKERRLLQNRRLDLDAKARLKKAKAAEAKATCEGDTVPDFQETRPRNYILSASA
SALWNDEVDKAEQELRVAQTEFDRQAEVTRLLLEGISSTHVNLRLCLHEFVKSQTTYAAQCYRHMLDLQK
QLGSSQGAIFPGTFVGTTEPASPLSSTPTTTAATMPVVPTGAVLAPPEEAALCLEEVAPPASGTRKAR
VLYDYEADSSSELALLADELITVYSLPGMDPDWLIGERGNKKGKVPVTTYLELLS

>NP_001349817.1 endophilin-B2 isoform 5 [Mus musculus]

MDFNMKKLASDAGIFFTRAVQFTEEFKFGQAEKTELDHFENLLARADSTKNWTERILRQTEVLLQPNPSA
RVEEFLEYEKLDKRVPSRVNTGELLAQYMAEAASELGPSTPYGKTLIKVSEAEKRLGAAERDFIHTASLSF
LTPLRNFLEGDWKTISKERRLLQNRRLDLDAKARLKKAKAAEAKATAEQELRVAQTEFDRQAEVTRLL
EGISSTHVNLRLCLHEFVKSQTTYAAQCYRHMLDLQKQLGRFPGTFVGTTEPASPLSSTPTTTAATMP
VVPTGAVLAPPEEAALCLEEVAPPASGTRKARVLYDYEADSSSELALLADELITVYSLPGMDPDWLIGER
GNKKGKVPVTTYLELLS

>NP_787058.5 T-lymphocyte activation antigen CD86 isoform 1 precursor [Homo sapiens]

MDPQCTMGSLNILFVMAFLLSGAAPLKIQAYFNETADLPCQFANSQNSLSELVFWQDQENLVLNEVYL
GKEKFDSVHSHKYMGRTSFSDSDSWTLRLHNLQIKDKGLYQCIIHKKPTGMIRIHMNSELSVLANSFSQPE
IVPISNITENVYINLTCSSIHGYPEPKMSVLLRTKNSTIEYDGVMQKSQDNVTELYDVSISLSVSFPDV
TSNMTIFCILETDKTRLLSSPFSIELEDPQPPDHIPWITAVLPTVIICVMVFCLILWKWKKKRPRNSY
KCGTNTMEREESEQTKKREKIHIPERSDEAQRVFKSSKTSSCDKSDTCF

>NP_001074550.1 glutaminase kidney isoform, mitochondrial isoform 1 [Mus musculus]

MMRLRGSAMRELLLRPPAAVGAVLRRAPLGLTLCRRPRGGSRPAGLVAAARLHPWWGGGGRAKGPAG
GLSSSPSEILQELGKGGTPPQQQQQQQQPGASPPAAPGPKDSPGETDAFGNSEGKEMVAAGDNKIKQGL
LPSLEDLLFYTIAEGQEKIPVHKFITALKSTGLRTSDPRLKECMDMLRLTLQTSDGVMLDKDLFKKCVQ
SNIVLLTQAFRRKFVIPDFMSFTSHIDELYESAKKQSGGKVADYIPQLAKFSPDLWGVSVCTVDGQRHSI
GDTKVPFCLQSCVKPLKYAIAVNDLGTEYVHRVYVGKEPSGLRFNKLFLNEDDKPHNPMVNAGAIIVTSLI
KQGVNNAEKFDYVMQFLNKMAGNEYVGFSNATFQSERESGDRNFAIGYYLKEKKCFPEGTDMVGILDYF
QLCSIEVTCEASVMAATLANGGFCPITGERVLSPEAVRNTLSLMHSCGMYDFSGQFAFHVGLPAKSGVA
GGILLVVPNVMGMCWSPPLDKMGNSVKGIFHCHDLVSLCNFHNNDNLRHFACKLDPRREGGDQRVKS
VILNLLFAAYTGDVSALRRFALSAMDMEQRDYDSRTALHVAAGHVEVVKFLLACKVNPFPKDRWNNTPM
D EALHFGHHDVFKILQEYQVQYTPQGSDDGKGNQTVHKNLDGLL

>XP_016017445.1 T-cell-specific surface glycoprotein CD28 isoform X2 [Rousettus aegyptiacus]

MLVYNNVAVNLSCKYTYNLSKEFRASLYKGADSAVEVCVVNGNYSHQLPFRSATGFNC DGKLGNETVTF
YLWNLYVNQTDIYFCKIEVMYPPPYIDNEKSNGTIIHVKENRLCPAHQFPDSSKPFWALVVVGGVLGFYS
LLVTIAFCVCWRKSKRNRLQSDYMNMRPRRPGPTRKLYQPYVPARDFAAYS

>XP_016017444.1 T-cell-specific surface glycoprotein CD28 isoform X1 [Rousettus aegyptiacus]

MILRLLALNFFPSIQVTENKILVKQSPMLVYNNVAVNLSCKYTYNLSKEFRASLYKGADSAVEVCVVN
GNYSHQLPFRSATGFNC DGKLGNETVTFYLWNLYVNQTDIYFCKIEVMYPPPYIDNEKSNGTIIHVKENR

LCPAHQFPDSSKPFWALVVVGGVLGFYSLLVTIAFCVCWRKSKRNRILQSDYMNMRPRRPGPTRKLYQPY
VPARDFAAAYRS

>XP_036012250.1 cytotoxic T-lymphocyte protein 4 isoform X1 [Mus musculus]
MTEVCATTFTEKNTVGFLDYPFCSGTFNESRVNLTIQGLRAVDGTGLYLCKVELMYPPPYFVGMNGTQIY
VIDPEPCPDSDFLWILVAVSLGLFFYSFLVTAVSLSKMLKKRSPLTTGVYVKMPPEPECEKQFQPYFI
PIN

>NP_001106854.1 glutaminase kidney isoform, mitochondrial isoform 2 [Mus
musculus]
MMRLRGSAMLRELLLRPPAAVGAVLRRQPLGTLCRRPRGGSRPAGLVAAARLHPWWGGGGRAKGPAG
GLSSSPSEILQELGKGGTPPQQQQQQQQPGASPPAAPGPKDSPGETDAFGNSEGKEMVAAGDNKIKQGL
LPSLEDLLFYTIAEGQEIPVHKFITALKSTGLRTSDPRLKECMDMLRLTLQTTS DGVMLDKDLFKKCVQ
SNIVLLTQAFRRKFVIPDFMSFTSHIDELYESAKKQSGGKVADYIPQLAKFSPDLWGVSVCTVDGQRHSI
GDTKVPFCLQSCVKPLKYAIAVNDLGTEYVHRYVGKEPSGLRFNKLFLNEDDKPHNPMVNAGAI VVTS LI
KQGVNNAEKFDYVMQFLNKMAGNEYVGFSNATFQSERESGDRNFAIGYYLKEKKCFEGTDMVGILDYF
QLCSIEVTCESASVMAATLANGGFCPITGERVLSPEAVRNTLSLMHSCGMYDFSGQFAFHVGLPAKSGVA
GGILLVVPNMGMWCSPPLDKMGNSVKGIHFCHDLVSLCNFHNVDNLRHFAKKLDPRREGGDQRHSFGP
LDYESLQELALKDVTWKKVSPESDDTSTTVVYRMESLGERS

>NP_001073911.1 putative sodium-coupled neutral amino acid transporter 8 [Homo
sapiens]
MEGQTPGSRGLPEKPHPATAAATLSSMGAVFILMKSALGAGLLNFPWAFSKAGGVVPAFLVELVSLVFLI
SGLVILGYAAAVSQATYQGVVRGLCGPAIGKLCEACFLNLLMISVAFLRVIGDQLEKLCDSLLSGTTP
APQPWYADQRFITPLLSVLVILPLSAPREIAFQKYTSILGTAAACYLALVITVQYYLWPQGLVRESHPSL
SPASWTSVFSVFPTICFGFQCHEAAVSIYCSMRKRSLSHWALVSVLSLLACCLISLTGVYGFITFGTEV
SADVLMSYPGNDMVIIIVARVLFAVSIVTVYPIVFLGRSVMQDFWRRSCLGGWGPSALADPSGLWVRMPL
TILWTVTLAMALFMPDLSEIVSIIGGISSFFIFIFPGLCLICAMGVEPIGPRVKCCLEVWGVVSVLVGT
FIFGQSTAAAVWEMF

>NP_001019520.2 tumor necrosis factor receptor superfamily member 18 precursor
[Rattus norvegicus]
MGAWAMLYGVSLICVLDLGQQSIAEPPSCGPGRVRNGTGTNTRCCSLCGPDKEDCPKGRICVKPEYHCE
DPQCKTCKHYPCQPGQRVESQGNIKFGFQCVDCA MGTF SAGREGHCRLWTNCSQFGFLTVPFGNKTHNAV
CIPEPLPTEQYGH LTVIFLVMAACILFLT TVQLGLHIWQLRRQHTCPRDTQPLLEVQLPPAEDACSFQFP
EEERGEQMEEKCRLGDRWP

>NP_001129662.1 lymphocyte transmembrane adapter 1 isoform b [Homo sapiens]
MRSHFLQWALATSRNKDQITNIFSGFAGLLAILLVAVFCILWNWNKRKKRQVPYLRVTVMPLLTLPQTR
QRAKNIYDILPWRQEDLGRHESRSMRIFSTESLLSRNSESPEHVPSQAGNAFQEHTAHIHATEYAVGIYD
NAMVPQMCGNLTPSAHCINVRASRDCA SISED SHDYVNVPTAE EIAETLASTKSPSRNLFVLPSTQKLE
FTEERDEGCGDAGDCTSLYSPGAEDSDSLN GEGSSQISNDYVNMTGLDLSAIQERQLWVAFQCCRDIEN
VPAADPSGSQQQA EKDVPSNIGHVEDKTDDPGTHVQC VKRTFLASGDYADFQPFTQSEDSQMKHREEMS
NEDSSDYENVL TAKLGGRDSEQGPGTQLLPDE

>NP_113862.1 cytotoxic T-lymphocyte protein 4 precursor [Rattus norvegicus]
MACLGLQRYKTHLQLPSRTWPFVLLSLLFIPIFSEAIQVTQPSVVLASSHGVASFPCEYASSHNTDEV
RVTVLRQTNDQVTEVCATTFVKNLTGLDDPFCSGTFNESRVNLTIQGLRAADTGLYFCKVELMYPPPYF

VGMGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFYSFLVTAVSLNRTLKKRSPLTTGVYVKMPPEPE
CEKQFQPYFIPIN

>NP_060243.2 lymphocyte transmembrane adapter 1 isoform a [Homo sapiens]
MDGVTPTLSTIRGRTLESSTLHVTPRSLDRNKDQITNIFSGFAGLLAILLVAVFCILWNWNKRKKRQVP
YLRVTVMPLLTLPQTRQRAKNIYDILPWRQEDLGRHESRSMRIFSTESLLSRNSESPEHVPSQAGNAFQE
HTAHIHATEYAVGIYDNAMVPQMCGNLTPSAHCINVRASRDCASISSEDSHDYVNVPTAEEIAETLASTK
SPSRNLFVLPSTQKLEFTEERDEGCGDAGDCTSLYSPGAEDSDSLNNEGSSQISNDYVNMTGLDLSAIQ
ERQLWVAFQCCRDYENVPAADPSGSQQAEDVPSSNIGHVEDKTDDPGTHVQCVKRTFLASGDYADFQP
FTQSEDSQMKHREEMSNESSDYENVLTAKLGGRDSEQGPGTQLLPDE

>XP_030181174.1 T-cell-specific surface glycoprotein CD28 isoform X3 [Lynx
canadensis]
MEENKILVKQLPRLVVYNNEVNLSCKYTHNLSKEFRASLYKGVDSAVEVCVVNGNYSHQPQFYSSTGFD
CDGKLGNETVTFYLRNLFVNQTDIYFCKIEVMYPPPYIDNEKSNGTIIHVKEKHLCPAQLSPESSKPFWA
LVVVGILGFYSLLATVALGACWMKTKRSRILQSDYMNMTPRRPGPTRRHYQPYAPARDFAAAYRS

>XP_030181173.1 T-cell-specific surface glycoprotein CD28 isoform X2 [Lynx
canadensis]
MILRLLLALNFFPSIQVTENKILVKQLPRLVVYNNEVNLSCKYTHNLSKEFRASLYKGVDSAVEVCVVN
GNYSHPQFYSSTGFDGKLGNETVTFYLRNLFVNQTDIYFCKIEVMYPPPYIDNEKSNGTIIHVKEKH
LCPAQLSPESSKPFWALVVVGILGFYSLLATVALGACWMKTKRSRILQSDYMNMTPRRPGPTRRHYQPY
APARDFAAAYRS

>XP_030181172.1 T-cell-specific surface glycoprotein CD28 isoform X1 [Lynx
canadensis]
MTETLRLWQVHLQLPSHFGLLGEGLPWPTVSTMILRLLLALNFFPSIQVTENKILVKQLPRLVVYNNE
VNLSCKYTHNLSKEFRASLYKGVDSAVEVCVVNGNYSHQPQFYSSTGFDGKLGNETVTFYLRNLFVN
QTDIYFCKIEVMYPPPYIDNEKSNGTIIHVKEKHLCPAQLSPESSKPFWALVVVGILGFYSLLATVALG
ACWMKTKRSRILQSDYMNMTPRRPGPTRRHYQPYAPARDFAAAYRS

>BCL01234.1 anti-human CTLA-4 single-chain Fv [synthetic construct]
MERGSHHHHHGSGSGSIEGRPYNGTGSEIVLTQSPGTLSPGERATLSCRASQSVGSSYLAWYQKQP
GQAPRLLIYGAFSRATGIPDRFSGSGSGTDFLTISRLEPEDFAVYYCQYGSSPWTFGQGTKVEIKEGK
SSGSGSESKSQVLVESGGGVVQPGSLRLSCAASGFTFSSYTMHWVRQAPGKGLEVTFISYDGNKYYA
DSVKGRFTISRDNKNTLYLQMNSLRAEDTAIYYCARTGWLGPFDYWGQGTLLTVVSSKLSLNQN

>NP_001038204.1 cytotoxic T-lymphocyte protein 4 precursor [Macaca mulatta]
MACLGFQRHKARLNLATRTRPYTLLFSLFIPVFSKAMHVAQPAVVLANSRGIAFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPY
MGIGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPEPE
CEKQFQPYFIPIN

>NP_001269807.1 lymphocyte transmembrane adapter 1 isoform c [Homo sapiens]
MPLLTLPQTRQRAKNIYDILPWRQEDLGRHESRSMRIFSTESLLSRNSESPEHVPSQAGNAFQEHTAHIH
ATEYAVGIYDNAMVPQMCGNLTPSAHCINVRASRDCASISSEDSHDYVNVPTAEEIAETLASTKSPSRNL
FVLPSTQKLEFTEERDEGCGDAGDCTSLYSPGAEDSDSLNNEGSSQISNDYVNMTGLDLSAIQERQLWV
AFQCCRDYENVPAADPSGSQQAEDVPSSNIGHVEDKTDDPGTHVQCVKRTFLASGDYADFQPFTQSED

SQMKHREEMSNEEDSSDYENVLTAKLGGRDSEQGPGTQLLPDE

>NP_001034238.1 CD226 antigen isoform b [Mus musculus]
MAYVTWLLAILHVHKDSFEIAAPSDSYLSAEPGQDVTLCQLPRTWPVQQVIWEKVQPHQVDILASCNLS
QETRYTSKYLRQTRSNCSSQSMKSILIIIPNAMAADSGLYRCRSEAITGKNKSFVIRLIITDGGTNKHFIL
PIVGGLVSLLLVILIIIIIFILYNRKRQRRIPLKEPRDKQSKVATNCRSPTSPIQSTDDEKEDIYVNYPTFSRRPKPRL

>NP_848802.2 CD226 antigen isoform a precursor [Mus musculus]
MAYVTWLLAILHVHKALCEETLWDTTVRLSETMTLECVYPLTHNLTQVEWTKNTGKTVSIAVYNPNHNM
HIESNYLHRVHFLNSTVGFRNMSLSFYNAEADIGIYSCLFHAFNGPWEEKIKVWSDSFEIAAPSDSY
LSAEPGQDVTLCQLPRTWPVQQVIWEKVQPHQVDILASCNLSQETRYTSKYLRQTRSNCSSQSMKSILI
IPNAMAADSGLYRCRSEAITGKNKSFVIRLIITDGGTNKHFILPIVGGLVSLLLVILIIIIIFILYNRKRRL
RQVRIPLKEPRDKQSKVATNCRSPTSPIQSTDDEKEDIYVNYPTFSRRPKPRL

>XP_009635783.1 T-cell-specific surface glycoprotein CD28 [Egretta garzetta]
MLLGILVLCFIPTADV TENKILVAQRPLLIVANKTATLV CNYTYNGTGKEFRASLHKGTDSAVEVCFIS
WNTTKFSSTSNKEFCNCQGIHDKDKVFNLWNMSASQTDIYFCKIEAMYPPPYVYNEKSNGTVIHVKETPI
QTQEPQSAIPLWIMVAVTGVLAFYSTLITAVFITYWQKSKKNVYHQSDYMNMTPRHPPYQKNKGYPYAP
TRDYTAYRSWQP

>XP_011510496.1 T-cell-specific surface glycoprotein CD28 isoform X1 [Homo sapiens]
MPCGLSALIMCPKGMVAVVVAVDDGDSQALAGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLH
KGLDSAVEVCVVYGNYSQQLQVYSKTGFNC DGKLGNESVT FYLQNLVYNQTDIYFCKIEVMYPPPYLDNE
KSNGTIIHVKGKHLCPSP LFPGPSKPFVWL VVVGVLACYSLLVTVAFIIFWVRSKRSRLLHSDYMNMT
RRPGPTRKHYQPYAPPRDFAAYRS

>sp|Q7TSA3.2|BTLA_MOUSE RecName: Full=B- and T-lymphocyte attenuator; AltName:
Full=B- and T-lymphocyte-associated protein; AltName: CD_antigen=CD272; Flags:
Precursor
MKTVPAMLGTPRLFREFFILHLGLWSILCEKATKRND EECPVQLTITRNSKQSARTGELFKIQCPVKYCV
HRPNVTWCKHNGTICVPLEVSPQLYTSWEENQSVPVFVLHFKPIHLSDN GSYSCSTNFNSQVINSHSVTI
HVRERTQNSSEHPLITVSDIPDATNASGPSTMEERPGR TWLLYTLLPLGALLLLACVCLLCFLKRIQ GK
EKKPSDLAGRDTNLVDIPASSRTNHQALPSGTGIYDNDPWSSMQDESELTISLQSERNNQGIVYASLNHC
VIGRNPRQENNMQEAPTEYASICVRS

>sp|Q9XSI1.1|CTLA4_CANLF RecName: Full=Cytotoxic T-lymphocyte protein 4;
AltName: Full=Cytotoxic T-lymphocyte-associated antigen 4; Short=CTLA-4;
AltName: CD_antigen=CD152; Flags: Precursor
MAGFGFRRHGVQPD LASRTWPCTALFSL LFIPVFSKGMHAAQPAVVLASSRGVASFVCEYGSSGNAAEVR
VTMLRQAGSQMTEVCAATYTVEDELAFLDDSTCTGTSSGNKVNLTIQGLRAMGTGLYICKVELMYPPPY
VGMGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFYSFLITAVSLSKMLKKRSPLTTGVVYVKMPPTGPE
CEKQFQPYFIPIN

>sp|P42072.1|CTLA4_RABIT RecName: Full=Cytotoxic T-lymphocyte protein 4;
AltName: Full=Cytotoxic T-lymphocyte-associated antigen 4; Short=CTLA-4;
AltName: CD_antigen=CD152; Flags: Precursor

MARLGFQRQGTQLDLASRTWSCAALFSLFLPVFSKALHVSQPAVVLASSRGVASFVCEYASSHKATEVR
VTVLRQANSQMTEVCAMTYTVENELTFIDDSCTGTGISHGNKVNLTIIQGLSAMDTGLYICKVELMYPPPY
VGMGNGTQIYVIEPEPCPDSDFLWILAAISSGLFFYSFLITAVSLSKMLKKRSPLTTGVYVKMPTEPE
CEKQFQPYFIPIN

>sp|P09793.1|CTLA4_MOUSE RecName: Full=Cytotoxic T-lymphocyte protein 4;
AltName: Full=Cytotoxic T-lymphocyte-associated antigen 4; Short=CTLA-4;
AltName: CD_antigen=CD152; Flags: Precursor
MACLGLRRYKAQLQLPSRTWPFVALLTLLFIPVFSEAIQVTQPSVVLASSHGVASFPCEYSPSHNTDEVR
VTVLRQTNDQMTEVCATTFTTEKNTVGFLDYPFCSGTFNESRVNLTIIQGLRAVDGTGLYLCKVELMYPPPY
VGMGNGTQIYVIDPEPCPDSDFLWILVAVSLGLFFYSFLVSAVSLSKMLKKRSPLTTGVYVKMPTEPE
CEKQFQPYFIPIN

>QNC41475.1 Sequence 3 from patent US 10654928
MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVY
NYSQQLQVYSKTFNC DGKLGNE SVTFYLQNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHL
CPSPLFPGPSKPFVWL VVVGGVLACYSLLVTVAFIIFWVRSKRSRLHSDYMNMTPRRPGPTRKHYQPYA
PPRDFAAYRS

>QNB54249.1 Sequence 30 from patent US 10633441
MACLGFQRHKAQLNLATRTWPCTLLFLLFIPVFCKAMHVAQPAVVLASSRGIASFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLLDSICTGTSSGNQVNLTIIQGLRAMDTGLYICKVELMYPPPY
LGIGNGTQIYVIDPEPCPDSDFLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPTEPE
CEKQFQPYFIPIN

>QNB54244.1 Sequence 23 from patent US 10633441
MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVY
NYSQQLQVYSKTFNC DGKLGNE SVTFYLQNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHL
CPSPLFPGPSKPFVWL VVVGGVLACYSLLVTVAFIIFWVRSKRSRLHSDYMNMTPRRPGPTRKHYQPYA
PPRDFAAYRS

>QNB52443.1 Sequence 277 from patent US 10633426
MACLGFQRHKAQLNLATRTWPCTLLFLLFIPVFCKAMHVAQPAVVLASSRGIASFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLLDSICTGTSSGNQVNLTIIQGLRAMDTGLYICKVELMYPPPY
LGIGNGTQIYVIDPEPCPDSDFLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPTEPE
CEKQFQPYFIPIN

>QNB52438.1 Sequence 270 from patent US 10633426
MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVY
NYSQQLQVYSKTFNC DGKLGNE SVTFYLQNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHL
CPSPLFPGPSKPFVWL VVVGGVLACYSLLVTVAFIIFWVRSKRSRLHSDYMNMTPRRPGPTRKHYQPYA
PPRDFAAYRS

>QMY23864.1 Sequence 1 from patent US 10603380
MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVY
NYSQQLQVYSKTFNC DGKLGNE SVTFYLQNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHL
CPSPLFPGPSKPFVWL VVVGGVLACYSLLVTVAFIIFWVRSKRSRLHSDYMNMTPRRPGPTRKHYQPYA
PPRDFAAYRS

>QMY23273.1 Sequence 153 from patent US 10603358

MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVYG
NYSQQLQVYSKTFNCDGKLGNESTFYLNLYVNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHL
CPSPLFPGPSKPFVVLVVVGGVLACYSLLVTVAFIIFWVRSKRSRLLHSDYMNMTPRRPGPTRKHYPYA
PPRDFAAYRS

>QMY23174.1 Sequence 54 from patent US 10603358

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRGIAFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPY
LGIGNGTQIYVIDPEPCPDSDFLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPTEPE
CEKQFQPYFIPIN

>QMX96762.1 Sequence 60 from patent US 10590182

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRGIAFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPY
LGIGNGTQIYVIDPEPCPDSDFLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPTEPE
CEKQFQPYFIPIN

>XP_025297780.1 T-cell-specific surface glycoprotein CD28 isoform X2 [Canis lupus dingo]

MILRLLLALNFFPSIQVTENKILVKQLPRLVVYNNEVNLSCKYTYNLFSSKEFRASLYKGVDSAVEVCVVN
GNYSHQPQFYSSSTGFDCDGKLGNETVTFYLRNLVFNQTDIYFCKIEVMYPPPYIGNEKSNGTIIHVKEKH
LCPDELFPDSSKPFWALVVVGAVLVFYSLVTVALCAYWIKSKSSRILQSDYMNMTPRRPGPTRRHYQPY
APARDFAAYRS

>NP_001244148.1 T-cell-specific surface glycoprotein CD28 precursor [Callithrix jacchus]

MLRLLLVNLNLFPSIQATGIKILVKQSPMLEAYDNTVNLTKYSCNLFSSRQFQASLHKGVDSAVEVCAVHG
NYSQQLQVHSATGFNCDGKLGNESTFYLNLYVNQTDIYFCKIEIMYPPPYLDSEKSNGTIIHVKGKHL
CPGPSFSGSPQPFWALAVVGGVLASYLLVTVALSVFWMRSRRSRLHSDYMNMTPRCPGPTRRHYQPYA
PPRDFAAYRS

>pdb|6RQM|A Chain A, Cytotoxic T-lymphocyte protein 4

AMHVAQPAVVLASSRGIAFVCEYASPGKATEVRVTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGT
SSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYLGIGNGTQIYVIDPEPCPDSD

>pdb|6RQM|B Chain B, A blocking anti-CTLA-4 nanobody (KN044)

QVQLVESGGGLVQPGGSLRLSCAASGYIYSAYCMGWFRQAPGKGLEGVAAIYIGGGSTYYADSVKGRFTI
SRDNSKNTLYLQMNSLRAEDTAVYYCAADVPTETCLGGSWSGPFQYWGQGTQVTVSSGSDPGGSHHHH
HHHH

>pdb|6RPJ|H Chain H, A non-blocking CTLA-4 nanobody

QVQLQESGGGSVQAGGSLTLSCAASGYANSNTCMGWFRQAPGKERERVA AISGVGTGTYADSVKGRFTI
SRDNGKNTLFLQMNSLKPEDTAMYYCAAPEGRAWCSDPSGYNWYWGQGTQVTVSSGSDPGGSHHHHHH
HH

>pdb|6RPJ|G Chain G, Cytotoxic T-lymphocyte protein 4

AMHVAQPAVVLASSRGIASFVCEYASPGKATEVRVTVLRLQADSQVTEVCAATYMMGNELTFLDDSICTGT
SSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYLIGIGNGTQIYVIDPEPGGSHHHHHH

>pdb|6RPJ|F Chain F, A non-blocking CTLA-4 nanobody
QVQLQESGGGSVQAGGSLTSLCAASGYANSNTCMGWFRQAPGKERERVA AISGVGTGTYADSVKGRFTI
SRDNGKNTLFLQMNSLKPEDTAMYYCAAPEGRAWCSRDP SGYNYWGQGTQVTVSSGMDPGGSHHHHHH
HH

>pdb|6RPJ|E Chain E, Cytotoxic T-lymphocyte protein 4
AMHVAQPAVVLASSRGIASFVCEYASPGKATEVRVTVLRLQADSQVTEVCAATYMMGNELTFLDDSICTGT
SSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYLIGIGNGTQIYVIDPEPGGSHHHHHH

>pdb|6RPJ|D Chain D, A non-blocking CTLA-4 nanobody
QVQLQESGGGSVQAGGSLTSLCAASGYANSNTCMGWFRQAPGKERERVA AISGVGTGTYADSVKGRFTI
SRDNGKNTLFLQMNSLKPEDTAMYYCAAPEGRAWCSRDP SGYNYWGQGTQVTVSSGMDPGGSHHHHHH
HH

>pdb|6RPJ|C Chain C, Cytotoxic T-lymphocyte protein 4
AMHVAQPAVVLASSRGIASFVCEYASPGKATEVRVTVLRLQADSQVTEVCAATYMMGNELTFLDDSICTGT
SSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYLIGIGNGTQIYVIDPEPGGSHHHHHH

>pdb|6RPJ|B Chain B, A non-blocking CTLA-4 nanobody
QVQLQESGGGSVQAGGSLTSLCAASGYANSNTCMGWFRQAPGKERERVA AISGVGTGTYADSVKGRFTI
SRDNGKNTLFLQMNSLKPEDTAMYYCAAPEGRAWCSRDP SGYNYWGQGTQVTVSSGMDPGGSHHHHHH
HH

>pdb|6RPJ|A Chain A, Cytotoxic T-lymphocyte protein 4
AMHVAQPAVVLASSRGIASFVCEYASPGKATEVRVTVLRLQADSQVTEVCAATYMMGNELTFLDDSICTGT
SSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYLIGIGNGTQIYVIDPEPGGSHHHHHH

>pdb|6RP8|CC Chain c, Cytotoxic T-lymphocyte protein 4
AMHVAQPAVVLASSRGIASFVCEYASPGKATEVRVTVLRLQADSQVTEVCAATYMMGNELTFLDDSICTGT
SSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYLIGIGNGTQIYVIDP

>pdb|6RP8|C Chain C, Cytotoxic T-lymphocyte protein 4
AMHVAQPAVVLASSRGIASFVCEYASPGKATEVRVTVLRLQADSQVTEVCAATYMMGNELTFLDDSICTGT
SSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYLIGIGNGTQIYVIDP

>pdb|6RP8|L Chain L, Antibody Ipilimumab light chain
EIVLTQSPGTLSPGERATLSCRASQSVGSSYLAWYQQKPGQAPRLLIYGAFSRATGIPDRFSGSGSGT
DFTLTISRLEPEDFAVYYCQYQGSSPWFQGGTKVEIKRTVAAPSVFIFPPSDEQLKSGTASVVCLLNFF
YPREAKVQWKVDNALQSGNSQESVTEQDSKDYSLSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSF
NRGEC

>pdb|6RP8|H Chain H, Antibody Ipilimumab heavy chain
QVQLVESGGGVVQPGRSLRLSCAASGFTFSSYTMHWVRQAPGKGLEWVTFISYDGNKYYADSVKGRFTI
SRDNSKNTLYLQMNSLRAEDTAIYYCARTGWLGPFDYWGGTTLTVSSASTKGPSVFPLAPSSKSTSGGT
AALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNT

KVDKRVEPKSCDKTH

>pdb|6RP8|LL Chain l, Antibody Ipilimumab light chain

EIVLTQSPGTLSSLSPGERATLSCRASQSVGSSYLAWYQQKPGQAPRLLIYGAFSRATGIPDRFSGSGSGT
DFTLTISRLEPEDFAVYYCQQYGSSPWTFGQGTKVEIKRTVAAPSVFIFPPSDEQLKSGTASVVCLLNNF
YPREAKVQWKVDNALQSGNSQESVTEQDSKSTYLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSF
NRGEC

>pdb|6RP8|HH Chain h, Antibody Ipilimumab heavy chain

QVQLVESGGGVVQPGRSLRLSCAASGFTFSSYTMHWVRQAPGKGLEWVTFISYDGNNKYYADSVKGRFTI
SRDNSKNTLYLQMNSLRAEDTAIYYCARTGWLGPFDYWGQGTLLTVSSASTKGPSVFPLAPSSKSTSGGT
AALGCLVKDYFPEPVTWNSGALTSGVHTFPAVLQSSGLYSLSVVTVPSSSLGTQTYICNVNHKPSNT
KVDKRVEPKSCDKTH

>XP_007610153.1 cytotoxic T-lymphocyte protein 4 isoform X2 [*Cricetulus griseus*]

MAGLGVQRCRAQLQLASRTWPFEALLAFLFIPTFSKAIHVAQPSVVLASSHGVASFSCEYTSSHNTDEVR
VTVLRQTNSQMTEVCATTFTMKNKLGFLDDPFCSGTFNESKVNLTIIQGLRAADTGLYFCKVELMYPPPYF
VGMGNGTQIYVIVKEKKSTYNRGLCENAPDRARM

>XP_003497464.1 cytotoxic T-lymphocyte protein 4 isoform X1 [*Cricetulus griseus*]

MAGLGVQRCRAQLQLASRTWPFEALLAFLFIPTFSKAIHVAQPSVVLASSHGVASFSCEYTSSHNTDEVR
VTVLRQTNSQMTEVCATTFTMKNKLGFLDDPFCSGTFNESKVNLTIIQGLRAADTGLYFCKVELMYPPPYF
VGMGNGTQIYVIEPEPCPDSDVLLWILASVSSGLFFYSFLITAVLSKMLKKRSPLTTGVYVKMPPEPE
CEKQFQPYFIPIN

>XP_008997376.1 T-cell-specific surface glycoprotein CD28 isoform X3 [*Callithrix jacchus*]

MPCGLSPLIMCPKRMVAVVVAVDDGDCQALAGIKILVKQSPMLEAYDNTVNLTCKYSCNLF SRQFQASLH
KGVDSAVEVCAVHGNYSQLLQVHSATGFNCDGKLGNESVTFYLNLYVNQTDIYFCKIEIMYPPPYLDSE
KSNGTIIHVKGKHLCPGPSFSGSPQPFWALAVVGGVLASYSLLVTVALSVFWMRSRRSRLHSDYMNMT
PCPGPTRRHYQPYAPPRDFAAYRS

>NP_001179946.1 tyrosine-protein kinase ZAP-70 [*Bos taurus*]

MPDPA AHL PFFYGSISR AEAEHLKLAGMADGLFLLRQCLRSLGGYVLSLVHEVRFHHFPIERQLNGTYA
IAGGKAHC GPAELCEFYSRDPDGLPCNLRKPCNRPSGLEPQPGVFDNLRDAMVRDYVRQTWKLEGEALEQ
AIISQAPQVEKLIATT AHERMPWYHSSLTREEAERKLYSGSQTDGKFLLRPRKEPGTYALS LIYGKTVYH
YLISQDKAGKYCIPEGTKFDTLWQLVEYLK LKADGLIYCLKEACPNSSASSGAAAPTLP AHPSTFTQ PQR
RIDTLNSDGYTPEPARLV SSEKPRTPMDTSVYESPYSDPEELKNKKLFLKRENLLMADIELGCGNFGSV
RQGVYRMRKKQIDVAIKVLKQSTEKADKDEMMREAIHQLDNPYIVRLIGVCQAEALMLVMEMAGGGPL
HKFLVGKKEEIPVSNVAELLHQVSMGMKYLEEKNFVHRDLAARNVLLVNRHYAKISDFGLSKALGADDSY
YTARSAGKWPLKWAPECINFRKFSSRS DVWSYGVTMWEAFSYGQKPYKKMKGPEVMAFIEQKRM ECPP
ECPPEMYKLMSDCWTYKWEDRPDFAAVEQRMRTY YSLATKAEEPAACGNGVEAACP

>NP_001274262.1 T-cell-specific surface glycoprotein CD28 precursor [*Macaca fascicularis*]

MLRLLLALNLLPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVYG
NYSQQLQVYSKTGFNCDGKLGNESVTFYLNLYVNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHL
CPSPLFPGPSKPFWALVVVGGVLACYSLLVTVAFCIFWMRSKRSRLHSDYMNMTPRRPGPTRKHYQPYA

PPRDFAAAYRS

>NP_990415.1 ICOS ligand precursor [Gallus gallus]

MKRLGYGFLLFLHILRAVTALEKIISKPGDNATLSCTIYANRGFDLDSL RVYQIDGVEGSKSCSVVHAL
ISGQDNESQQCSQFKNRTQLLWDKLGDFSLLLYNVRQSDEHTYKCVVMQTIEYTRVIHQEQVVL SLAA
SYSQPILSGPIRNSYSTGEEVTFSCRSDNGYPEPNVYWINRTDNTRL SQSDFNITQHPDGTYSVLSTLKV
NATSDMQLECFIENKVLQENTSANYTEEMQNNGSSTGSHKDAAKGGGGAQAAAVSVVILMAFLT VLICW
LWRRRSFQLVSYTAPV

>SZF06895.1 unnamed protein product [Homo sapiens]

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRG IASFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLT IQGLRAMDTGLYICKVELMYPPPPY
LGIGNGTQIYVIAKEKKPSYNRGLCENAPNRARM

>SZF06866.1 unnamed protein product [Homo sapiens]

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRG IASFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLT IQGLRAMDTGLYICKVELMYPPPPY
LGIGNGTQIYVIAKEKKPSYNRGLCENAPNRARM

>NP_001107830.1 programmed cell death protein 1 [Macaca mulatta]

MQIPQAPWPVVAVLQLGWRPGWFLESPDRPWNPPFTSPALLLVTEGD NATFTCSFSNASESFVLNWYRM
SPSNQTDKLAAPFEDRSQPGRDCRFRVTQLPNGRDFHMSVVRARRNDSGTYLCGAISLAPKAQIKESLRA
ELRVTERRAEVPTAHPSPSPRAGQFQALVGVVGGLLGSLVLLVWVLAVICSRAAQGTIEARRTGQPLK
EDPSAVPVFSDY GELDFQWREKTPEPPAPCVPEQTEYATIVFPSGLGTSSPARRGSADGPRSPRPLRPE
DGHCSWPL

>NP_001076154.1 cytotoxic T-lymphocyte protein 4 precursor [Oryctolagus cuniculus]

MARLGFQRQGTQLDLASRTWSCAALFSLFLPVFSKALHVSQPAVVLASSRG VASFVCEYASSHKATEVR
VTVLRQANSQMTEVCAMTYTVENELTFIDDSCTGTGISHGNKVNLT IQGLSAMD TGLYICKVELMYPPPPY
VGMGNGTQIYVIEPEPCPDSDFLWILAAISSGLFFYSFLITAVSL SKMLKKRSPLTTGVYVKMPPEPE
CEKQFQPYFIPIN

>NP_001003087.2 T-cell-specific surface glycoprotein CD28 precursor [Canis lupus familiaris]

MILRLLLALNFFPSIQVTENKILVKQLPRLVVYNNEVNL SCKYTYNLF SKEFRASLYKGVDSAVEVCVVN
GNYSHQPQFYSSSTGFDCDGKLGNETVTFYLRNL FVNQTDIYFCKIEVMYPPPYIGNEKSNGTIIHVKEKH
LCPDELFPDSSKPFWALVVVGAVLVFYSLLV TVALCAYWIKSKSSRILQSDYMNMTPRRPGPTRRHYQPY
APARDFAAAYRS

>NP_001106104.1 cytotoxic T-lymphocyte protein 4 precursor [Papio anubis]

MACLGFQRHKAQLNLATRTPYTLLFSLFIPVFCKAMHVAQPAVVLANSRG IASFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLT IQGLRAMDTGLYICKVELMYPPPPY
MGIGNGTQIYVIDPEPCPDSDFLWILAAVSSGLFFYSFLLTAVSL SKMLKKRSPLTTGVYVKMPPEPE
CEKQFQPYFIPIN

>NP_001106119.1 T-cell-specific surface glycoprotein CD28 precursor [Papio anubis]

MLRLLLALNLLPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVYG
NYSQQLQVYSKTFGNCGGKLGDESVTFYLQNMVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHL
CPSPLFPGPSKPFWALVVVGVLACYSLLVTVAFSIFCMRSKRSRLLHSDYMNMTPRRPGPTRKHYQPYA
PPRDFAAAYRS

>NP_001093649.1 T-cell-specific surface glycoprotein CD28 [Equus caballus]
MLRLLLALNFFPSIQVTENKILVKQSPMLVVHNAVNLSCKYTYNLSKEFRASLYKGADSAVEVCVVNG
NHSHQLQFHSNTGFNCDGKLGNETVTFYLNLYVNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKEKHL
CPVHPFTESSTPFWALAVTGGVLAIFYSLVTVALCTCWMNRNRSRTLQSDYMNMTPRRPGPTRKHYQPYA
PARDFAAAYRS

>NP_001075676.1 T-cell-specific surface glycoprotein CD28 precursor [Oryctolagus
cuniculus]
MILRLLAFNFFPSIQGTENKILVKQSPMLVVNNNEVNLSCKYTYNLSKEFRASLYKGADSAVEVCVVN
GNFSPHQFHSTGFNCDGKLGNETVTFYLNLYVNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKEQH
FCPAHPSPKSSTLFWVLVVVGAVLAFYSMLVTVALFSCWMKSKNRLLQSDYMNMTPRRPGPTRKHYQPY
APARDFAAAYRS

>NP_001009441.1 T-cell-specific surface glycoprotein CD28 precursor [Ovis aries]
MLRLLLALNFFPSIQVAENKILVKQSPMLVVNDNEVNLSCKYTYNLSKEFRASLYKGADSAVEVCAVNG
NHSHPLQSTNKEFNCTVKVGNETVTFYLDLYVNQTDIYFCKLEVLYPPPYLDNEKSNGTIIHVKEKHL
PSPQSPESKPFWALVVVNGVLVFYSLLVTVALCNCWMKSKNRNMHQSDYMNMTPRRPGPTRRHYQPYAP
TRDFAAAYRS

>NP_001009236.1 cytotoxic T-lymphocyte protein 4 [Felis catus]
MACFGFRRHGAQLDLASRTWPCTALFSLFIPVFSKGMHVAQPAVVLASSRGVASFVCEYGSSGNAAEVR
VTVLRQTGSQMTEVCAATYTVENELAFDDSTCTGISSGNKVNLTIQGLRAMDTGLYICKVELMYPPPY
AGMGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFYSFLITAVSLSKMLKKRSPLTTGVYVKMPTEPE
CEKQFQPYFIPIN

>NP_001003106.1 cytotoxic T-lymphocyte protein 4 [Canis lupus familiaris]
MAGFGFRRHGAQPDLASRTWPCTALFSLFIPVFSKGMHVAQPAVVLASSRGVASFVCEYGSSGNAAEVR
VTVLRQAGSQMTEVCAATYTVDELAFDDSTCTGTSSGNKVNLTIQGLRAMDTGLYICKVELMYPPPY
VGMGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFYSFLITAVSLSKMLKKRSPLTTGVYVKMPTEPE
CEKQFQPYFIPIN

>NP_776722.1 cytotoxic T-lymphocyte protein 4 precursor [Bos taurus]
MACSGFQSHGTWTSRTWPCTALFLLVFIPVFSKGMNVTQPPVVLASSRGVASFSCEYESSGKADEVRT
VLREAGSQVTEVCAGTYMVEDELTFDDSTCIGTSRGKNVNLTIQGLRAMDTGLYVCKVELMYPPPYVG
IGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFYSFLITAVSLSKMLKKRSPLTTGVYVKMPTEPECE
KQFQPYFIPIN

>NP_001036106.2 T-cell-specific surface glycoprotein CD28 precursor [Macaca
mulatta]
MLRLLLALNLLPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVYG
NYSQQLQVYSKTFGNCGKLGNESVTFYLNLYVNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHL
CPSPLFPGPSKPFWALVVVGVLACYSLLVTVAFCIFWMRSKRSRLLHSDYMNMTPRRPGPTRKHYQPYA
PPRDFAAAYRS

>NP_001009214.1 cytotoxic T-lymphocyte protein 4 precursor [Ovis aries]
MACSGFQSHGTWRTSRTWPCTALFFLLFIPVFSKGMNVTQPPVVLASSRGVASFTCEYESSGKADEVVRT
VLRKAGIQVTEVCAGTYMVEDELTFLLDDSSCIGTSRGKNVNLTIQGLRAMDTGLYVCKVELMYPPPYMG
EGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFYSFLITAVSLSKMLKKRSPLTTGVYVKMPPEPECE
KQFQPYFIPIN

>NP_001276638.1 endophilin-B2 isoform 1 [Mus musculus]
MDFNMKKLASDAGIFFTRAVQFTEEFKFGQAEKTELDHFENLLARADSTKNWTERILRQTEVLLQPNPSA
RVEEFLYEKLDRKVPSRVNTGELLAQYMAEAAASELGPSTPYGKTLIKVSEAEKRLGAAERDFIHTASLSF
LTPLRNFLEGDWKTISKERRLLQNRRLDLDAKARLKKAKAAEAKATTVPDFQETRPRNYILSASASALW
NDEVDAEQELRVAQTEFDRQAEVTRLLLEGISSTHVNLRLCLHEFVKSQTTYAAQCYRHMLDLQKQLGS
SQGAIFPGTFVGTTEPASPLSSTSPTTTAATMPVVPTGAVLAPPEEAALCLEEVAPPASGTRKARVLYD
YEAADSSSELALLADELITVYSLPGMDPDWLIGERGNKKGKVPVTTYLELLS

>NP_001276639.1 endophilin-B2 isoform 3 [Mus musculus]
MDFNMKKLASDAGIFFTRAVQFTEEFKFGQAEKTELDHFENLLARADSTKNWTERILRQTEVLLQPNPSA
RVEEFLYEKLDRKVPSRVNTGELLAQYMAEAAASELGPSTPYGKTLIKVSEAEKRLGAAERDFIHTASLSF
LTPLRNFLEGDWKTISKERRLLQNRRLDLDAKARLKKAKAAEAKATLWDEVDAEQELRVAQTEFDRQ
AEVTRLLLEGISSTHVNLRLCLHEFVKSQTTYAAQCYRHMLDLQKQLGRFPGTFVGTTEPASPLSSTSP
TTTAATMPVVPTGAVLAPPEEAALCLEEVAPPASGTRKARVLYDYEAADSSSELALLADELITVYSLPGMD
PDWLIGERGNKKGKVPVTTYLELLS

>NP_001032808.2 B- and T-lymphocyte attenuator isoform 1 precursor [Mus musculus]
MKTVPAMLGTPRFLFREFFILHLGLWSILCEKATKRNDDEECPVQLTITRNSKQSARTGELFKIQCPVKYCV
HRPNVTWCKHNGTICVPLEVSPQLYTSWEENQSVPVFVLHFKPIHLSDNQSYSCSTNFNSQVINSHSVTI
HVTERTQNSSEHPLITVSDIPDATNASGPSTMEERPGRTWLLYTLLPLGALLLLACVCLLCFLKRIQKG
EKKPSDLAGRDTNLVDIPASSRTNHQALPSGTGIYDNDPWSSMQDESELTISLQSERNNQGIVYASLNHC
VIGRNPRQENNMQEAPTEYASICVRS

>NP_808252.1 B- and T-lymphocyte attenuator isoform 2 precursor [Mus musculus]
MKTVPAMLGTPRFLFREFFILHLGLWSILCEKATKRNDDEECPVQLTITRNSKQSARTGELFKIQCPVKYCV
HRPNVTWCKHNGTICVPLEVSPQLYTSWEENQSVPVFVLHFKPIHLSDNQSYSCSTNFNSQVINSHSVTI
HVTERTQNSSEHPLIISDIPDATNASGPSTMEERPGRTWLLYTLLPLGALLLLACVCLLCFLKRIQKGE
KKPSDLAGRDTNLVDIPASSRTNHQALPSGTGIYDNDPWSSMQDESELTISLQSERNNQGIVYASLNHC
IGRNPRQENNMQEAPTEYASICVRS

>NP_647463.1 endophilin-B2 isoform 2 [Mus musculus]
MDFNMKKLASDAGIFFTRAVQFTEEFKFGQAEKTELDHFENLLARADSTKNWTERILRQTEVLLQPNPSA
RVEEFLYEKLDRKVPSRVNTGELLAQYMAEAAASELGPSTPYGKTLIKVSEAEKRLGAAERDFIHTASLSF
LTPLRNFLEGDWKTISKERRLLQNRRLDLDAKARLKKAKAAEAKATTVPDFQETRPRNYILSASASALW
NDEVDAEQELRVAQTEFDRQAEVTRLLLEGISSTHVNLRLCLHEFVKSQTTYAAQCYRHMLDLQKQLGR
FPGTFVGTTEPASPLSSTSPTTTAATMPVVPTGAVLAPPEEAALCLEEVAPPASGTRKARVLYDYEAAD
SSELALLADELITVYSLPGMDPDWLIGERGNKKGKVPVTTYLELLS

>QKP04063.1 Sequence 4 from patent US 10556969
MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVYVG

NYSQQLQVYSKTFNC DGKLGNESVTFYLQNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHL
CPSPLFPGPSKPFVWL VVVGGVLACYSLLVTVAFIIFWVR SKRSRLHSDYMNMTPRRPGPTRKHYQPYA
PPRDFAA YRS

>QKP04030.1 Sequence 149 from patent US 10556968

MACLGFQRHKAQLNLATRTWPCTLLFLLFIPVFCKAMHVAQPAVVLASSRG IASFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLT IQGLRAMDTGLYICKVELMYPPPY
LGIGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPE
CEKQFQPYFIPIN

>QK084647.1 Sequence 197 from patent US 10544222

MACLGFQRHKAQLNLATRTWPCTLLFLLFIPVFCKAMHVAQPAVVLASSRG IASFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLT IQGLRAMDTGLYICKVELMYPPPY
LGIGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPE
CEKQFQPYFIPIN

>QK044421.1 Sequence 30 from patent US 10538588

MACLGFQRHKAQLNLATRTWPCTLLFLLFIPVFCKAMHVAQPAVVLASSRG IASFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLT IQGLRAMDTGLYICKVELMYPPPY
LGIGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPE
CEKQFQPYFIPIN

>QK044416.1 Sequence 23 from patent US 10538588

MLRLLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVY
G
NYSQQLQVYSKTFNC DGKLGNESVTFYLQNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHL
CPSPLFPGPSKPFVWL VVVGGVLACYSLLVTVAFIIFWVR SKRSRLHSDYMNMTPRRPGPTRKHYQPYA
PPRDFAA YRS

>XP_008972477.1 cytotoxic T-lymphocyte protein 4 isoform X2 [Pan paniscus]

MACLGFQRHKAQLNLATRTWPCTLLFLLFIPVFCKAMHVAQPAVVLASSRG IASFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLT IQGLRAMDTGLYICKVELMYPPPY
LGIGNGTQIYVIAKEKKPSYNRGLCENAPNRARM

>XP_003820827.1 cytotoxic T-lymphocyte protein 4 isoform X1 [Pan paniscus]

MACLGFQRHKAQLNLATRTWPCTLLFLLFIPVFCKAMHVAQPAVVLASSRG IASFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLT IQGLRAMDTGLYICKVELMYPPPY
LGIGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPE
CEKQFQPYFIPIN

>XP_003820826.1 T-cell-specific surface glycoprotein CD28 isoform X1 [Pan paniscus]

MPCGLSALIMCPKGMVAVVVAVDDGDSQALAGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLH
KGLDSAVEVCVVYGNYSQQLQVYSKTFNC DGKLGNESVTFYLQNLVYNQTDIYFCKIEVMYPPPYLDNE
KSGTIIHVKGKHL CPSPLFPGPSKPFVWL VVVGGVLACYSLLVTVAFIIFWVR SKRSRLHSDYMNMT
PRRPGPTRKHYQPYAPPRDFAA YRS

>XP_003820825.1 T-cell-specific surface glycoprotein CD28 isoform X2 [Pan paniscus]

MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVYGY
NYSQQQLQVYSKTFGNC DGKLG NESVTFYLQNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHL
CPSPLFPGPSKPFVWL VVVGGVLACYSLLVTVAFIIFWVRSKRSRLHSDYMNMTPRRPGPTRKHYQPYA
PPRDFAAAYRS

>XP_002919995.2 T-cell-specific surface glycoprotein CD28 [Ailuropoda
melanoleuca]
MTETLGLWQVHLQFPSHFGLLREEGLEPWPTISTMILRLLLALNFFPSIQVTENKILVKQLPRLVVYDNE
VNLSCKYTHNLF SKEFRASLYKGVD SAEV CVVNG NYSHQPQFYSSTGFDCDGKMGNETVTFYLRKLFVN
QTDIYFCKIEVMYPPPYIDNEKSNGTIIHVKEKHHCPAQSPES SKPFWALVVVGGVLVFYSLLVTVALC
ACWMKNKRSRLQSDYMNMTPRRPGPTRRHYQPYAPTRDFAAYRS

>XP_004315141.1 T-cell-specific surface glycoprotein CD28 [Tursiops truncatus]
MCPERSKSVVVAADDES GC SGASPAHLTLG LLREEGRKPWPTVSTMILSLLLALNFFPSIQVAENKILVN
QSPMLVVNNNEVNLSCKYTYNLF SKEFRASLYKGVD SAEV CAVNGNH SKSLQSTNKEFNCTVNLGNETV
TFYLQDLVYNQTDIYFCKIEVLYPPPYIDNEKSNGTIIHVKEKHLCPAPRSPES SKPFWALVVVNGVLAF
YSLLATVALSNCWMKSKRNRMLQSDYMNMTPRRPGPTRKHYQPYAPARDFAAYRS

>XP_015490581.1 T-cell-specific surface glycoprotein CD28 [Parus major]
MLLGILVVLCFIPTADV TENKILVAQHPLLIVANQTATLVCNYTYNGTGKEFRASLHKGTDSSVEVCFIS
WNTTKISSNSNKEFNCQGYHDKDKVIFSLWNMNANQTDIYFCKIEVMYPPPYVYNEKSNGTVIHVKETPT
QIQEPQSAIPLWILATVTGILALYSMLITAVFINYWQKFKNMYHQSDYMNMI PRHPPYQKNKGYP SYAP
TRDYTAYRSWQP

>XP_004262874.1 T-cell-specific surface glycoprotein CD28 [Orcinus orca]
MCPERSKSVVVAADDES GC SGASPAHLTLG LLREEGRKPWPTVSTMILSLLLALNFFPSIQVAENKILVN
QSPMLVVNNNEVNLSCKYTYNLF SKEFRASLYKGVD SAEV CAVNGNH SKSLQSTNKEFNCTVNLGNETV
TFYLQDLVYNQTDIYFCKIEVLYPPPYIDNEKSNGTIIHVKEKHLCPAPRSPES SKPFWALVVVNGVLAF
YSLLATVALSNCWMKSKRNRMLQSDYMNMTPRRPGPTRKHYQPYAPARDFAAYRS

>NP_001292880.1 T-cell-specific surface glycoprotein CD28 precursor [Cercopithecus
atys]
MLRLLLALNLLPSIRVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVYGY
NYSQQQLQVYPKTGFNC DGKLG NESVTFYLQNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHL
CPSPLFPGPSKPFWAL VVVGGVLACYSLLVTVAFRIFWVRSKRSRLHSDYMNMTPRRPGPTRKHYQPYA
PPRDFAAAYRS

>QIS88967.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETS IKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVD MVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWD AIRFRYCAPPGYALLRCDNTNYS GFMPKCSKVVS SCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAI KEVKQTVIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTS LIANIDWINGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLT LTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLR LTVWG TKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVD FLEENITALLEEAQIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG

VILLRIVIIYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGGKGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTETLYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88966.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88965.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88964.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIIKPCVKPLPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDFFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVIIYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGGEGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTETLYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88963.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88962.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88961.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDFFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVIIYIVQMLTKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGGEGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTETLYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88960.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88959.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA

>QIS88958.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVPVPTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGSSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88957.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88956.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA

>QIS88955.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVPVPTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88954.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88953.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88952.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLFLEENITALLEEAIQKEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88951.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88950.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88949.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGICCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWDNETWQEWERKVDLFLEENITALLEEAIQKEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88948.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88947.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88946.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88945.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKDCRCLGEGHGAGGWRPGPPPPPPGLA

>QIS88944.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNVTVEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAVRFYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLAP
KNNNETWQEWERKVDLFLEENITALLEEAIQEQKNMYELQKLSNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRIRQGLELTLL

>QIS88943.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88942.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCCLGEGHGAGGWRPGPPPPPPGLA

>QIS88941.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88940.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCCLGEGHGAGGWRPGPPPPPPGLA

>QIS88939.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KNNNETWQEWERKVDLFLEENITALLEEAIQEQKNMYELQKLSNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS

ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88938.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88937.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88936.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88935.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88934.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALN
VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVFLEENITALLEEAQIQEKNMYELQKLSNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88933.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88932.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88931.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQENNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPRGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP

KWNNETQEWERKVD FLEENITALLEEAQIQKEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLIWLF SNCR TLLSRVYQILQPILQRLSATLQRIREVLRT ELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88930.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88929.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88928.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88927.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88926.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNVTVEQAIEDVWQLFETSIPCKVLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQNGTGNESRCYMNHC
NTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTR
AENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKWK
DAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQKP
KEQHKRNYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGDQTNITMSAEVAELR
LELGDKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAGI
VQQQQQLLDVVKRQEQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPK
WNNETQEWERKVD FLEENITALLEEAQIQKEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHF
LIRQLIRLLTWLF SNCR TLLSRVYQILQPILQRLSATLQRIREVLRT ELYLQYGWSYFHEAVQAVWRS
TETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88925.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88924.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88923.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNVTVEQAIEDVWQLFETSIPCKVLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQNGTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKWK
KDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK

PKEQHKRNYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPANLTP
KWNNETWQEWKVDLFLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88922.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88921.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88920.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKRNYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPANLTP
KWNNETWQEWKVDLFLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88919.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEGLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88918.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88917.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88916.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88915.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88914.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88913.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPVNSLTP
KWNNETWQEWERKVDLFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88912.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88911.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88910.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPVNSLTP
KWNNETWQEWERKVDLFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKERDGGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88909.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88908.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88907.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNVTVEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKRNYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPANLTP
KWNNETWQEWKVDLFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88906.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88905.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88904.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNVTVEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKRNYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPANLTP
KWNNETWQEWKVDLFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88903.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88902.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88901.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNVTVEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT

RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDFFLEENITALLEEAIQKEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRIYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGELTLL

>QIS88900.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88899.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88898.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDFFLEENITALLEEAIQKEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGELTLL

>QIS88897.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88896.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88895.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG

IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KNNNETQEWERKVFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88894.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88893.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88892.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDANNNTVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDNMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYTLLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDGYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPANLTP
KNNNETQEWERKVFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLKIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWNYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88891.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPEGGNPLSAIPPSRSM

>QIS88890.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88889.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDANNNTVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDNMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYTLLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDGYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPANLTP
KNNNETQEWERKVFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLKIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWNYFHEAVQAVWRS

ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88888.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPEGGNPLSAIPPSRSM

>QIS88887.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLGEGHGAGGWRPGPPPPPPGLA

>QIS88886.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYVLLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
EWNNETWQEWKRVDFLEENITALLEEAIQEQKNMYELQKLSNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPAREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRITLLSRVYQILQIPILQRLSATLQRIREVLRTLTLYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88885.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDKWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88884.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCKCLGEGHGAGGWRPGPPPPPPGLA

>QIS88883.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYTLLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPANLTP
KWNNETWQEWKRVDFLEENITALLEEAIQEQKNMYELQKLSNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLKIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRITLLSRVYQILQIPILQRLSATLQRIREVLRTLTLYLQYGWNYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88882.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF

MHFRGGCIHSRIGQPEGGNPLSAIPPSRSM

>QIS88881.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88880.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTLYLQYGWNYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88879.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALF
MHFRGGCIHSRIGQPEGGNPLSAIPPSRSM

>QIS88878.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88877.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYTLLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPANLTP
KWNNETWQEWERKVDLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLKIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTLYLQYGWNYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88876.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALF
MHFRGGCIHSRIGQPEGGNPLSAIPPSRSM

>QIS88875.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88874.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88873.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88872.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88871.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88870.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88869.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88868.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA

KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYTLRLCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPANLTP
KWNNETWQEWKRVDFLEENITALLEEAIQKEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLKIVYIYVQMLAKLRQGYRPFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWNYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88867.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALF
MHFRGGCIHSRIGQPEGGNPLSAIPPSRSM

>QIS88866.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGLPPPPPPGLA

>QIS88865.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPANLTP
KWNNETWQEWKRVDFLEENITALLEEAIQKEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88864.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88863.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGLPPPPPPGLA

>QIS88862.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYTLRLCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK

PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPANLTP
KWNNETWQEWKVDLFLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLKIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWNYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88861.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPEGGNPLSAIPPSRSM

>QIS88860.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88859.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYATGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPANSLAP
KWNNETWQEWKVDLFLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88858.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGNPLSAIPPSRSM

>QIS88857.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLTQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88856.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYTLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPANLTP
KWNNETWQEWKVDLFLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG

VILLKIVIIYIVQMLAKLRQGYRPVLSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWNYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTL

>QIS88855.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPEGGNPLSAIPPSRSM

>QIS88854.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88853.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYTLLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPANLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLKIVIIYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWNYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTL

>QIS88852.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPEGGNPLSAIPPSRSM

>QIS88851.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88850.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPANLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVIIYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTL

>QIS88849.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88848.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA

>QIS88847.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALN
VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPANSLTP
KWNNETWQEWERKVDFFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIHLIRLLTWLFSNCRLLSRVYQILQPIQLRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88846.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88845.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA

>QIS88844.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYTLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPANLTP
KWNNETWQEWERKVDFFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLKIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRLLSRVYQILQPIQLRLSATLQRIREVLRTELYLQYGWNYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88843.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPEGGNPLSAIPPSRSM

>QIS88842.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88841.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYTLLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPANLTP
KWNNETWQEWERKVDLFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLKIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWNYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88840.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPLREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPEGGNPLSAIPPSRSM

>QIS88839.1 vpx protein, partial [Simian immunodeficiency virus]
WEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88838.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTVKHPRYTGTSTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDKNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPANLTP
KWNNETWQEWERKVDLFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88837.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGNPLSAIPPSRSM

>QIS88836.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88835.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTSTNDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKVDLFLEENITALLEEAIQEQKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRGGRWILAIPRRIRQGLELTLL

>QIS88834.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88833.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88832.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNIDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKVDLFLEENITALLEEAIQEQKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRGGRWILAIPRRIRQGLELTLL

>QIS88831.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88830.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88829.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT

RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTSTNDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDFFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGELTLL

>QIS88828.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88827.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88826.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNIDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDFFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGELTLL

>QIS88825.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88824.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88823.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNIDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG

IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KNNNETWQEWKVFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWKTLLRRGGRWILAIIPRRIRQGLELTLL

>QIS88822.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88821.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88820.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDANNNTVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVPVPTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNIDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDGYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KNNNETWQEWKVFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88819.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88818.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88817.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDANNNTVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVPVPTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNIDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDGYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KNNNETWQEWKVFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS

ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88816.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88815.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88814.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTSNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKRVDFLEENITALLEEAIQKEKNMYELQKLSNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88813.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88812.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88811.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTSNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKRVDFLEENITALLEEAIQKEKNMYELQKLSNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88810.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF

MHFRGGCIHSRIGQPGGNPLSAIPPSRSM

>QIS88809.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88808.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGPVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTSTNDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKRVDFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRLLSRVYQILQPILQRLSATLQRIREVLRTETLYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88807.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGNPLSAIPPSRSM

>QIS88806.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88805.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGNPLSAIPPSRSM

>QIS88804.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88803.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGPVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTSTNDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKRVDFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRLLSRVYQILQPILQRLSATLQRIREVLRTETLYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88802.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88801.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88800.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASITSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSIIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PQEQHKRNYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88799.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88798.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88797.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKRNYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTMTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
AILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88796.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88795.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88794.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNTWGCFAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGELTLL

>QIS88793.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88792.1 vpx protein, partial [Simian immunodeficiency virus]
VWVQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88791.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDKVVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88790.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88789.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASITSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGELTLL

>QIS88788.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88787.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA

>QIS88786.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASITSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSIIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVPVPTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDGYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88785.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88784.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA

>QIS88783.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASITSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSIIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVPVPTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDGYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88782.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88781.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88780.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASITSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSIIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88779.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88778.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPGYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88777.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNTWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88776.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88775.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88774.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNKSRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLKLGDKYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWETKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYKLQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRLLSRVYQILQPILQRLSATLQRIQEVLRTELTYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRKGGRWILAIPRRIRQGLELTLL

>QIS88773.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDKVVVEVLEELKEKALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88772.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88771.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASITSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSIIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLVG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRGGRWILAIPRRIRQGLELTLL

>QIS88770.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88769.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88768.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88767.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88766.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88765.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88764.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVLPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLDQAQLNTWGCFAFRQVCHTTVPWPNASLTP
KWNNETWQEWKRVDFLEENITALLEEAQIQEKNMYELQKLSNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRITLLSRVYQILQILQRLSATLQRIREVLRTLTLYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88763.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88762.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88761.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASITSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVLPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLDQAQLNAGWCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKRVDFLEENITALLEEAQIQEKNMYELQKLSNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRITLLSRVYQILQILQRLSATLQRIREVLRTLTLYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88760.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF

MHFRGGCIHSRIGQPGGNPLSAIPPSRSM

>QIS88759.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPG

>QIS88758.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDKVVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGNPLSAIPPSRSM

>QIS88757.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPG

>QIS88756.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSICKVCLSPCITMRCNKSETDRWGLTKSITTTASTTTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTASRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKRVDFLEENITALLEEAIQKEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPFSSPPSYFQQTTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88755.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGNPLSAIPPSRSM

>QIS88754.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPG

>QIS88753.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSICKVCLSPCITMRCNKSETDRWGLTKSITTTASITTTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTASRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKRVDFLEENITALLEEAIQKEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPFSSPPSYFQQTTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88752.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88751.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88750.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNTWGCFAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88749.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88748.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88747.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALN
VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASITSTTASA
KVDMMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88746.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88745.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88744.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALN
VTESFDAWNNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASITSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSIIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDFFLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIYQGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88743.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88742.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88741.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDKNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDFFLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIYQGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88740.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88739.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88738.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88737.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88736.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGGHAGGWRPGRPPPPPPGLA

>QIS88735.1 envelope glycoprotein, partial [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQA

>QIS88734.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88733.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGGHAGGWRPGRPPPPPPGLA

>QIS88732.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT

RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDKNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLFLEENITALLEEAIQKEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88731.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88730.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88729.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88728.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88727.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDANNVTVEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLFLEENITALLEEAIQKEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLADAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88726.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88725.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88724.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN

VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDKNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKVDLFLEENITALLEEAIQEQKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88723.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88722.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPG

>QIS88721.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKVDLFLEENITALLEEAIQEQKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPFSSPPSYFQQTHIQQDPALPTREGKERDGGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRLLSRVYQILQPILQRLSATLQRTREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88720.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88719.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPG

>QIS88718.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVPVTIMSGLVFHSQPINDRPKQAWCWFGGKW

KDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDKNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKRVDFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88717.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88716.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88715.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNYLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDKNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKRVDFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88714.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88713.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88712.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88711.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWGYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88710.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA

KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDKNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKRVDFLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88709.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGNPLSAIPPSRSM

>QIS88708.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGLPPPPPPGLA

>QIS88707.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIVKPCVKSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKRVDFLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKERDGGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRTREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88706.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGNPLSAIPPSRSM

>QIS88705.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGLPPPPPPGLA

>QIS88704.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIVKPCVKSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
RVDVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK

PKEQHKRNYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88703.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88702.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88701.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKRNYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88700.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGRGNPLSAIPPSRSM

>QIS88699.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88698.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNVTVEQAIEDVWQLLETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTTSTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKRNYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG

VILLRIVIIYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88697.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGRGNPLSAIPPSRSM

>QIS88696.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88695.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDFFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVIIYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88694.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGNNPLSAIPPSRSM

>QIS88693.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88692.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
RVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDFFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVIIYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88691.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88690.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA

>QIS88689.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRITLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPANLTP
KWNNETWQEWERKVDLFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRITLLSRVYQILQPIQLRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88688.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88687.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA

>QIS88686.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTNVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRITLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPANLTP
KWNNETWQEWERKVDLFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRITLLSRVYQILQPIQLRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88685.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPEGGNPLSAIPPSRSM

>QIS88684.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88683.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQKEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88682.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88681.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88680.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPANLTP
KWNNETWQEWERKVDLEENITALLEEAIQKEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88679.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRGML

>QIS88678.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88677.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKVDLFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRGGRWILAIPRRIRQGLELTLL

>QIS88676.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPEGGNPLSAIPPSRSM

>QIS88675.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88674.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPANLTP
KWNNETWQEWKVDLFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVVQMLAKLRQGYRPVFSSPPPYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRGGRWILAIPRRIRQGLELTLL

>QIS88673.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGNPLSAIPPSRSM

>QIS88672.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88671.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT

RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTNVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPANLTP
KWNNETWQEWERKVDFFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGELTLL

>QIS88670.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPEGGNPLSAIPPSRSM

>QIS88669.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88668.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESKCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPANLTP
KWNNETWQEWERKVDFFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGELTLL

>QIS88667.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQTGGGNPLSAIPPSRSM

>QIS88666.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88665.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQTISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG

IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KNNNETWQEWKVFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKERDGGEGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88664.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGNPLSAIPPSRSM

>QIS88663.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88662.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDANNVTVEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVPVPTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDGYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KNNNETWQEWKVFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKERDGGEGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88661.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGNPLSAIPPSRSM

>QIS88660.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88659.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDANNVTVEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVPVPTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDGYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLAP
KNNNETWQEWKVFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGGEGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS

ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88658.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGRGNPLSAIPPSRSM

>QIS88657.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88656.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALN
VTESFDAWNNVTVEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKRVDFLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88655.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGRGNPLSAIPPSRSM

>QIS88654.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88653.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKRVDFLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88652.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF

MHFRGGCIHSRIGQPGGNPLSAIPPSRNML

>QIS88651.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88650.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88649.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFKGGCIHSRIGQPGGNPLSAIPPSRSM

>QIS88648.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88647.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSTTTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88646.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGNPLSAIPPSRSM

>QIS88645.1 vpx protein, partial [Simian immunodeficiency virus]
RVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88644.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATRNRTDWTGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKNETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88643.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPEGGNPLSAIPPSRSM

>QIS88642.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88641.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88640.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPEGGNPLSAIPPSRSM

>QIS88639.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88638.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA

KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKIGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTAVPWPNASLTP
KWNNETWQEWKRVDFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88637.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALF
MHFRGGCIHSRIGQPEGGNPLSAIPPSRSM

>QIS88636.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRGPPPPPPGGLA

>QIS88635.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSICKVKSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTPWPNASLTP
KWNNETWQEWKRVDFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88634.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALF
MHFRGGYIHSRIGQPGGGNPLSAIPPSRSM

>QIS88633.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRGPPPPPPGGLA

>QIS88632.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSICKVKSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK

PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKGGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88631.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGRGNPLSAIPPSRSM

>QIS88630.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88629.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88628.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPEGGNPLSAIPPSRSM

>QIS88627.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88626.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTAASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG

VILLRIVIIYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88625.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFKGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88624.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88623.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALN
VTESFDAWNNVTVEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVSETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDFFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVIIYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYLHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88622.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPEGGNPLSAIPPSRSM

>QIS88621.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88620.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPANLTP
KWNNETWQEWERKVDFFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVIIYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88619.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPEGGNPLSAIPPSRSM

>QIS88618.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA

>QIS88617.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCITQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88616.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGNPLSAIPPSRNML

>QIS88615.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA

>QIS88614.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIIVRHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNTSLTP
KWNNETWQEWERKVDLFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88613.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPEGGNPLSAIPPSRSM

>QIS88612.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88611.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPANLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSKVYQILQPILQRLSATLQRIREVLRTELYLYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88610.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88609.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88608.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATVPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPANLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88607.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFKGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88606.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88605.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88604.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88603.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88602.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88601.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHSRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88600.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88599.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIIKPCVKLSPLCITKRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT

RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
LKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDFFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGELTLL

>QIS88598.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88597.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88596.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLGVVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPVNSLTP
KWNNETWQEWERKVDFFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGELTLL

>QIS88595.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88594.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88593.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG

IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KNNNETWQEWKRVDFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRGGRWILAIIPRRIRQGLELTLL

>QIS88592.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGRGNPLSAIPPSRSM

>QIS88591.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88590.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDANNNTVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKNETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDGYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KNNNETWQEWKRVDFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRGGRWILAIIPRRIRQGLELTLL

>QIS88589.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGNPLSAIPPSRSM

>QIS88588.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88587.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDANNNTVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDGYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KNNNETWQEWKRVDFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS

ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88586.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88585.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88584.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATQNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIPCKVLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKRVDFLEENITALLEEAIQEQKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88583.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCTHSRIGQPGGGNPLSAIPPSRSM

>QIS88582.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88581.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATQNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIPCKVLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKRVDFLEENITALLEEAIQEQKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88580.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF

MHFRGGCTHSRIGQPGGNPLSAIPPSRSM

>QIS88579.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88578.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATQNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTGNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKVDLFLEENITVLLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRITLSRVYQILQPILQRLSATLQRIREVLRTLYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88577.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALF
MHFRGGCTHSRIGQPGGNPLSAIPPSRSM

>QIS88576.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88575.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATQNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPIDDRPKQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTGNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKVDLFLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRITLSRVYQILQPILQRLSATLQRIREVLRTLYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88574.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALF
MHFRGGCTHSRIGQPGGNPLSAIPPSRSM

>QIS88573.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88572.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATQNRDTWGTTQCLPDNGDYSEVALN
 VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
 KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
 CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
 RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
 KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
 PKEQHCRNYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
 RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
 KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
 VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
 FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
 ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88571.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
 MHFRGGCTHSRIGQPGGGNPLSAIPPSRSM

>QIS88570.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88569.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATQNRDTWGTTQCLPDNGDYSEVALN
 VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
 KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
 CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
 RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
 KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
 PKEQHCRNYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
 RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
 KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
 VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
 FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
 ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88568.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
 MHFRGGCTHSRIGQPGGGNPLSAIPPSRSM

>QIS88567.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88566.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATQNRDTWGTTQCLPDNGDYSEVALN
 VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA

KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKRVDFLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88565.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCTHSRIGQPGGGNPLSAIPPSRSM

>QIS88564.1 vpx protein, partial [Simian immunodeficiency virus]
VWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRGPPPPPPGLA

>QIS88563.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATQNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSICKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKRVDFLEENITVLLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88562.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGYTHSRIGQPGGGNPLSAIPPSRSM

>QIS88561.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRGPPPPPPGLA

>QIS88560.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATQNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSICKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK

PKEQHKRNYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKVDLFLEENITALLEEAQIQEKNMYELQKLNSWDVLGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88559.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCTHSRIGQPGGGNPLSAIPPSRSM

>QIS88558.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGLA

>QIS88557.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATQNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGTRAEN
RTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAI
KEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQKPKEQ
HKRNYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELYRLEL
GDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAGIVQQ
QQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWN
ETWQEWKVDLFLEENITVLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILL
RIVYIYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIR
QLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATET
LAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88556.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCTHSRIGQPGGGNPLSAIPPSRSM

>QIS88555.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGLA

>QIS88554.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATQNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKRNYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKVDLFLEENITVLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG

VILLRIVIIYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88553.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCTHSRIGQPGGGNPLSAIPPSRSM

>QIS88552.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88551.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCTHSRIGQPGGGNPLSAIPPSRSM

>QIS88550.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88549.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCTHSRIGQPGGGNPLSAIPPSRSM

>QIS88548.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88547.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCTHSRIGQPGGGNPLSAIPPSRSM

>QIS88546.1 vpx protein, partial [Simian immunodeficiency virus]
VWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88545.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATQNRDTWGTQCLPDNGDYSEVALN
VTESFDANNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFRGKW
KDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDKYLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKVDLEENITVLLEEAQIQEKNMYELQKLSNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVIIYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88544.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCTHSRIGQPGGGNPLSAIPPSRSM

>QIS88543.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88542.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATQNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLFLEENITALLEEAIQEQKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRSTLSRVYQILQPILQRLSATLQRIREVLRTELYLYQWGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88541.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCTHSRIGQPGGGNPLSAIPPSRSM

>QIS88540.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88539.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCTHSRIGQPGGGNPLSAIPPSRSM

>QIS88538.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88537.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATQNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLFLEENITVLLEEAIIQEQKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRSTLSRVYQILQPILQRLSATLQRIREVLRTELYLYQWGSYFHEAVQAVWRS

ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88536.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCTHSRIGQPGGGNPLSAIPPSRSM

>QIS88535.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88534.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSTDLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKRVDFLEENITALLEEAQIQEKNMYELQKLSNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKERDGGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88533.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88532.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88531.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNVTVEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKRVDFLEENITALLEEAQIQEKNMYELQKLSNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88530.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF

MHFRGGCIHSRIGQPGGNPLSAIPPSRSM

>QIS88529.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88528.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTNVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKVDLFLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRLLSRVYQILQPILQRLSATLQRIREVLRTLYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88527.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGNPLSAIPPSRSM

>QIS88526.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88525.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKVDLFLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKERDGGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRLLSRVYQILQPILQRLSATLQRIREVLRTLYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88524.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGNPLSAIPPSRSM

>QIS88523.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSHVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88522.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKVDLFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88521.1 vpr protein [Simian immunodeficiency virus]
MEERPPGNEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88520.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPNYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88519.1 vpr protein [Simian immunodeficiency virus]
MEERPPGNEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88518.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPNYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88517.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKVDLFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88516.1 vpr protein [Simian immunodeficiency virus]
MEERPPGNEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88515.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPNYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88514.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVLPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDPLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLYQWGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88513.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88512.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88511.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVLPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDPLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLYQWGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88510.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88509.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88508.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRITLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88507.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88506.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88505.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRITLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88504.1 vpr protein [Simian immunodeficiency virus]
MEERPPGNEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88503.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPNYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88502.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH

CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFN
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKRVDFLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88501.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88500.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALN
VTESFDAWNNTVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFN
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKRVDFLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88499.1 vpr protein [Simian immunodeficiency virus]
MEERPPGNEGPRQEPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSMQLQHMLL

>QIS88498.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPNYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88497.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALN
VTESFDAWNNTVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKNEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFN
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLITNIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKRVDFLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKERDGGEGGGNSSWPWQIEYIH

FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTETLYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88496.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88495.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88494.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNVTVEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTETLYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88493.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88492.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88491.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNVTVEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTNVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTETLYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88490.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88489.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGVGGWRPGRPPPPPPGLA

>QIS88488.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNVTVEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPCSKVSVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKVDLFLEENITALLEEAIQEQKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRITLSRVYQILQPIQLRSLATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88487.1 vpr protein [Simian immunodeficiency virus]
MEERPPGNEGPPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88486.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPNYVKYRYLCLIQKALFMHCKKGCRCLEGEHGVGGWRPGRPPPPPPGLA

>QIS88485.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNVTVEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPCSKVSVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKVDLFLEENITALLEEAIQEQKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLKIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRITLSRVYQILQPIQLRSLATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGKWILAIPRRIRQGLELTLL

>QIS88484.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEILEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88483.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88482.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDGYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKERDGGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRDGRWILAIPRRIRQGLKLTL

>QIS88481.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88480.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88479.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDGYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88478.1 vpr protein [Simian immunodeficiency virus]
MEERPPGNEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88477.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPNYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88476.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN

VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVPVPTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKVDLFLEENITALLEEAIQEQKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88475.1 vpr protein [Simian immunodeficiency virus]
MEERPPGNEGPRQEPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88474.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPNYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGGPPPPPPGLA

>QIS88473.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVPVPTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKVDLFLEENITALLEEAIQEQKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88472.1 vpr protein [Simian immunodeficiency virus]
MEERPPGNEGPRQEPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88471.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPNYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGGPPPPPPGLA

>QIS88470.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVPVPTIMSGLVFHSQPINDRPKQAWCWFGGKW

KDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKRVDFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGGESGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88469.1 vpr protein [Simian immunodeficiency virus]
MEERPPGNEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88468.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPNYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88467.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKRVDFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQIHIQQDPALPTREGKEGDGGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88466.1 vpr protein [Simian immunodeficiency virus]
MEERPPGNEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88465.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPNYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88464.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP

KWNNETQEWERKVDLFLEENITALLEEAIQQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRITLLSRVYQILQPILQRLSATLQRIREVLRTLYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88463.1 vpr protein [Simian immunodeficiency virus]
MEERPPGNEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88462.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPNYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88461.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDKWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAMPSSRSM

>QIS88460.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88459.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88458.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88457.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGPVAPWRNATIPFCATKNRDTWGTTQCLPDNGDYSEALN
VTESFDAWNNVTVEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDENQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETQEWERKVDLFLEENITALLEEAIQQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRITLLSRVYQILQPILQRLSATLQRIREVLRTLYLQYGWNYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRVRQGLELTLL

>QIS88456.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88455.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88454.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRITLLSRVYQILQPIQLRSLATLQRIREVLRTELYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88453.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88452.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA

>QIS88451.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88450.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA

>QIS88449.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTVKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRITLLSRVYQILQPIQLRSLATLQRIREVLRTELYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88448.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88447.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88446.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGINNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88445.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88444.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPRLA

>QIS88443.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDKVVVEVLEELKEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAMPSSRSM

>QIS88442.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88441.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88440.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88439.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88438.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDFFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRITLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88437.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88436.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88435.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNVTVEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDFFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRITLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88434.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88433.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88432.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88431.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88430.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNVTVEQAIEDVWQLFETSIPCKVLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESKCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVLPVTIMSGLVFHSQPINDRPRQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKVDLFLEENITALLEEAIQKEKNMYELQKLSNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88429.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88428.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88427.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNVTVEQAIEDVWQLFETSIPCKVLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVLPVTIMSGLVFHSQPINDRPRQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTNVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKVDLFLEENITALLEEAIQKEKNMYELQKLSNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88426.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF

MHFRGGCIHSRIGQPGGNPLSAIPPSRSM

>QIS88425.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88424.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTGNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKRVDFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRITLLSRVYQILQPILQRLSATLQRIREVLRTETLYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88423.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGNPLSAIPPSRSM

>QIS88422.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88421.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGNPLSAIPPSRSM

>QIS88420.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88419.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLMAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTGNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKRVDFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEEDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRITLLSRVYQILQPILQRLSATLQRIREVLRTETLYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88418.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88417.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88416.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTTSTTTTASA
KVDMMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLTKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGTWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88415.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88414.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88413.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTTTASA
KVDMMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88412.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88411.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88410.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNVTVEQAIEDVWQLFETSICKVCLSPCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVLPVTIMSGLVFHSQPINDRPRQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVSKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKVDFFLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88409.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88408.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88407.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNVTVEQAIEDVWQLFETSICKVCLSPCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVLPVTIMSGLVFHSQPINDRPRQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKVDFFLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88406.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88405.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88404.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLMAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRITLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGTWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88403.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88402.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGGHAGGWRPGGPPPPPPGLA

>QIS88401.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIATLLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDSRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRITLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88400.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88399.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGGHAGGWRPGGPPPPPPGLA

>QIS88398.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
RVDVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH

CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVPVPTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLMAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKRNYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQKEKNMYELQKLNSWDVFGNWFDLASWIKYIYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGSYFHEAVQAVWRS
ATETLAGAWEDLWETLRRGGRWILAIPRRIRQGELTLL

>QIS88397.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88396.1 vpx protein, partial [Simian immunodeficiency virus]
QIWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88395.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNVTVEQAIEDVWQLFETSIPCKVLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVPVPTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKRNYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQKEKNMYELQKLNSWDVFGNWFDLASWIKYIYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQAHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGELTLL

>QIS88394.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88393.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88392.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNVTVEQAIEDVWQLFETSIPCKVLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVPVPTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKRNYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY

RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKRVDFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQAHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88391.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88390.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88389.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKRVDFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQAHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88388.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88387.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88386.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKRVDFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQAHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH

FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTETLYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88385.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88384.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88383.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQAHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTETLYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88382.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88381.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88380.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQAHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTETLYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88379.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88378.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88377.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNVTVEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLFLEENITALLEEAIQEQKNMYELQKLSNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPFSSPPSYFQQAHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRITLLSRVYQILQPIQLRSLATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88376.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88375.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88374.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88373.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88372.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNVTVEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLFLEENITALLEEAIQEQKNMYELQKLSNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPFSSPPSYFQQAHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRITLLSRVYQILQPIQLRSLATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS

ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88371.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88370.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88369.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKRVDFLEENITALLEEAQIQEKNMYELQKLSNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQAHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88368.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88367.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88366.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKRVDFLEENITALLEEAQIQEKNMYELQKLSNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQAHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88365.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF

MHFRGGCIHSRIGQPGGNPLSAIPPSRSM

>QIS88364.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88363.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRITLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQAHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRITLLSRVYQILQPILQRLSATLQRIREVLRTETLYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88362.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGNPLSAIPPSRSM

>QIS88361.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88360.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRITLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQAHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRITLLSRVYQILQPILQRLSATLQRIREVLRTETLYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88359.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGNPLSAIPPSRSM

>QIS88358.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88357.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQAHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88356.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88355.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88354.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQAHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88353.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88352.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88351.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA

KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVPVTIMSGLVFHSQPINDRPKQAWCFEGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKRVDFLEENITALLEEAIQQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKERDGGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88350.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88349.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEYAGGWRPGLPPPPPPGLA

>QIS88348.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQKQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVPVTIMSGLVFHSQPINDRPKQAWCFEGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKRVDFLEENITALLEEAIQQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKERDGGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88347.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88346.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGLPPPPPPGLA

>QIS88345.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQKQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVPVTIMSGLVFHSQPINDRPKQAWCFEGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK

PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKVDLFLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKERDGGEGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88344.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88343.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGLPPPPPPGLA

>QIS88342.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKVDLFLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKERDGGEGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88341.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88340.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGLPPPPPPGLA

>QIS88339.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDNTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKVDLFLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG

VILLRIVIIYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKERDGGEGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTETLYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88338.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88337.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88336.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNVTVEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKTNLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDFFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIYQGVYIVVG
VILLRIVIIYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKERDGGEGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTETLYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88335.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88334.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88333.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNVTVEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKTNLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDFFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIYQGVYIVVG
VILLRIVIIYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKERDGGEGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTETLYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88332.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88331.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA

>QIS88330.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVPVPTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKERDGGEGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88329.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88328.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA

>QIS88327.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNVTVEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVPVPTIMSGLVFHSQPINDRPAQAWCWFEKGW
KDAIKEVKQTVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKERDGGEGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88326.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHICNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88325.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88324.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCFEGKW
KDAIKEVKQTVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKERDGGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88323.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88322.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88321.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNET
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCFEGKW
KDAIKEVKQTVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88320.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVMEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88319.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88318.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNET
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPAWQWFEQKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKVDLFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIYQGVYIVVG
VILLRIVYIYQMLAKLRQGYRPFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88317.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVMEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88316.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88315.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPAWQWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKVDLFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIYQGVYIVVG
VILLRIVYIYQMLAKLRQGYRPFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88314.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88313.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88312.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT

RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDFFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGELTLL

>QIS88311.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88310.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88309.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDFFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGELTLL

>QIS88308.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDLRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88307.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88306.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLDQSRTLLAG

IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KNNNETQEWERKVFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKERDGGEGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRGGRWILAIIPRRIRQGLELTLL

>QIS88305.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGNPLSAIPPSRSM

>QIS88304.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88303.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDANNNTVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCITQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KNNNETQEWERKVFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGGEGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRGGRWILAIIPRRIRQGLELTLL

>QIS88302.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGNPLSAIPPSRSM

>QIS88301.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88300.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDANNNTVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KNNNETQEWERKVFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGGEGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS

ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTL

>QIS88299.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPHLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88298.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88297.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMN
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDGYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWKVDLEENITALLEEAQIQEKNMYELQKLSNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRITLLSRVYQILQIPILQRLSATLQRIREVLRTLTLYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTL

>QIS88296.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88295.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88294.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88293.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88292.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMN
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELDGYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP

KWNNETQEWERKVDLFLEENITALLEEAIQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTETLYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88291.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPHLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88290.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88289.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTQCLPDNGDYSEMALN
VTESFDAWNNVTVEQAIEDVWQLFETSICKVCLSPCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETQEWERKVDLFLEENITALLEEAIQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTETLYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88288.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPHLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88287.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88286.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTQCLPDNGDYSEMALN
VTESFDAWNNVTVEQAIEDVWQLFETSICKVCLSPCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETQEWERKVDLFLEENITALLEEAIQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTETLYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88285.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88284.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMN
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGELTLL

>QIS88283.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88282.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88281.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88280.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88279.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMN
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRQKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGELTLL

>QIS88278.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88277.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88276.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRITLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDFFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPVLPTRREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRITLLSRVYQILQPIQLRLSATLQRIREVLRTELYLQYGSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88275.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88274.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88273.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88272.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88271.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALN
VTESFDAWNNTVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRITLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDFFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH

FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTETLYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88270.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPHLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88269.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88268.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQQKKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTETLYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88267.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88266.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88265.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVLPVTIMSGLVFHSQPINDRPKQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDLEENITALLEEAIQQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTETLYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

>QIS88264.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88263.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88262.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRITLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQALNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDFFLEENITALLEEAIQQKKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRITLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88261.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88260.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>QIS88259.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALN
VTESFDAWNNVTVEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASA
KVDVMVNETSSCIAQDNCTGLEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNH
CNTSVIQESCDKHYWDAIRFRYCAPPGYALLRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGT
RAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVLPVTIMSGLVFHSQPINDRPAQAWCWFGGKW
KDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKMNWFLNWVEDRNTANQK
PKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELY
RLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTLTAAQSRITLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQALNAWGCAFRQVCHTTVPWPNASLTP
KWNNETWQEWERKVDFFLEENITALLEEAIQQKKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG
VILLRIVYIYVQMLAKLRQGYRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIH
FLIRQLIRLLTWLFSNCRITLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRS
ATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

>QIS88258.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALF
MHFRGGCIHSRIGQPGGGNPLSAIPPSRSM

>QIS88257.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

>XP_009970171.1 T-cell-specific surface glycoprotein CD28 isoform X1 [Tyto alba alba]

MLLGILVVLCFIPTADV TENKILVAQHPLLVANKTATLVCNYTYNGTGKEFRASLHKGTGSAVEVCFIS
WNTTKTSSNSNKEFNCQGIHDKDKVIFNLWNMSADQTDIYFCKIEAMYPPPYVYNEKSNGTVIHVKETPI
QTQEPQSAIPLWIMVSVTGVLAFYSMLITAVFINYWQKSKKKTYHQSDYMNMTPRHPPYQKNKGYPYAP
TRDYTAYRSWQP

>XP_002187875.1 T-cell-specific surface glycoprotein CD28 isoform X1 [Taeniopygia guttata]

MLLGILVVLFFIPTADV TENKILVAQHPLLVANQTATLVCNYTYNGTGKEFRASLQKGTDSSEVVCVIS
WNTTKISSNSNKGFCNCGSYDKDKVIFNLWNMNTNQTDIYFCKIEVMYPPPYVYNEKSNGTVIHVKETPT
QIQEPQSAIPLWILATVTGILALYSTLITAVSINYWQKSKKMYRQSDYMNMTPRHPPYQKNKGYPYAP
TRDYTAYRSWQP

>NP_001274339.1 T-cell-specific surface glycoprotein CD28 precursor [Sus scrofa]

MILGLLLALNFFPSIQVTGNKILVKQSPILVNDNEVNLSCKYTYNLSKEFRASLYKGADSAVEVCVNN
VNYSRLQFKPNTGFNC DVKYGNETVTFYLRNLHVNQTDIYFCKIEVLYPPPYIDNEKSNGTIIHVKEKH
CPAPRPPESSKIFWVLVVVNGVVAFYSLVVTLLALFFYWMKSKRTRMLQSDYMNMTPRRLGPTRKHYPYA
PARDFAAYRS

>XP_006194333.1 T-cell-specific surface glycoprotein CD28 [Camelus ferus]

MTRRSGVSSAHLTLGLLREEGLEPWPTVSTMILRLLLALNFFPSIQVTENKILVKQSPMLVVNNNEVNLS
CKYTYNLSKEFRASLYKGADSAVEVCVSGNYSYQLQFHSSTGFNCNGKLGNETVTFYLRDLVYNQTDI
YFCKIEVMYPPPYIDNEKSNGTIIHVKEKHLCPAPWSPPESSKPFWALVVVASILAFYSLLASVALCNCWL
KSKRNRMLQSDYMNMTPRRPGPTRRHYQPYAPARDFAAAYRS

>XP_015723742.1 T-cell-specific surface glycoprotein CD28 [Coturnix japonica]

MLGILVVLCLIPAADV TENKILVAQRPLLVANRTATLVCNYTYNGTGKEFRASLHKGTDSAVEVCFISW
NMTKINSNSNKEFNCQGIHDKDKVIFNLWNMSASQTDIYFCKIEAMYPPPYIYNEKSNGTVIHVRETPVQ
TQEPESATSYWVMVTVTGLLGFYSVLITAVFIIYRQKSKRNRYSRQSDYMNMTPRHPPHQKNKGYPYAPT
REYTAYRSWQP

>QHZ20485.1 Sequence 111 from patent US 10501542

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRGIASFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPY
LGIGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSLTTGVYVKMPTEPE
CEKQFQPYFIPIN

>QHY89223.1 Sequence 87 from patent US 10479833

MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVYG
NYSQQLQVYSKTFNC DGKLGNESVTFYLNLYVNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHL
CPSPLFPGPSKPFVVLVVVGGVLACYSLLVTVAFIIFWVRSKRSRLHSDYMNMTPRRPGPTRKHYPYA
PPRDFAAAYRS

>QHY89214.1 Sequence 77 from patent US 10479833

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRGIASFVCEYASPGKATEVR

VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPY
LGIGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPTEPE
CEKQFQPYFIPIN

>QHY78057.1 Sequence 4 from patent US 10471098

MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVG
NYSQQLQVYSKTGFNC DGKLGNESVTFYLQNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHL
CPSPLFPGPSKPFVWL VVVGGVLACYSLLVTVAFIIFWVRSKRSRLLHSDYMNMTPRRPGPTRKHYQPYA
PPRDFAAAYRS

>QHY12645.1 Sequence 75 from patent US 10457732

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRGIA SFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPY
LGIGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPTEPE
CEKQFQPYFIPIN

>QHX48885.1 Sequence 12 from patent US 10415015

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRGIA SFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPY
LGIGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPTEPE
CEKQFQPYFIPIN

>QHX48884.1 Sequence 11 from patent US 10415015

MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVG
NYSQQLQVYSKTGFNC DGKLGNESVTFYLQNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHL
CPSPLFPGPSKPFVWL VVVGGVLACYSLLVTVAFIIFWVRSKRSRLLHSDYMNMTPRRPGPTRKHYQPYA
PPRDFAAAYRS

>QHX46549.1 Sequence 16 from patent US 10414814

VPLSLYS

>QHX46548.1 Sequence 15 from patent US 10414814

QDSTSDLPAPPLSKVPLQQNFQDNQFHGKWYVVLGAGNRILRDDQHPMNYATIYELKEDKSYNVTSVI
SSHKKCEYTIATFVPGSQPGEFTLGNISYGDKTSYLVVRVSTDYNQYAVVFFKLAEDNAEFFAITIYGR
TKELASELKENFIRFSKSLGLPENHIVFPVPIDQCIDG

>QHX46547.1 Sequence 14 from patent US 10414814

MRPSGTAGAALLALLAALCPASRADILLTQSPVILSVSPGERVSFSCRASQSIGTNIHWYQRTNGSPRL
LIKYASESISGIPSRFSGSGSGTDFTLINSVESEDIADYYCQNNNWPTTFGAGTKLELKRTVAAPSVF
IFPPSDEQLKSGTASVVCLLN NFYPREAKVQWKVDNALQSGNSQESVTEQDSKDYSLSTLTLSKADY
EKHKVYACEVTHQGLSSPVTKSFNRGA

>QHX46546.1 Sequence 13 from patent US 10414814

MRPSGTAGAALLALLAALCPASRARKVCNGIGIGEFKDSLSINATNIKHFNCTSI SGLHILPVAFRGD
SFTHTPPLDPQELDILKTVKEITGFLIIAAWPNRDTLHAFENLEIIRGRTNMDGQFSLAVVSLNITSLG
LRSLKEISDGDV IISGNKNLCYANTINWKKLFGTSGQKTKIISNRGENSCKATGQVCHALCSPEGCWGPE
PKDCVSCRNVSRGRECSRGSGSGSGSVPLSLYSGSTSGSGKSSESGSGAQQVLKQSGPGLVQPSQ
SLSITCTVSGFSLTNYGVHWVRQSPGKGLEWLGVWISGGNTDYNTPFTSRLSINKDNSKSQVFFKMNSLQ

SNDTAIYYCARALTYDYEFAYWGQGLTVTVSAASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPV
TVSWNSGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKRVEPKSCDKTH
TCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREE
QYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSREEMTKNQVS
LTCLVKGFYPSDIAVEWESNGQPENNYKTTPVLDSGDSFFLYSKLTVDKSRWQQGNVVFSCSVMHEALHN
HYTQKSLSLSPGK

>QHX46545.1 Sequence 12 from patent US 10414814

CSQFLRGQECVEECRVLQGLPREYVNARHCLPCHPECQPQNGSVTCFGPEADQCVACAHYKDPPFCVARC
PSGVKPDLSYMPIWKFPDEEGACQPCPINGSRSGGTSGGGSVPVPSGSGSTSGSGKSSEGSQASTHTCP
PCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYN
STYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTC
LVKGFYPSDIAVEWESNGQPENNYKTTPVLDSGDSFFLYSKLTVDKSRWQQGNVVFSCSVMHEALHNHYT
QKSLSLSPGK

>QHX46544.1 Sequence 11 from patent US 10414814

CSQFLRGQECVEECRVLQGLPREYVNARHCLPCHPECQPQNGSVTCFGPEADQCVACAHYKDPPFCVARC
PSGVKPDLSYMPIWKFPDEEGACQPCPINGSRSGGTSGGGSVPLSLYSGSTSGSGKSSEGSQASTHTCP
PCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYN
STYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTC
LVKGFYPSDIAVEWESNGQPENNYKTTPVLDSGDSFFLYSKLTVDKSRWQQGNVVFSCSVMHEALHNHYT
QKSLSLSPGK

>QHX46543.1 Sequence 10 from patent US 10414814

MHVAQPAVVLASSRGIASFVCEYASPGKATEVRVTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTS
SGNQVNLTIQGLRAMDTGLYICAVALMYPPPYLIGIGNGTQIYVIDPEPCPDSGSRSGGTSGGGSVPLS
LYSGSTSGSGKSSEGSQASTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPE
VKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQ
PREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPVLDSGDSFFLYSKLTV
DKSRWQQGNVVFSCSVMHEALHNHYTQKSLSLSPGK

>QHX46542.1 Sequence 9 from patent US 10414814

HVAQPAVVLASSRGIASFVCEYASPGKATEVRVTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSS
GNQVNLTIQGLRAMDTGLYICKVALMYPPPYLIGIGNGTQIYVIDPEPCPDSGSRSGGTSGGGSVPLSL
YSGSTSGSGKSSEGSQASTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEV
KFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQ
REPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPVLDSGDSFFLYSKLTV
DKSRWQQGNVVFSCSVMHEALHNHYTQKSLSLSPGK

>QHX46541.1 Sequence 8 from patent US 10414814

MHVAQPAVVLASSRGIASFVCEYASPGKATEVRVTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTS
SGNQVNLTIQGLRAMDTGLYICAVELMYPPPYLIGIGNGTQIYVIDPEPCPDSGSRSGGTSGGGSVPLS
LYSGSTSGSGKSSEGSQASTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPE
VKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQ
PREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPVLDSGDSFFLYSKLTV
DKSRWQQGNVVFSCSVMHEALHNHYTQKSLSLSPGK

>QHX46540.1 Sequence 7 from patent US 10414814

MHVAQPAVVLASSRGIASFVCEYASPGKATEVRVTVLRQADSQVTEVCAAHYMMGNELTFLDDSICTGTS
SGNQVNLTIIQGLRAMDTGLYICKVELMYPPPYLIGIGNGTQIYVIDPEPCPDSGSRSGGTSGGGSVPLS
LYSGSTSGSGKSSESGSQASTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPE
VKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQ
PREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSDGSFFLYSKLTV
DKSRWQQGNVFSQSVMEALHNHYTQKSLSLSPGK

>QHX46539.1 Sequence 6 from patent US 10414814

MHVAQPAVVLASSRGIASFVCEYASPGKATSVEVTVLRQADSQVTEVCAAHYMMGNELTFLDDSICTGTS
SGNQVNLTIIQGLRAMDTGLYICKVELMYPPPYLIGIGNGTQIYVIDPEPCPDSGSRSGGTSGGGSVPLS
LYSGSTSGSGKSSESGSQASTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPE
VKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQ
PREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSDGSFFLYSKLTV
DKSRWQQGNVFSQSVMEALHNHYTQKSLSLSPGK

>QHX46538.1 Sequence 5 from patent US 10414814

MHVAQPAVVLASSRGIASFVCEYASPGKATRVRTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTS
SGNQVNLTIIQGLRAMDTGLYICKVELMYPPPYLIGIGNGTQIYVIDPEPCPDSGSRSGGTSGGGSVPLS
LYSGSTSGSGKSSESGSQASTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPE
VKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQ
PREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSDGSFFLYSKLTV
DKSRWQQGNVFSQSVMEALHNHYTQKSLSLSPGK

>QHX46537.1 Sequence 4 from patent US 10414814

MHVAQPAVVLASSRGIASFVCEYASPGKATKVRVTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTS
SGNQVNLTIIQGLRAMDTGLYICKVELMYPPPYLIGIGNGTQIYVIDPEPCPDSGSRSGGTSGGGSVPLS
LYSGSTSGSGKSSESGSQASTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPE
VKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQ
PREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSDGSFFLYSKLTV
DKSRWQQGNVFSQSVMEALHNHYTQKSLSLSPGK

>QHX46536.1 Sequence 3 from patent US 10414814

MHVAQPAVVLASSRGIASFVCEYASPGKATSVRVTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTS
SGNQVNLTIIQGLRAMDTGLYICKVELMYPPPYLIGIGNGTQIYVIDPEPCPDSGSRSGGTSGGGSVPLS
LYSGSTSGSGKSSESGSQASTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPE
VKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQ
PREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSDGSFFLYSKLTV
DKSRWQQGNVFSQSVMEALHNHYTQKSLSLSPGK

>QHX46535.1 Sequence 2 from patent US 10414814

MHVAQPAVVLASSRGIASFVCEYASPGKATAVAVTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTS
SGNQVNLTIIQGLRAMDTGLYICKVELMYPPPYLIGIGNGTQIYVIDPEPCPDSGSRSGGTSGGGSVPLS
LYSGSTSGSGKSSESGSQASTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPE
VKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQ
PREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSDGSFFLYSKLTV
DKSRWQQGNVFSQSVMEALHNHYTQKSLSLSPGK

>QHX46534.1 Sequence 1 from patent US 10414814

MHVAQPAVVLASSRGIASFVCEYASPGKATEVRVTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTS
SGNQVNLTIIQGLRAMDTGLYICKVELMYPPPYLIGINGTQIYVIDPEPCPDSGSRSGGTSGGGSVPLS
LYSGSTSGSGKSSEGSGQASTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPE
VKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQ
PREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSGDSFFLYSKLTV
DKSRWQQGNVFCFSVMHEALHNHYTQKSLSLSPGK

>XP_023075089.2 cytotoxic T-lymphocyte protein 4 isoform X2 [Piliocolobus
tephrosceles]

MACLGFQRHKARLNLATRTRPYTLLFSLLFIPVFSKAMHVAQPAVVLANSRGIASFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTSSGNQMNLTIQGLRAMDTGLYICKVELMYPPPY
MGIGNGTQIYVIAKEKKPSYNRGLCENAPNRARM

>XP_023075085.2 cytotoxic T-lymphocyte protein 4 isoform X1 [Piliocolobus
tephrosceles]

MACLGFQRHKARLNLATRTRPYTLLFSLLFIPVFSKAMHVAQPAVVLANSRGIASFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQMNLTIQGLRAMDTGLYICKVELMYPPPY
MGIGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPEPE
CEKQFQPYFIPIN

>XP_023075079.1 T-cell-specific surface glycoprotein CD28 isoform X2
[Piliocolobus tephrosceles]

MPCGLSALIMCLKGMVVVVAVDDGDSQALAGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLH
KGLDSAVEVCVVGNYSQLQVYSKTGFNC DGKLGNESVTFYLQNLVYNQTDIYFCKIEVMYPPPYLDNE
KSNGTIIHVKGKHLCPSPFLPGPSKPFWALVVVGGVLACYSLLVTVAFSIFWMRSKRSRLLHSDYMNMT
RRPGPTRKHYQPYAPPRDFAAYRS

>XP_023075074.1 T-cell-specific surface glycoprotein CD28 isoform X1
[Piliocolobus tephrosceles]

MLRLLLALNLLPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVG
NYSQQLQVYSKTGFNC DGKLGNESVTFYLQNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHL
CPSPLFPGPSKPFWALVVVGGVLACYSLLVTVAFSIFWMRSKRSRLLHSDYMNMTPRRPGPTRKHYQPYA
PPRDFAAYRS

>pdb|6OIL|A Chain A, V-type immunoglobulin domain-containing suppressor of
T-cell activation

FKVATPYSLYVCPGQNVTLTCRLLGPVDKGHDVTFYKTYRSSRGEVQTCSERRPIRQLTFQDLHLHHG
GHQAAQTSHDLAQRHGLESASDHGNSITMRNLTLDSGLYCCLVVEIRHHHSEHRVHGAMELQVQTGK
DAPSNVCVYPSSSQESEQITAHHHHHH

>XP_006205268.1 T-cell-specific surface glycoprotein CD28 [Vicugna pacos]
MTRRSGVSSAHLTLGLLREEGLEPWPTVSTMILRLLLALNFFPSIQVTENKILVKQSPMLVVNNNEVNLS
CKYTYNLSKEFRASLYKGADSAVEVCVSGNYSYQLQFHSSTGFNCNGKLGNETVTFYLRDLVYNQTDI
YFCKIEVMYPPPYIDNEKSNGTIIHVKEKHLCPAPWSPESSKPFWALVVVASILAFYSLLASVALCNCWL
KSKRNRMLQSDYMNMTPRRPGPTRRHYQPYAPARDFAAYRS

>XP_021779078.1 T-cell-specific surface glycoprotein CD28 isoform X2 [Papio
anubis]

MLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVYGNYSQQLQVYSKTGFNC DGKLGNESVTF
YLQNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSP LFPGPSKPFWALVVVGVLACYS
LLVTVAFSIFWMRSKRSRLHSDYMNMTPRRPGPTRKHYQPYAPPRDFAAYRS

>XP_021779077.1 cytotoxic T-lymphocyte protein 4 isoform X2 [Papio anubis]
MACLGFQRHKAQLNLATRTRPYTLLFSLLFIPVFSKAMHVAQPAVVLANSRG IASFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLT IQGLRAMDTGLYICKVELMYPPPY
MGIGNGTQIYVIAKEKKPSHNRGLRENAPNRARM

>XP_021779076.1 cytotoxic T-lymphocyte protein 4 isoform X1 [Papio anubis]
MHVAQPAVVLANSRG IASFVCEYASPGKATEVRVTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTS
SGNQVNLT IQGLRAMDTGLYICKVELMYPPPYMGIGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFY
SFLTAVSLSKMLKKRSPLTTGVYVKMPPTPEPECEKQFQPYFIPIN

>XP_009181099.1 T-cell-specific surface glycoprotein CD28 isoform X1 [Papio anubis]
MPCGLSALIMCLKGMVAVVVAVDGDSQALAGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLH
KGLDSAVEVCVVYGNYSQQLQVYSKTGFNC DGKLGNESVTFYLQNLVYNQTDIYFCKIEVMYPPPYLDNE
KSNGTIIHVKGKHLCPSP LFPGPSKPFWALVVVGVLACYSLLVTVAFSIFWMRSKRSRLHSDYMNMT
RRPGPTRKHYQPYAPPRDFAAYRS

>pdb|6MVL|L Chain L, Antibody Fab fragment light chain
EIVLTQSPGTLSPGERATLSCRASQSVSSYLAWYQQKPGQAPRL LIYGASSRATGIPDRFSGSGSGT
DFTLTISRLEPEDFAVYYCQQYGSSPFTFGPGTKVDIKRTVAAPSVFIFPPSDEQLKSGTASVVCLLNNF
YPREAKVQWKVDNALQSGNSQESVTEQDSKDYSLSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSF
NRGEC

>pdb|6MVL|H Chain H, Antibody Fab fragment heavy chain
EVQLVESGGGLVQPGKSLRLSCAASGFTLEDYAMHWVRQAPGKGLEWVSGIDWNSENIGYADSVKGRFTI
SRDNAKNSLYLQMNSLRTEDTALYYCAKVPGYSGGWIDAEDDWGQGTMTVTVSSASTKGPSVFPLAPSSKS
TSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSLGTQTYICNVNH
KPSNTKVDKRVEPKSCDKT

>pdb|6MVL|A Chain A, V-type immunoglobulin domain-containing suppressor of T-cell activation
AFKVATPYSLYVCPGQNVTLTCRLLGPVDKGHDVTFYKTYWRSSRGEVQTCSERRPIRQLTFQDLHLHH
GGHQAAQTS HDLAQRHGLESASDHHGNFSITMRNLTL LDSGLYCCLVVEIRHHHSEHRVHGAMELQVQTG
KDAPSNCVVYPSSSQDSEQITA AHHHHHH

>XP_021387032.1 T-cell-specific surface glycoprotein CD28 [Lonchura striata domestica]
MLLGILVVLFFIPTADV TENKILVAQHPLLIVANQTATLVCNYTYNGTGKEFRASLQKGT DSSVEVC FIS
WNTTKISSNSNKGFCQGSHDKDKVIFNLWNMNTNQTDIYFCKIEVMYPPPYVYNEKSNGTIVHKETPT
QIQEPQSAIPLWILATVTGILALYSMLITAVSINYWQSKKKHMYRQSDYMNMTPRHPPYQKNKGPSYAP
TRDYTAYRSWQP

>XP_010990053.1 T-cell-specific surface glycoprotein CD28 [Camelus dromedarius]
MTRRSGVSSAHLTLG LLREEGLEPWPTVSTMILRL LLLALNFFPSIQVTENKILVKQSPMLVVNNNEVNLS

CKYTYNLFSEFRASLYKGADSAVEVCVSGNYSYQLQFHSSTGFNCNGKLGNETVTFYLRDLYVNQTDI
YFCKIEVMYPPPYIDNEKSNGTIIHVKEKHLCPAPWSPESSKPFWALVVVASILAFYSLLASVALCNCWL
KSKRNRMLQSDYMNMTPRRPGPTRRHYQPYAPARDFAAAYRS

>QFP15717.1 Sequence 8 from patent US 10370452

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRGIAFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPY
LGIGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPTEPE
CEKQFQPYFIPIN

>QFP15712.1 Sequence 3 from patent US 10370452

MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVY
NYSQQLQVYSKTFGNC DGKLGNESVTFYLQNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHL
CPSPLFPGPSKPFVWL VVVGGVLACYSLLVTVAFIIFWVRSKRSRLLHSDYMNMTPRRPGPTRKHYQPYA
PPRDFAAAYRS

>QF049234.1 Sequence 54 from patent US 10350266

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRGIAFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPY
LGIGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPTEPE
CEKQFQPYFIPIN

>QFN59968.1 Sequence 7 from patent US 10335486

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRGIAFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPY
LGIGNGTQIYVIAKEKKPSYNRGLCENAPNRARM

>QFN59962.1 Sequence 1 from patent US 10335486

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRGIAFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPY
LGIGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPTEPE
CEKQFQPYFIPIN

>QFN47358.1 Sequence 11 from patent US 10323077

MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVY
NYSQQLQVYSKTFGNC DGKLGNESVTFYLQNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHL
CPSPLFPGPSKPFVWL VVVGGVLACYSLLVTVAFIIFWVRSKRSRLLHSDYMNMTPRRPGPTRKHYQPYA
PPRDFAAAYRS

>XP_018877318.1 T-cell-specific surface glycoprotein CD28 isoform X1 [Gorilla
gorilla gorilla]

MPCGLSALIMCPKGMVAVVVAVDDGDSQALAGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLH
KGLDSAVEVCVVYGNYSQQLQVYSKTFGNC DGKLGNESVTFYLQNLVYNQTDIYFCKIEVMYPPPYLDNE
KSNGTIIHVKGKHLCPSPFLFPGPSKPFVWL VVVGGVLACYSLLVTVAFIIFWVRSKRSRLLHSDYMNMT
RRPGPTRKHYQPYAPPRDFAAAYRS

>XP_004033134.1 cytotoxic T-lymphocyte protein 4 isoform X2 [Gorilla gorilla
gorilla]

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRGIAFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPY
LGIGNGTQIYVIAKEKKPSYNRGLCENAPNRARM

>XP_004033133.1 cytotoxic T-lymphocyte protein 4 isoform X1 [Gorilla gorilla gorilla]

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRGIAFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPY
LGIGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPEPE
CEKQFQPYFIPIN

>XP_004033130.1 T-cell-specific surface glycoprotein CD28 isoform X2 [Gorilla gorilla gorilla]

MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVY
NYSQQLQVYSKTFNC DGKLGNESVTFYLQNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHL
CPSPLFPGPSKPFVVLVVVGGVLACYSLLVTVAFIIFWVRSKRSRLHSDYMNMTPRRPGPTRKHYQPYA
PPRDFAAAYS

>XP_010350938.1 cytotoxic T-lymphocyte protein 4 isoform X2 [Rhinopithecus roxellana]

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFSEAMHVAQPAVVLANSRGIAFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPY
MGIGNGTQIYVIAKEKKPSYNRGLCENAPNRARM

>XP_010350936.1 cytotoxic T-lymphocyte protein 4 isoform X1 [Rhinopithecus roxellana]

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFSEAMHVAQPAVVLANSRGIAFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPY
MGIGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPEPE
CEKQFQPYFIPIN

>XP_030709970.1 T-cell-specific surface glycoprotein CD28 [Globicephala melas]

MCPERSKSVVVAADDESGCSGASPAHLTLGLLREEGRKPWPTVSTMIFSLLLALNFFPSIQVAENKILVN
QSPMLVVNNNEVNLSCKYTYNLSKEFRASLYKGVDSAVEVCAVNGNHSLQSTNKEFNCTVNLGNETV
TFYLQDLYVNQTDIYFCKIEVLYPPPYIDNEKSNGTIIHVKEKHLCPAPRSPESKPFWALVVVNGVLAF
YSLLATVALSNCWMKSKRNRMLQSDYMNMTPRRPGPTRKHYQPYAPARDFAAAYS

>SZF06839.1 unnamed protein product [Homo sapiens]

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRGIAFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPY
LGIGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPEPE
CEKQFQPYFIPIN

>XP_022423186.1 T-cell-specific surface glycoprotein CD28 [Delphinapterus leucas]

MCPERSKSVVVAADDESGCSGASPAHLTLGLLREEGRKPWPTVSTMILSLLLALNFFPSIQVAENKILVN
QSPMLVVNNNEVNLSCKYTYNLSKEFRASLYKGVDSAVEVCAVNGNHSLQSTNKEFNCTVNLGNETV
TFYLQDLYVNQTDIYFCKIEVLYPPPYIDNEKSNGTIIHVKEKHLCPAPRSPESKPFWALVVVNGVLAF

YSLLATVALSNCWMKSKRNRMLQSDYMNMTPRRPGPTRKHYPYAPARDFAAAYRS

>KAA0171501.1 hypothetical protein FNF28_00711 [Cafeteria roenbergensis]
MANAIELCRVMEADPDFLGLETGTIEEAAQTLEQVHNVREPPPDSEDAWAVYGEAGSRVDLGAPAA
VLAPAFVWAGSGAAITSCDWSPLDPGLILAGTSDGISSARSALMSVSASPADANYVLASSAELGAAMYS
VLEAGRAVTRLRPNGPTCTRAALFGSGCTFALGSTSGQLFLGSVGQSQRMLQPGAVADGLAAVSDLRVFP
TVGRRHDAQGGTAIVVALTDGTVLAVPELPGPELKATTTPTGTGAPDPLGSAGQGLLLGASTRAAGSEGKA
GGGKAKRGVCWRLHDL SRLVLAGPSPNVASLVQRGVPEKQTKSKPPAPATRRRSGRAAKSGRRGRRRPA
LESSEEEQDEEQSDEDDDDDDYESEGGAREALPEGGSDGEGKDPVAADSAGDAASLVPSMLWRRSALAV
AGGVVGAGEGRTQVVAAGFGDRTVTTLWFLDPL

>NP_037058.1 T-lymphocyte activation antigen CD80 [Rattus norvegicus]
MAYSCQLMQESPLLGFPRRLRFIHLFVLLLVLGLFQISSGIVGQVSKSVREKALLSCDYKFCSEEQSIHRIY
WQKHKDMVLSVISGVPEVWPEYKNRTVYDIANNYSFSLGLILSDRGTYTCVVQRYEGESYVVKHLTTVE
LSVRADFPTPNITESGNPSADIKRITCFASGGFPKPRLSWLENGRELNGINTTISQDPESELYTISQLD
FNNTTYDHFIDCFIEYGDAHVSQNFTWVKPPEDPPDEKQTIPFAWAGSDAVKAIIFFAITVIAVIAAIA
IIIFCITVKFRRCFRRRNEASRETNKNLYIGPVEAAAEQTV

>pdb|1H6E|P Chain P, CYTOTOXIC T-LYMPHOCYTE PROTEIN 4
TTGVYVKMPPT

>pdb|1H6E|A Chain A, CLATHRIN COAT ASSEMBLY PROTEIN AP50
HHHHHHEQKLISEEDLEGIKYRRNELFLDVLESVNLLMSPQGQVLSAHVSGRVVMKSYLSGMPECKFGMN
DKIVIEKQKGKTADETSKSGKQSI AIDDCFTFHQCVRLSKFDSERSISFIPPDGEFELMRYRTTKDIILPF
RVIPLVREVGRTKLEVKVVIKSNFKPSLLAQKIEVRIPTPLNTSGVQVICMKGKAKYKASENAIVWKIKR
MAGMKESQISAEIELLPTNDKKKWARPPISMNFEVFPFAPSGLKVRYLKVFEKPNYSDDHVIKVVRYIGR
SGIYETRC

>QDB28163.1 Sequence 6 from patent US 10300112
MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRGIASFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPPY
LGIGNGTQIYVIDPEPCPDSDFLWILA AVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPE
CEKQFQPYFIPIN

>QDB11288.1 Sequence 149 from patent US 10287362
MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRGIASFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPPY
LGIGNGTQIYVIDPEPCPDSDFLWILA AVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPE
CEKQFQPYFIPIN

>QDB08099.1 Sequence 11 from patent US 10286113
MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVY
NYSQQLQVYSKTFNC DGKLGNESVTFYLQNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHL
CPSPLFPGPSKPFVVLVVVGGVLACYSLLVTVAFIIFWVRSKRSRLHSDYMNMTPRRPGPTRKHYPYA
PPRDFAAAYRS

>QDA90687.1 Sequence 14 from patent US 10266592
MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVY

NYSQQLQVYSKTFNC DGKLGNESVTFYLQNLYVNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHL
CPSPLFPGPSKPFVWL VVVGGVLACYSLLVTVAFIIFWVRSKRSRLHSDYMNMTPRRPGPTRKHYQPYA
PPRDFAA YRS

>XP_021029151.1 cytotoxic T-lymphocyte protein 4 isoform X2 [Mus caroli]
MACLGLRRYKAQLQLPSRTWPFVALLTLFIPVFSEAIQVTQPSVVLASSHGVASFPCEYSPSHNTDEVRV
TVLRQTNDQVTEVCATTFTEKNTVGFLDYPFCSGTFNESRVNLTIQGLRAADTGLYLCKVELMYPPPYFV
GMGNGTQIYVIAKEKKSSYNRGLCENAPNRARM

>XP_021029147.1 cytotoxic T-lymphocyte protein 4 isoform X1 [Mus caroli]
MACLGLRRYKAQLQLPSRTWPFVALLTLFIPVFSEAIQVTQPSVVLASSHGVASFPCEYSPSHNTDEVRV
TVLRQTNDQVTEVCATTFTEKNTVGFLDYPFCSGTFNESRVNLTIQGLRAADTGLYLCKVELMYPPPYFV
GMGNGTQIYVIDPEPCPDSDFLLWILVAVSLGLFFYSFLVTAVSLSKMLKKRSPLTTGVYVKMPPTPEC
EKQFQPYFIPIN

>XP_029081575.1 T-cell-specific surface glycoprotein CD28 [Monodon monoceros]
MCPERSKSVVVAADDESGCSGASPAHLTLGLLREEGRKPWPTVSTMILSLLLALNFFPSIQVAENKILVN
QSPMLVNNNEVNLSCKYTYNLSKEFRASLYKGVDSAVEVCAVNGNHSKSLQSTNKEFNCTVNLGNETV
TFYLQDLYVNQTDIYFCKIEVLYPPPYIDNEKSNGTIIHVKEKHLCPAPRSPESSKPFWALVVVNGVLAF
YSLLATVALSNCWMKSKNRNMLQSDYMNMTPRRPGPTRKHYQPYAPARDFAA YRS

>NP_001292881.1 cytotoxic T-lymphocyte protein 4 precursor [Cercopithecus atys]
MACLGFQRHKARLNLATRTRPYTLLFSLFIPVFSKAMHVAQPAVVLANSRGIASFVCEYASPGKATEVR
VTVLQRADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPY
MGIGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPE
CEKQFQPYFIPIN

>NP_001292846.1 cytotoxic T-lymphocyte protein 4 precursor [Macaca nemestrina]
MACLGFQRHKARLNLATRTRPYTLLFSLFIPVFSKAMHVAQPAVVLANSRGIASFVCEYASPGKATEVR
VTVLQRADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPY
MGIGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPE
CEKQFQPYFIPIN

>XP_010175011.1 T-cell-specific surface glycoprotein CD28 [Antrostomus
carolinensis]
MFLGILVVLCFIPAADV TENKILVAQRPLLIVANKTATLVCNYTYNGTGKEFRASLHKGTDSAVEVCFIS
WNMTKISSSSNKEFNCCQGIHDKDKVIFNLWNMSASQTDIYFCKIEAMYPPPYVYNEKSNGTVIHVKETPI
QTQEPQSAIPLWIMVAVIGVLAFYSMVITMVFINYWQSKSKKNKYHQSDYMNMTPRHPPYQKNKGYPYAP
TRDYTAYRSWQP

>XP_014966209.1 cytotoxic T-lymphocyte protein 4 isoform X2 [Macaca mulatta]
MACLGFQRHKARLNLATRTRPYTLLFSLFIPVFSKAMHVAQPAVVLANSRGIASFVCEYASPGKATEVR
VTVLQRADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPY
MGIGNGTQIYVIAKEKKPSHNRLCENAPNRARM

>XP_014966208.1 cytotoxic T-lymphocyte protein 4 isoform X1 [Macaca mulatta]
MHVAQPAVVLANSRGIASFVCEYASPGKATEVRVTVLQRADSQVTEVCAATYMMGNELTFLDDSICTGTS
SGNQVNLTIQGLRAMDTGLYICKVELMYPPPYMGIGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFY

SFLLTAVSLSKMLKKRSPLTTGVYVKMPTEPECEKQFQPYFIPIN

>XP_014966207.1 T-cell-specific surface glycoprotein CD28 isoform X1 [Macaca mulatta]

MPCGLSALIMCLKGMVAVVVAVDDGDSQALAGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLH
KGLDSAVEVCVVYGNYSQQLQVYSKTGFNC DGKLGNESVTFYLNLYVNQTDIYFCKIEVMYPPPYLDNE
KSNGTIIHVKGKHLCPSPFLPGPSKPFWALVVVGVLACYSLLVTVAFCIFWMRSKRSRLLHSDYMNMTF
RRPGPTRKHYQPYAPPRDFAAYRS

>XP_028621569.1 cytotoxic T-lymphocyte protein 4 isoform X2 [Grammomys surdaster]

MACLGVQRSAVLQLSSRIWPFVALLGLLFIPIFCEAIQVNQPSVVLASSHGVASFPCEYSSSHNTDEVR
VTVLRQTNDQVTEVCATTFTAKNTVGFLDDPFCSGTFNESRVNLTIQGLRAADTGLYFCKVELMYPPPYF
VGMGNGTQIYVIAKEKKSSYNRGLCENAPNRARM

>XP_028621568.1 cytotoxic T-lymphocyte protein 4 isoform X1 [Grammomys surdaster]

MACLGVQRSAVLQLSSRIWPFVALLGLLFIPIFCEAIQVNQPSVVLASSHGVASFPCEYSSSHNTDEVR
VTVLRQTNDQVTEVCATTFTAKNTVGFLDDPFCSGTFNESRVNLTIQGLRAADTGLYFCKVELMYPPPYF
VGMGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFYSFLVTAVSLSKMLKKRSPLTTGVYVKMPTEPE
CEKQFQPYFIPIN

>QCB09643.1 Sequence 137 from patent US 10233214

MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVYG
NYSQQLQVYSKTGFNC DGKLGNESVTFYLNLYVNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHL
CPSPLFPGPSKPFVWLVVVGVLACYSLLVTVAFIIFWVRSKRSRLLHSDYMNMTPRRPGPTRKHYQPYA
PPRDFAAYRS

>VFV37133.1 t-cell-specific surface glycoprotein cd28 [Lynx pardinus]

MTETLRLWQVHLQLPSHFGLLGEGLPWPVTSTMILRLLLALNFFPSIQVTENKILVKQLPRLVVYNNH
VNLSCYTHNLFSEFRASLYKGVDSAVEVCVVNGNYSHQPQFYSSTGFDCDGKLGNETVTFYLRNLFVN
QTDIYFCKIEVMYPPPYIDNEKSNGTIIHVKEKHLCPAQLSPESKPFWALVVVGILGFYSLLATVALG
ACWMKTKRSRILQSDYMNMTPRRPGPTRRHYQPYAPARDFAAYRS

>BBJ06441.1 EBNA1 protein, partial [Human gammaherpesvirus 4]

EYHQEGGPDGEPDMPPGVIEQGPADDPGEGPSTGPRGQGDGGRKKGGWFGKHRGQGGSNQKFENIADGL
RTL LARCHVERTTDEGTWVAGVFVYGGSKTSLYNLRGIALAIPQCRLTPLSRLPFGMAPGPGPQGPLR
ESIVCYFIVFLQTHIFAEGLKDAIKDLVMPKPAPT CNIKATVCSFDDG

>TEA39819.1 hypothetical protein DBR06_SOUSAS4610054 [Sousa chinensis]

MCPERSKSVVVAADDESGCSGASPAHLTLGLLGEEGRKPWPTVSTMILSLLLALNFFPSIQVAENKILVN
QSPMLVVNNNEVNLSCKYTYNLFSEFRASLYKGVDSAVECAVNGNHKSLQSTNKEFNCTVNLGNETV
TFYLDLYVNQTDIYFCKIEVLYPPPYIDNEKSNGTIIHVKEKHLCPAPRSPESKPFWALVVVNGVLAF
YSLLATVALSNCWMKSKRNRMLQSDYMNMTPRRPGPTRKHYQPYAPARDFAAYRS

>XP_007113471.1 T-cell-specific surface glycoprotein CD28 [Physeter catodon]

MTSQVAQVRLQLTSHLGFSGRGGSPGPFSTMILRLLLALNFFPSIQVAENKILVNQSPMLVVNNNEVN
LSCKYTYNLFSEFRASLYKGVDSAVECAVNGNHKSLQSTNKEFNCTVNLGNETVTFYLDLYVNQTD

IYFCKIEVLPPPYIDNEKSNGTIIHVKEKHLCPAPRSPESKPFWALVVVNGVLTIFYSLLATVALSNCW
MKSkrNRRLQSDYMNMTPrRPGPTRKHYPYAPARDFAAyRS

>QBE40271.1 Sequence 2 from patent US 10196445

MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCYSYNLFsREFRASLHKGLDSAVEVCVVYg
NYSQQLQVYSKTGFNCdGKLGNESVTFYlQNLyVnQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHL
CPSPLFPGPSKPFwLVVVGGVLACYSLLVTVAfIIFWVRSKRSRLHSDYMNMTPrRPGPTRKHYPYA
PPRDFAAyRS

>QBE40270.1 Sequence 1 from patent US 10196445

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRGIASFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPY
LGIGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPTEPE
CEKQFQPYFIPIN

>QBD00431.1 Sequence 54 from patent US 10166273

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRGIASFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPY
LGIGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPTEPE
CEKQFQPYFIPIN

>QBC77531.1 Sequence 5 from patent US 10155800

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRGIASFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPY
LGIGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPTEPE
CEKQFQPYFIPIN

>XP_028008836.1 T-cell-specific surface glycoprotein CD28 [Eptesicus fuscus]

MILRLLLALNFFPSIQVAENKILVKQSPMLVVYNNAVNLSCYTYNLFsKEFRASLYKGADSAVEVCVVn
GNYSHQLQFRSKTGFHCDGKLGNETVTFYlWNLfVnQTDIYFCKIEVMYPPPYIDNEKSNGTIIHVKENH
HCPAHRTPESKPFWALVVAVGVLALYSLLVTVALFTYWMKSkrNRVLQSDYLNMTPrRLGPTRRHYPY
APSRDFAAyRS

>XP_007190638.1 T-cell-specific surface glycoprotein CD28 [Balaenoptera
acutorostrata scammoni]

MCPERSKSVVAADDESGCSGASPAHLTLGLLREEGREPWPTVSTMILRLVLALNFFPSIQVAENKILVN
QSPMLVVNNNEVNLSCYTYNLFsKEFRASLYKGVDSAVEVCAVNGNHsKSLQSTNKEFNCTVNLGNETV
TFYlQDLYVnQTDIYFCKIEVLPPPYIDNEKSNGTIIHVKEKHLCPAPRSPESKPFWALVVVNGVLAF
YSLLATVALSNCWMKSkrNRMLQSDYMNMTPrRPGPTRKHYPYVPARDFAAyRS

>XP_027967973.1 T-cell-specific surface glycoprotein CD28 isoform X2 [Eumetopias
jubatus]

MILRLLLALNFFPSIQVTENKILVKQLPRLVVYNNEVNLSCYTHNLFsKEFRASLYKGVDSAVEVCVVn
GNYSHQPQFYSSSTGFDCDgKLGNETVTFYlRKLfVnQTDIYFCKIEVMYPPPYIDNEKSNGTIIHVKEKH
LCPAQPTPESKPFWVLVVVGGVLVFYSLLVTVALCACWMKNKRSRILQSDYMNMTPrRPGPTRRHYPY
APARDFAAyRS

>XP_027967972.1 T-cell-specific surface glycoprotein CD28 isoform X1 [Eumetopias

jubatus]

MASSNVIDFSKALHFPWRALLFLREAQKAGRWLAFNKNSSAKQENKILVKQLPRLVVYNNEVNLSCKYTH
NLFSKEFRASLYKGVDSAVEVCVVNGNYSHQPQFYSSSTGFDCDGKLGNETVTFYLRKLFVNQTDIYFCKI
EVMYPPPYIDNEKSNGTIIHVKEKHLCPAQTPESSKPFWVLVVVGGLVFYSLLVTVLALCACWMKNKRS
RILQSDYMNMTPRRPGPTRRHYQPYAPARDFAAAYRS

>XP_027967971.1 T-cell-specific surface glycoprotein CD28 isoform X1 [Eumetopias
jubatus]

MASSNVIDFSKALHFPWRALLFLREAQKAGRWLAFNKNSSAKQENKILVKQLPRLVVYNNEVNLSCKYTH
NLFSKEFRASLYKGVDSAVEVCVVNGNYSHQPQFYSSSTGFDCDGKLGNETVTFYLRKLFVNQTDIYFCKI
EVMYPPPYIDNEKSNGTIIHVKEKHLCPAQTPESSKPFWVLVVVGGLVFYSLLVTVLALCACWMKNKRS
RILQSDYMNMTPRRPGPTRRHYQPYAPARDFAAAYRS

>XP_027819684.1 cytotoxic T-lymphocyte protein 4 isoform X1 [Ovis aries]

MACSGFQSHGTWRTSRTWPCTALFFLLFIPVFSKGMNVTQPPVVLASSRGVASFTCEYESSGKADEVVVT
VLRKAGIQVTEVCAGTYMVEDELTFDDSSCIGTSRGNKVNLTIQGLRAMDTGLYVCKVELMYPPPYMG
EGNGTQIYVIAKEKKPSYYRGLRENAPNRARM

>pdb|5E5M|H Chain H, CTLA-4 nanobody

MAQVQLVESGGGLAQPGGSLRLSCAASGSTISSVAVGWYRQTPGNQREWVATSSSTSSTATYADSVKGRF
TISRDNAKNTIYLMNSLKPEDTAVYYCKTGLTNWGRGTQVTVSSGGLPETGGHHHHHH

>pdb|5E5M|G Chain G, Cytotoxic T-lymphocyte protein 4

IQVTQPSVVLASSHGVASFPCEYSPSHNTDEVVTVLRQTNDQMTEVCATTFTEKNTVGFLDYPFCSGTF
NESRVNLTIQGLRAVDGTGLYLCKVELMYPPPYFVGMGNGTQIYVIDP

>pdb|5E5M|F Chain F, CTLA-4 nanobody

MAQVQLVESGGGLAQPGGSLRLSCAASGSTISSVAVGWYRQTPGNQREWVATSSSTSSTATYADSVKGRF
TISRDNAKNTIYLMNSLKPEDTAVYYCKTGLTNWGRGTQVTVSSGGLPETGGHHHHHH

>pdb|5E5M|E Chain E, Cytotoxic T-lymphocyte protein 4

IQVTQPSVVLASSHGVASFPCEYSPSHNTDEVVTVLRQTNDQMTEVCATTFTEKNTVGFLDYPFCSGTF
NESRVNLTIQGLRAVDGTGLYLCKVELMYPPPYFVGMGNGTQIYVIDP

>pdb|5E5M|D Chain D, CTLA-4 nanobody

MAQVQLVESGGGLAQPGGSLRLSCAASGSTISSVAVGWYRQTPGNQREWVATSSSTSSTATYADSVKGRF
TISRDNAKNTIYLMNSLKPEDTAVYYCKTGLTNWGRGTQVTVSSGGLPETGGHHHHHH

>pdb|5E5M|C Chain C, Cytotoxic T-lymphocyte protein 4

IQVTQPSVVLASSHGVASFPCEYSPSHNTDEVVTVLRQTNDQMTEVCATTFTEKNTVGFLDYPFCSGTF
NESRVNLTIQGLRAVDGTGLYLCKVELMYPPPYFVGMGNGTQIYVIDP

>pdb|5E5M|B Chain B, CTLA-4 nanobody

MAQVQLVESGGGLAQPGGSLRLSCAASGSTISSVAVGWYRQTPGNQREWVATSSSTSSTATYADSVKGRF
TISRDNAKNTIYLMNSLKPEDTAVYYCKTGLTNWGRGTQVTVSSGGLPETGGHHHHHH

>pdb|5E5M|A Chain A, Cytotoxic T-lymphocyte protein 4

IQVTQPSVVLASSHGVASFPCEYSPSHNTDEVVTVLRQTNDQMTEVCATTFTEKNTVGFLDYPFCSGTF

NESRVNLTIIQGLRAVDLTGLYLCKVELMYPPPYFVGMGNGTQIYVIDP

>pdb|5E03|A Chain A, CTLA-4 nanobody

MAQVQLVESGGGLAQPGGSLRLSCAASGSTISSVAVGWYRQTPGNQREWVATSSSTSSTATYADSVKGRF
TISRDNAKNTIYLQMNSLKPEDTAVYYCKTGLTNWGRGTQVTVSSGGLPETGGHHHHHH

>XP_006153139.2 T-cell-specific surface glycoprotein CD28 isoform X1 [Tupaia chinensis]

MMFGLLLALHFFLSIQVTENKILVTQLPMLVANNNAVNLSCYTYDLFSKEFRASLYKGVDSAMEVCCVS
GNYSHQLQFHSNTGFHCDGKLSNETVTFSLWNLYVNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKEKN
NCSGPQLIEYSKPFWALTVASGILAFYGLLVTFALFAYWMKNKNNRLLQSDYMNMTPRRPGPTRKHYPY
APARDFAAAYRS

>XP_005442995.1 T-cell-specific surface glycoprotein CD28 [Falco cherrug]

MLLGILVVLCFIPTADV TENKILVAQHPFLTVANKTATLVCNYTYNGTGKEFRASLHKGTNSAVEVCFIS
WNTTKISSNSNKEFNCEGIHDKDKVIFNLWNMNANQTDIYFCKIEAMYPPPYVYNEKSNGTVIHVKETPI
QTQEPQSEMSLWIMVAVAGVLTFYSMLITTVFINHWQKSCKKNMYHQSDYMNMTPRHPPYQKNKGYPYAP
TRDYTAYRSWQP

>XP_005237074.1 T-cell-specific surface glycoprotein CD28 [Falco peregrinus]

MLLGILVVLCFIPTADV TENKILVAQHPFLTVANKTATLVCNYTYNGTGKEFRASLHKGTNSAVEVCFIS
WNTTKISSNSNKEFNCEGIHDKDKVIFNLWNMNANQTDIYFCKIEAMYPPPYVYNEKSNGTVIHVKETPI
QTQEPQSEMSLWIMVAVAGVLTFYSMLITTVFINHWQKSCKKNMYHQSDYMNMTPRHPPYQKNKGYPYAP
TRDYTAYRSWQP

>XP_012952396.1 T-cell-specific surface glycoprotein CD28 [Anas platyrhynchos]

MLLGILVVLCFIPAAADV TENKILVAQHPLLVANKTANLVCNYSYNGTGKEFRASLHKGTNSAVEVCFIS
WNKTKSSNSNKEFNCCGTFYEDKVIFNLWNMNANQTDIYFCKIEAMYPPPYVYNEKSNGTVIHVKETPV
QTQEPQSAISYWMAVAVTGLLAFYSILITAIFISYWQKSCKKNRYHQSDYMNMTPRHPPYQKNKGYPYAP
TRDYTAYRSWQP

>AZL38889.1 Sequence 87 from patent US 10144779

MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCCVYG
NYSQQLQVYSKTFNCDGKLGNESVTFYLQNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHL
CPSPLFPGPSKPFVVLVVVGGVLACYSLLVTVAFIIFWVRSKRSRLLHSDYMNMTPRRPGPTRKHYPYA
PPRDFAAAYRS

>AZL38880.1 Sequence 77 from patent US 10144779

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRGIASFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIIQGLRAMDTGLYICKVELMYPPPY
LGIGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPEPE
CEKQFQPYFIPIN

>AZK23407.1 Sequence 2 from patent US 10124023

MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCCVYG
NYSQQLQVYSKTFNCDGKLGNESVTFYLQNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHL
CPSPLFPGPSKPFVVLVVVGGVLACYSLLVTVAFIIFWVRSKRSRLLHSDYMNMTPRRPGPTRKHYPYA
PPRDFAAAYRS

>XP_026979293.1 T-cell-specific surface glycoprotein CD28 [*Lagenorhynchus obliquidens*]

MCPERSKSVVVAADDESGCSGASPAHLTLGLLREEGRKPWPTVSTMIFSLLLALNFFPSIQVAENKILVN
QSPMLVVNNNEVNLSCKYTYNLFKSKEFRASLYKGVDSAVEVCAVNGNHSKSLQSTNKEFNCTVNLGNETV
TFYLQDLYVNQTDIYFCKIEVLYPPPYIDNEKSNGTIIHVKEKHLCPAPRSPESKPFWALVVVNGVLAF
YSLLATVALSNCWMKSKRNRMLQSDYMNMTPRRPGPTRKHYQPYAPARDFAAYS

>XP_014929637.1 T-cell-specific surface glycoprotein CD28 [*Acinonyx jubatus*]

MTETLRLWQVHLQLPSHFGLLGEGLPWPTVSTMILRLLLALNFFPSIQVTENKILVKQLPRLVVYNN
VNLSCKYTHNLFKSKEFRASLYKGVDSAVEVCVNGNYSHQPQFYSSGFDGKLGNETVTFYLRNLFVN
QTDIYFCKIEVMYPPPYIDNEKSNGTIIHVKEKHLCPAQLSPESKPFWALVVVGILGFYSLLATVALG
ACWMKTKRSRILQSDYMNMTPRRPGPTRRHYQPYAPARDFAAYS

>RMC18477.1 hypothetical protein DUI87_04366 [*Hirundo rustica rustica*]

MLLGILVVLCFIPTADV TENKILVAQHPLLVANQTATLVCNYTYNGTGKEFRASLHKGTDSSVEVCFIS
WNTTKISSNSNKEFNCQGNHDKDKVIFNIWNMNANQTDIYFCKIEVMYPPPYVYNEKSNGTVIHVKETPT
QIQEPQSAIPLWILASVIGILALYSMLITAVFINYWQSKKNIYHQSDYMNMTARHPPYQKNKGYPYAP
TRDYTAYRSWQP

>XP_026709069.1 T-cell-specific surface glycoprotein CD28 [*Athene cunicularia*]

MLPGILVVLCFIPAADV TENKILVAQRPLLVANKTATLVCNYTYNGTGKEFRASLHKGTDSSVEVCFIS
WNMTKISSNSNKEFNCQGIHDKDKVIFNLWNMNANQTDIYFCKIEAMYPYVYNEKSNGTVIHVKETPI
QTQEPQSAVPLWIMVAVTGVLAFYSMLITAVFINYWQSKKSMYHQSDYMNMTPRHPPYQKNKGYPYAP
TRDYTAYRSWQP

>RLW01096.1 hypothetical protein DV515_00008331 [*Erythrura gouldiae*]

MLLGILVVLFFIPTADV TENKILVAQHPLLVANQTATLVCNYTYNGTGKEFRASLHKGTDSSVEVCFIS
WNTTKISSNSNKGFCQGSNDKDKVIFNLWNMNNTQTDIYFCKIEVMYPPPYVYNEKSNGTVIHVKETPI
QIQEPQSAIPLWILATVTGILALYSMLITAVFINYWQSKKHHMYHQSDYMNMTPRHPPYQKNKGYPYAP
TRDYTAYRSWQP

>NP_001277851.1 programmed cell death protein 1 precursor [*Bubalus bubalis*]

MGTPRALWPLVWAVLQLGCWPGWLEASSRPWSALTFSPARLVVPEGANATFTCSFSSKPERFVLNWYRK
SPSNQMDKLAAPEDRSQPSRDRRFRVTPLPNGQEFHMSIVAAQRNDSGVYFCGAIYLPRTQINESHSA
ELVVTEAVLEPPTEPPSPQPRPEGQMQLVIGVTSVLLGVLLLLPLIWVLAAVFLRATRGGCARRSQDQP
PKEGSPSPPAVTVDYGELDFQWREKTPEPAAPCVPEQTEYATIVFPGRRASADSPQGPWPLRTEDGHCSW
PL

>NP_001277791.1 cytotoxic T-lymphocyte protein 4 precursor [*Bubalus bubalis*]

MACSGFQSHGTWRTSRTWPCTALFFLLFIPVFSKGMNVTQPPVVLASSRGVASFSCEYESSGKADEVRT
VLREAGSQVTEVCAGTYMVEDELTFDDSTCIGTSRGNKVNLTIQGLRAMDTGLYVCKVELMYPPPYVVG
IGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFYSFLITAVSLSKMLKKRSPLTTGVYVKMPTEPECE
KQFQPYFIPIN

>NP_001277846.1 programmed cell death 1 ligand 1 precursor [*Bubalus bubalis*]

MRIYSVLTFMAYCCLLKAFITITVSKDLYVVEYGSNVTLECRFPVDKQLNLLVLVYVWEMEDKKIIQFVNG
KEDPNVQHSSYHGRAQLLKDQLFLGKAALQITDVKLQDAGVYCCCLISYGGADYKRITLKVNAKYRKIYHT

ISVDPVTSEHELTCQAEGYPEADVIWTSSDHQVLNGKTSITSSKKEEKL FNVSTL RINTTADKIFYCTF
RRLGHEENNTAELVIPEPYLDPAKKR NHLVTLGALFLFLHVT LAVVFCLKRDVRMMDVEKCGTRDMNSKQ
QNATQFEET

>XP_005484198.1 T-cell-specific surface glycoprotein CD28 [Zonotrichia albicollis]

MLLGILVVLFFIPTADV TENKILVAQHPLLVSNQTATLVCNYTYNGTGKEFRASLHKGTDSSVEVCFIS
WNV TNIRSNSTKEFNCQGDHDKDKVIFNLWNMNANQTDIYFCKIEVMYPPPYVYNEKSNGTVIHVKETPI
QIQEPQSTIPLWILATVTGILALYSMLITAGFFNYWQKS KRLYHQSDYMNMTPRHPPYKNKGYP SYAPT
RDYTAYRSWQP

>AYI37471.1 Sequence 41 from patent US 10046047

MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCV VYG
NYSQQLQVYSKTGFNC DGKLGNESVTFYLQNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHL
CPSPLFPGPSKPFWVLVVVGVLACYSLLVTVAFIIFWVR SKRSRLLHSDYMNMTPRRPGPTRKHYPYA
PPRDFAA YRS

>AYI07650.1 Sequence 176 from patent US 10023626

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRG IASFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLT IQGLRAMDTGLYICKVELMYPPPY
LGIGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPTEPE
CEKQFQPYFIPIN

>AYI07649.1 Sequence 175 from patent US 10023626

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRG IASFVCEYASPGKATEVR
VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLT IQGLRAMDTGLYICKVELMYPPPY
LGIGNGTQIYVIAKEKKPSYNRGLCENAPNRARM

>AYI07607.1 Sequence 133 from patent US 10023626

MPCGLSALIMCPKGMVAVVVAVDDGDSQALAGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLH
KGLDSAVEVCV VYGNYSQQLQVYSKTGFNC DGKLGNESVTFYLQNLVYNQTDIYFCKIEVMYPPPYLDNE
KSNGTIIHVKGKHL CPSPLFPGPSKPFWVLVVVGVLACYSLLVTVAFIIFWVR SKRSRLLHSDYMNMT
RRPGPTRKHYPYAPPRDFAA YRS

>AYI07604.1 Sequence 130 from patent US 10023626

MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCV VYG
NYSQQLQVYSKTGFNC DGKLGNESVTFYLQNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHL
CPSPLFPGPSKPFWVLVVVGVLACYSLLVTVAFIIFWVR SKRSRLLHSDYMNMTPRRPGPTRKHYPYA
PPRDFAA YRS

>XP_026250393.1 T-cell-specific surface glycoprotein CD28 [Urocitellus parryii]

MIFFPSLENKILVKQSPRLEVYNNEVNLSCKYTYNLSKEFRASLYKGVDSAVEVCV VNGNFHQQLQFYS
HTGFNC DGKLGNETVTFYLRNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTVIHVKENN ICPGVPSPEP
KPFWTLVVL SGLGIYSLLSTMLLCYLWTKRQRTRLLQSDYMNMTPRRPGPTRKHYPYAPARDFAA YRP

>XP_025957658.1 T-cell-specific surface glycoprotein CD28 [Dromaius novaehollandiae]

MLLGILVALCFLPAAHATENKILVAQHPLLTVENKTATLVCNYTYNGTGKEFRASLHKGTD SAAEVCFVS

WNMTKISSNSNKEFNCKGIHDKDKVIFKLWNMTANQTDIYFCKIEVMYPPPYVYNEKSNGTVIHVTETPI
 QIQEPQSASSYWIMVAVTGVLAFYSTLITAVFINYWQKSKEKMYHQSDYMNMTPRHPPYQKNKGYPYAP
 TRDYTAYRSWQP

```
[30]: #after research, fetch and write to file
CTLA4_id=record["IdList"]
handle = Entrez.efetch(db="protein", id=', '.join(CTLA4_id), rettype="fasta",
    ↪ retmode="text")

file = "/Users/zunqiuwang/Desktop/CTLA-4 FASTA.txt"
with open(file, 'w') as f:
    f.write(handle.read())
    f.close()
```

```
[31]: #SeqIO parse file
CTLA4_record = SeqIO.parse("/Users/zunqiuwang/Desktop/CTLA-4 FASTA.txt",
    ↪ 'fasta')
for x in CTLA4_record:
    print(x.id)
    print(x.description)
    print(x.seq)
```

XP_028712213.1
 XP_028712213.1 cytotoxic T-lymphocyte protein 4 [Peromyscus leucopus]
 MACLGVPCKAPLQLASRNWPFVLLACLSIPTFSKAIHVTQPSVVLASSHGVASFSCEYTSSHNTDEV RVTVLRQTSDQ
 MMTEVCASTFTMKNKLGFLDDPFCSGTFNESHVNLTIQGLRAADTGLYFCKVELMYPPPYFVGMGNGTQIYVIDPEPCPD
 SDVLLWILAAVSSGLFFYSFLITAVSLSKMLRKRSP LTTGSM

NP_001240779.1
 NP_001240779.1 V-set domain-containing T-cell activation inhibitor 1 isoform 3
 [Homo sapiens]
 MASLGQILFWSIISIILLAGAIALIIGFGISAFSMPEVNV DYNASSETLRCEAPRWFPQPTVVWASQVDQG ANFSEVSN
 TSFELNSENVTMKVSVLYNVTINNTYSCMIENDIAKATGDIKVTESEIKRRSHLQLLNSKASLCVSSFFAISWALLPLS
 PYLMLK

NP_001240778.1
 NP_001240778.1 V-set domain-containing T-cell activation inhibitor 1 isoform 2
 [Homo sapiens]
 MFRGRTAVFADQVIVGNASRLKNVQLTDAGTYKCYIITSKGKGNANLEYKTGAFSMPEVNV DYNASSETLRCEAPRWFP
 QPTVVWASQVDQG ANFSEVSN TSFELNSENVTMKVSVLYNVTINNTYSCMIENDIAKATGDIKVTESEIKRRSHLQLL
 SKASLCVSSFFAISWALLPLSPYLMLK

NP_078902.2
 NP_078902.2 V-set domain-containing T-cell activation inhibitor 1 isoform 1
 precursor [Homo sapiens]
 MASLGQILFWSIISIILLAGAIALIIGFGISGRHSITVTTVASAGNIGEDGILSCTFEPDIKLSDIVIQWLKEGVLGLV
 HEFKEGKDELSEQDEMFRGRTAVFADQVIVGNASRLKNVQLTDAGTYKCYIITSKGKGNANLEYKTGAFSMPEVNV DYN
 ASSETLRCEAPRWFPQPTVVWASQVDQG ANFSEVSN TSFELNSENVTMKVSVLYNVTINNTYSCMIENDIAKATGDIKV
 TESEIKRRSHLQLLNSKASLCVSSFFAISWALLPLSPYLMLK

NP_115979.3

NP_115979.3 lysine-specific demethylase 2B isoform a [Homo sapiens]

MAGPQMGGSAEDHPPRKRHAAEKQKKKTVIYTKCFEFESATQRPIDRQRYDENEDLSDVEEIVSVRGFSLEEKLRSQLYQ
GDFVHAMEGKDFNYEYVQREALRVPLIFREKDGLGIKMPDPDFTVRDVKLLVGSRRLLVDMVNTQKGTEMSMSQFVRY
ETPEAQRDKLYNVISLEFSHTKLEHLVKRPTVVDLVDWVDNMWPQHLKEKQTEATNAIAEMKYPKVKKYCLMSVKGCFD
FHIDFGGTSVWYHVFRRGGKIFWLIPPTLHNLALYEEWVLSGKQSDIFLGDRVERCQRIELKQGYTFFIPSGWIHAVYTPV
DSL VFGGNILHSFNVPMLRIYEIEDRTRVQPKFRYPFYEMCWYVLERYVYCVTQRSHLTQEYQRESMLIDAPRKPSID
GFSSDSWLEMEEEACDQQPQEEEEKDEEGEGRDRAPKPPTDGSTSTPSEDQEALGKKPKAPALRFLKRTLSENESES
VKSTTLAVDYPKTPTGSPATEVSAKWTHLTEFELKGLKALVEKLESLPENKKCVPEGIEDPQALLEGVKNVLKEHADDDP
SLAITGVPVVTWPKKTPKNRAVGRPKGKLGPAVAVKLAANRTTAGARRRRTRCRKCEACLRTECGECHFCCKDMKKFGGPG
RMKQSCIMRQCIAPVLPHTAVCLVCGEAGKEDTVEEEEGKFNLMLECSICNEIIHPGCLKIKESEGVVNDLPNCWEC
KCNHAGKTGKQKRGPGFKYASNLPGSLLKEQKMNDRNKEGQEPAKRRSECEEAPRRRSDEHSSKKVPPDGLLRKSDDVHL
RKKRKYKPKQELSGRKRASSLQTSPGSSSHLSPRPPLGSSLSPPWRRSSLTFFQQLKPGKEDKLFRRKRSWKNADRM
LANKPLRRFKQPEDELPEAPPKTRESHRSSSPTAGPSTEGAEGPEKKKKVMRRKRRLPNKELSRELSKELNHEIQR
TENSLANENQQPIKSEPESEGEKPPGICERPHRFSGKGLNGTPRELRLHQLGPSLRSPPRVISRPPPSVSPPKCIQMER
HVIRPPPISPPDLSPLDDGAHVHREVWMAVFSYLSHQDLVCVMRCRTWNRWCCDKRLWTRIDLNHCKSITPLMLSG
IIRRPVSLDLSWTNISKKQLSWLINRLPGLRDLVLSGCSWIAVSALCSSSCPLLRLTLDVQWVEGLKDAQMRDLSPTD
NRPGQMDNRSLRNIVELRLAGLDITDASRLIIRHMPLLSKLHLSYCNHVTQDSINLLTAVGTTTRDSLTEINLSDCNK
VTDQCLSFFKRCGNICHIDLRYCKQVTKEGCEQFIAEMSSVSQVFGQVEEKLQKLS

NP_001005366.1

NP_001005366.1 lysine-specific demethylase 2B isoform b [Homo sapiens]

MEAEKDSGRRLRPIDRQRYDENEDLSDVEEIVSVRGFSLEEKLRSQLYQGDFVHAMEGKDFNYEYVQREALRVPLIFREK
DGLGIKMPDPDFTVRDVKLLVGSRRLLVDMVNTQKGTEMSMSQFVRYETPEAQRDKLYNVISLEFSHTKLEHLVKRPT
VVDLVDWVDNMWPQHLKEKQTEATNAIAEMKYPKVKKYCLMSVKGCFDTHIDFGGTSVWYHVFRRGGKIFWLIPPTLHNL
ALYEEWVLSGKQSDIFLGDRVERCQRIELKQGYTFFIPSGWIHAVYTPVDSL VFGGNILHSFNVPMLRIYEIEDRTRVQ
PKFRYPFYEMCWYVLERYVYCVTQRSHLTQEYQRESMLIDAPRKPSIDGFSSDSWLEMEEEACDQQPQEEEEKDEEGEG
RDRAPKPPTDGSTSTPSEDQEALGKKPKAPALRFLKRTLSENESESVKSTTLAVDYPKTPTGSPATEVSAKWTHLTE
FELKGLKALVEKLESLPENKKCVPEGIEDPQALLEGVKNVLKEHADDDPSLAITGVPVVTWPKKTPKNRAVGRPKGKLG
ASAVKLAANRTTAGARRRRTRCRKCEACLRTECGECHFCCKDMKKFGGPGRMKQSCIMRQCIAPVLPHTAVCLVCGEAGKE
DTVEEEEGKFNLMLECSICNEIIHPGCLKIKESEGVVNDLPNCWECPCCNHAGKTGKQKRGPGFKYASNLPGSLLKEQ
KMNDRNKEGQEPAKRRSECEEAPRRRSDEHSSKKVPPDGLLRKSDDVHLRKKRKYKPKQELSGRKRLLKPGKEDKLFRRKR
RSWKNADRMALANKPLRRFKQPEDELPEAPPKTRESHRSSSPTAGPSTEGAEGPEKKKKVMRRKRRLPNKELSRE
LSKELNHEIQR TENSLANENQQPIKSEPESEGEKPPGICERPHRFSGKGLNGTPRELRLHQLGPSLRSPPRVISRPPPS
VSPPKCIQMERHVIRPPPISPPDLSPLDDGAHVHREVWMAVFSYLSHQDLVCVMRCRTWNRWCCDKRLWTRIDLNH
CKSITPLMLSGIIRRPVSLDLSWTNISKKQLSWLINRLPGLRDLVLSGCSWIAVSALCSSSCPLLRLTLDVQWVEGLKDA
QMRDLSPTDNRPGQMDNRSLRNIVELRLAGLDITDASRLIIRHMPLLSKLHLSYCNHVTQDSINLLTAVGTTTRDS
LTEINLSDCNKVTDQCLSFFKRCGNICHIDLRYCKQVTKEGCEQFIAEMSSFQGRSCSTTRLGDE

NP_001193854.2

NP_001193854.2 T-lymphocyte activation antigen CD86 isoform 5 [Homo sapiens]

MGRTSFSDSWTLRLHLNLQIKDKGLYQCIIHHKKPTGMIRIHMNSELSVLANSQPEIVPISNITENVYINLTCCSIH
YPEPKKMSVLLRTKNSTIEYDGVQMKSQDNVTELYDVSISLSVSFPDVTSNMTIFCILETDKTRLLSSPFSIELEDPP
PDHIPWITAVLPTVIIICVMVFCLILWKWKKKRPRNSYKCGTNTMERESEQTKKREKIHIPERSDEAQRVFKSSKTSSC
DKSDTCF

NP_001193853.2

NP_001193853.2 T-lymphocyte activation antigen CD86 isoform 4 precursor [Homo sapiens]

MDPQCTMGLSNILFVMAFLLSANFSQPEIVPISNITENVYINLTCCSIHGYPEPKKMSVLLRTKNSTIEYDGVQMKSQDN
VTELYDVSISLSVSFPDVTSNMTIFCILETDKTRLLSSPFSIELEDPPPPDHIPWITAVLPTVIIICVMVFCLILWKWK

KKRPRNSYKCGTNTMERESEQTKKREKIHIPERSDEAQRVFKSSKTSSCDKSDTCF

NP_795711.2

NP_795711.2 T-lymphocyte activation antigen CD86 isoform 3 precursor [Homo sapiens]

MGLSNILFVMAFLLSGAAPLKIAYFNETADLPCQFANSQNSLSELVFWQDQENLVLNEVYLGKEKFDSVHSKYMGR
TSFDSDSWTLRLHNLQIKDKGLYQCIHHKKPTGMIRIHQMNSELSVLNFSQPEIVPISNITENVYINLTCSSIHGYPEP
KKMSVLLRTKNSTIEYDGVMSQSDNVTELYDVSISLSVSFPDVTSNMTIFCILETDKTRLLSSPFSIGTNTMERESEQ
TKKREKIHIPERSDEAQRVFKSSKTSSCDKSDTCF

NP_008820.4

NP_008820.4 T-lymphocyte activation antigen CD86 isoform 2 precursor [Homo sapiens]

MGLSNILFVMAFLLSGAAPLKIAYFNETADLPCQFANSQNSLSELVFWQDQENLVLNEVYLGKEKFDSVHSKYMGR
TSFDSDSWTLRLHNLQIKDKGLYQCIHHKKPTGMIRIHQMNSELSVLNFSQPEIVPISNITENVYINLTCSSIHGYPEP
KKMSVLLRTKNSTIEYDGVMSQSDNVTELYDVSISLSVSFPDVTSNMTIFCILETDKTRLLSSPFSIELEDPQPPDHI
PWITAVLPTVIICVMVFCLILWKWKKKRPRNSYKCGTNTMERESEQTKKREKIHIPERSDEAQRVFKSSKTSSCDKSD
TCF

NP_861445.4

NP_861445.4 B- and T-lymphocyte attenuator isoform 1 precursor [Homo sapiens]

MKTLPAMLTGKFLFWVFFLIPYLDIWNHKGESCDVQLYIKRQSEHSILAGDPFELECPVKYCANRPHVTWCKLNGTTCV
KLEDQRQTSWKEEKNISFFILHFEPVLPNDNGSYRCSANFQSNLIESHSTLYVTDVKSASERPSKDEMASRPWLLYRLLP
LGGPLLLITTCFCLFCLRRHQGKQNELSDTAGREINLVDAHLKSEQTEASTRQNSQVLLSETGIYDNDPDLCFRMEQGS
EVYSNPCLEENKPGIVYASLNHNSVIGPNSRLARNVKEAPTEYASICVRS

NP_001346827.1

NP_001346827.1 T-lymphocyte activation antigen CD80 precursor [Mus musculus]

MACNCQLMQDTPLLKFCPRLILLFVLLIRLSQVSSDVDEQLSKSVKDKVLLPCRYNSPHEDESEDRIYWQKHKDKVVLV
IAGKLKVWPEYKNRTLYDNTTYSLLIILGLVLSDRGTYSQVQKKERGTYEVKHLALVKLSIKADFSTPNITESGNPSADT
KRITCFASGGFPKPRFSWLENGRELPGINTTISQDPESELYTISQDLFNTTRNHTIKCLIKYGAHVSEDFTEWKEPPED
PPDSKNTLVLFAGFGAVITVVVIVVVIKCFCKHRSCFRNEASRETNNSLTFGPPEALAEQTVFL

NP_001304676.1

NP_001304676.1 T-cell receptor-associated transmembrane adapter 1 isoform 2 [Homo sapiens]

MSDKMYSYSSDHRVDEYYIEDTPIYGNLDDMISEPMDENCYEQMKARPEKSVNKMQEATPSAQATNETQMCYASLDHSV
KGKRRKPRKQNTHFSDKDGDEQLHAIDASVSKTTLVDSFSPESQAVEENIHDDPIRLFLIRAKREPIN

NP_001273975.1

NP_001273975.1 endophilin-B2 isoform b [Homo sapiens]

MDFNMKKLASDAGIFFTRAVQFTEEFQGAEKTELDAHFNLLARADSTKNWTEKILRQTEVLLQPNPSARVEEFY
EKLDRKVP
SRVTNGELLAQYMADAASELGPTTPYGKTLIKVAEAEKQLGAAERDFIHTASISFLTPLRNFLEGDWKTISKERR
LLQNRRLDLDA
CKARLKKAKAAEAKATTVPDFQETRPRNYILSASASALWNDEVDAEQELRVAQTEFDRQAEVTRLLE
GISSTHVNHLRCLHEFVKSQTTYYAQCYRHMLDLQKQLGRFPGTFVGTTEPASPLSSTSPTTAAATMPVVP
SVASLAPP
GEASLCLEEVAPPASGTRKARVLYDYEADSSSELALLADELITVYSLPGMDPDWLIGERGNKKGKVPV
TYLELLS

NP_001273974.1

NP_001273974.1 endophilin-B2 isoform a [Homo sapiens]

MDFNMKKLASDAGIFFTRAVQFTEEFQGAEKTELDAHFNLLARADSTKNWTEKILRQTEVLLQPNPSARVEEFY
EKLDRKVP
SRVTNGELLAQYMADAASELGPTTPYGKTLIKVAEAEKQLGAAERDFIHTASISFLTPLRNFLEGDWKTISKERR
LLQNRRLDLDA
CKARLKKAKAAEAKATCEGDTVPDFQETRPRNYILSASASALWNDEVDAEQELRVAQTEFDRQAEVTR
LLLEGISSTHVNHLRCLHEFVKSQTTYYAQCYRHMLDLQKQLGSSQGAIFPGTFVGTTEPASPLSSTSPTTAAATMPV
VPSVASLAPP
GEASLCLEEVAPPASGTRKARVLYDYEADSSSELALLADELITVYSLPGMDPDWLIGERGNKKGKVPV
TYLELLS

NP_001268905.1
NP_001268905.1 cytotoxic T-lymphocyte protein 4 isoform 2 precursor [Mus musculus]
MACLGRLRRYKAQLQLPSRTWPFVALLTLLFIPVFSEAIQVTQPSVVLASSHGVASFPCEYSPSHNTDEVVRVTVLRQTNDQ
MTEVCATTFTEKNTVGFLDYPFCSGTFNCSRNLTIQGLRAVDGTGLYLCKVELMYPPPYFVGMNGTQIYVIAKEKKSSY
NRGLCENAPNRARM
NP_001230007.1
NP_001230007.1 T-cell-specific surface glycoprotein CD28 isoform 3 precursor [Homo sapiens]
MLRLLLLALNLFPSIQVTGKHLCPSPFLPGPSKPFVVLVVVGGVLACYSLLVTVAFIIFWVRSKRSRLHSDYMNMTPRRP
GPTRKHYQPYAPPRDFAAYRS
NP_001230006.1
NP_001230006.1 T-cell-specific surface glycoprotein CD28 isoform 2 precursor [Homo sapiens]
MLRLLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSWKHLCPSPFLPGPSKPFVVLVVVGGVLACYSLLVTVAFIIF
WVRSKRSRLHSDYMNMTPRRPGPTRKHYQPYAPPRDFAAYRS
NP_059508.2
NP_059508.2 inducible T-cell costimulator precursor [Mus musculus]
MKPYFCRVFVFCFLIRLLTGEINGSADHRMFSFHNGGVQISKYPETVQQLKMRLFREREVLCELTCTKGSGNAVSIKNP
MLCLYHLSNNSVSFFLNNPDSSQGSYYFCSLSIFDPPPFQERNLSGGYLHIYESQLCCQLKLWLPVGCAAFVVVLLFGCI
LIIWFSKKKYGSSVHDPNSEYMFMAAVNTNKKSLAGVTS
NP_001012779.2
NP_001012779.2 RGM domain family member B isoform 2 [Homo sapiens]
MIRKKRKRSAAPGPCRSHGPRPATAPAPPSPEPTRPAWTGMGLRAAPSSAAAAAAEVEQRRSPGLCPPPLELLLLLLFS
LGLLHAGDCQQAQCRIQKCTTDFVSLTSHLNSAVDGFDFSECKALRAYAGCTQRTSKACRGNLVYHSAVLGISDLMSQR
NCSKDGPSTSTNPEVTHDPCNYHSHAGAREHRRGDQNPPSYLFCGLFGDPLHRTFKDNFQTCKVEGAWPLIDNNYLSVQV
TNVPVVGSSATATNKITIIIFKAHLECTDQKVYQAVTDDLPAAFVDGTTSGGSDAKSLRIVERESGHYVEMHARYIGTT
VFVRQVGRYLTLAIRMPEDLAMSYEESQDLQLCVNGCPLSERIDDGQGVSAI LGHSLPRTSLVQAWPGYTLETANTQCH
EKMPVKDIYFQSCVFDLLTTGDANFTAAAHSALEDVEALHPRKERWHIFPSSGNGTGRGGSDLSVSLGLTCLILIVFL
NP_031668.3
NP_031668.3 T-cell-specific surface glycoprotein CD28 precursor [Mus musculus]
MTLRLFLALNFFSVQVTENKILVKQSPLLVDSDNEVSLSCRYSYNLLAKEFRASLYKGVNSDVEVCVGNNGFTYQPQFR
SNAEFNCDGDFDNETVTFRNLHVNHTDIYFCKIEFMYPPPYLDNERSNGTIIHIKEKHLCHTQSSPKLFWALVVVAGV
LFCYGLLVTVLCVIWNTSRNRLLQSDYMNMTPRRPGPTRKPYQPYAPARDFAAYRP
NP_001078826.1
NP_001078826.1 B- and T-lymphocyte attenuator isoform 2 [Homo sapiens]
MKTLPAMLTGKGLFWVFFLIPYLDIWNHIGKESCDVQLYIKRQSEHSILAGDPFELECPVKYCANRPHVTWCKLNGTTCV
KLEDRTSWKEEKNISFFILHFEPVLPNDNGSYRCSANFQSNLIESHSTLYVTGKQNELSDTAGREINLVAHLKSEQT
EASTRQNSQVLLSETGIYDNDPDLCFRMQEGSEVYSNPCLEENKPGIVYASLNHSHVIGPNSRLARNVKEAPTEYASICVR
S
NP_033985.3
NP_033985.3 T-lymphocyte activation antigen CD80 precursor [Mus musculus]
MACNCQLMQDTPLLKFCPRLILLFVLLIRLSQVSSDVDEQLSKSVKDKVLLPCRYNSPHEDESEDRIYWQKHKVVLVS
IAGKLKVWPEYKNRTLYDNTTYSLIILGLVLSDRGTYSVQKKERGTYEVKHLALVKLSIKADFSTPNITESGNPSADT
KRITCFASGGFPKPRFSWLENGRELPGINTTISQDPESELYTISQLDFNTTRNHTIKCLIKYGAHVSEDFTWEKPPED
PPDSKNTLVLFAGAGFVAVITVVVIVVIKCFCKHRSCFRNEASRETNNSLTFGPPEALAEQTVFL
NP_057472.2
NP_057472.2 T-cell receptor-associated transmembrane adapter 1 isoform 1 [Homo

sapiens]
MSGISGCPFFLWGLLALLGLALVISLIFNISHYVEKQRQDKMYSYSSDHTRVDEYYIEDTPIYGNLDDMISEPMDENCYE
QMKARPEKSVNKMQEATPSAQATNETQMCYASLDHSVKGKRRKPRKQNTHFSDKDGDEQLHAIDASVSKTTLVDSFSPES
QAVEENIHDDPIRLFLIRAKREPIN
NP_033973.2
NP_033973.2 cytotoxic T-lymphocyte protein 4 isoform 1 precursor [Mus musculus]
MACLGLRRYKAQLQLPSRTWPFVALLTLLFIPVFSEAIQVTQPSVVLASSHGVASFPCEYSPSHNTDEV RVTVLRQTNDQ
MTEVCATTFTEKNTVGFLDYFPCSGTFNESRVNLTIQGLRAVD TGLYLCKVELMYPPPYFVGMGNGTQIYVIDPEPCPDS
DFLLWILVAVSLGLFFYSFLVTAVSLSKMLKKRSPLTTGVYVKMPPTPEPECEKQFQPYFIPIN
NP_683700.1
NP_683700.1 tumor necrosis factor receptor superfamily member 18 isoform 3
precursor [Homo sapiens]
MAQHGA MGAFRALCGLALLCALSLGQRPTGGPGCGPGRLLLGTGTDARCCRVHTTRCCRDYPGEECCSEWDCMCVQPEFH
CGDPCCTTCRHHPCPPGQGVQSQGKFSFGFQCIDCASGTFSGGHEGHCKPWTDC TQFGFLTVPFGNKT HNAVCPVGPSPA
EPLGWLT VVLLAVAACVLLLTSAQLGLHIWQLRKTQLLLEVPPSTEDARSCQFP EEERGERSAEEKGRLGDLWV
NP_683699.1
NP_683699.1 tumor necrosis factor receptor superfamily member 18 isoform 2
precursor [Homo sapiens]
MAQHGA MGAFRALCGLALLCALSLGQRPTGGPGCGPGRLLLGTGTDARCCRVHTTRCCRDYPGEECCSEWDCMCVQPEFH
CGDPCCTTCRHHPCPPGQGVQSQGKFSFGFQCIDCASGTFSGGHEGHCKPWTDC CWRCRRRPKTPEAASSPRKSGASDRQ
RRRGGWETCGCEPGRPPGPPTAASPSGAPQAAGALRSALGRALLPWQKQWVQEGGSDQRPGPCSSAAAAGPCRRERETQ
SWPPSSLAGPDGVGS
NP_064530.1
NP_064530.1 endophilin-B2 isoform b [Homo sapiens]
MDFNMKKLASDAGIFFTRAVQFTEEFKGQAEKTELDAHFENLLARADSTKNWTEKILRQTEVLLQPNPSARVEEFLYEKL
DRKVPSRV TNGELLAQYMADAASELGPTTPYGKTLIKVAEAEKQLGAAERDFIHTASISFLTPLRNFLEGDWKTISKERR
LLQNRRLDL DACKARLKKAKAAEAKATTVPDFQETRPRNYILSASASALWNDEVDKAEQELRVAQTEFDRQAEVTRLLE
GISSTHVNHLRCLHEFVKSQTTYYAQCYRHMLDLQKQLGRFP GTFVGTTEPASPLSSTSPTTAAATMPVVPVSVASLAPP
GEASLCLEEVAPPASGTRKARVLYDYEAADSSSELALLADELITVYSLPGMDPDWLIGERGNKKGKVPVTYLELLS
NP_056605.1
NP_056605.1 ICOS ligand precursor [Mus musculus]
MQLKCPCFVSLGTRQPVWKKLHVSSGFFSGLGLFLLSSSLCAASAETEVGAMVGSNVVLSCIDPHRRHFNLSGLYVYWQ
IENPEVSVTY YLPYKSPGINVDSSYKNRGHLSLDSMKQGNFSLYLK NVTQDTQEFTCRVFMNTATELVKILEEVVRLRV
AANFSTPVISTDSSNPGQERTYTCMSKNGYPEPNLYWINTT DNSLIDTALQNN TVYLNKLGLYDVISTRLRPWTSRGDV
LCCVENVALHQNITSISQAESFTGNNTKNPQETHNNELKVLVPVLAVLAAAFVSFIIYRRTRPHRSYTGPKTVQLELTD
HA
NP_001356843.1
NP_001356843.1 endophilin-B2 isoform d [Homo sapiens]
MDFNMKKLASDAGIFFTRAVQFTEEFKGQAEKTELDAHFENLLARADSTKNWTEKILRQTEVLLQPNPSARVEEFLYEKL
DRKVPSRV TNGELLAQYMADAASELGPTTPYGKTLIKVAEAEKQLGAAERDFIHTASISFLTPLRNFLEGDWKTISKERR
LLQNRRLDL DACKARLKKAKAAEAKATCEGDTVPDFQETRPRNYILSASASALWNDEVDKAEQELRVAQTEFDRQAEVTR
LLLEGISSTHVNHLRCLHEFVKSQTTYYAQCYRHMLDLQKQLGSSSLSTACLA WTLTGSLAREATRRARSLSPTWNC SAR
QVPPSPPHSGLGRRGWAQPCHLTCLLV TQLFRVGRIPHILSLPLVT
NP_001356842.1
NP_001356842.1 endophilin-B2 isoform c [Homo sapiens]
MGGWCHESLMAISHVWIVRPEARSCFFSAPREFTEEFKGQAEKTELDAHFENLLARADSTKNWTEKILRQTEVLLQPNPS
ARVEEFLYEKLDRKVPSRV TNGELLAQYMADAASELGPTTPYGKTLIKVAEAEKQLGAAERDFIHTASISFLTPLRNFLE
GDWKTISKERRLLQNRRLDL DACKARLKKAKAAEAKATCEGDTVPDFQETRPRNYILSASASALWNDEVDKAEQELRVAQ

TEFDRQAEVTRLLLEGISSTHVNLRLCLHEFVKSQTTYAAQCYRHMLDLQKQLGSSQGAIFPGTFVGTTEPASPLSSTS
PTTAAATMPVVPVSVASLAPPGEASLCLEEVAPPASGTRKARVLYDYEAADSSELALLADELITVYSLPGMDPDWLIGERG
NKKGKVPVTYLELLS

NP_001356844.1

NP_001356844.1 endophilin-B2 isoform e [Homo sapiens]

MDFNMKKLASDAGIFFTRAVQFTEEFKQAEKTELDHFENLLARADSTKNWTEKILRQTEVLLQPNPSARVEEFYKEL
DRKVPSRVTNCELLAQYMADAASELGPTTPYGKTLIKVAEAEKQLGAAERDFIHTASISFLTPLRNFLEGDWKTISKERR
LLQNRRLDLDAACKARLKKAKAAEAKATLWNDEVDAEQELRVAQTEFDRQAEVTRLLLEGISSTHVNLRLCLHEFVKSQ
TTYAAQCYRHMLDLQKQLGSSQGAIFPGTFVGTTEPASPLSSTSPTTAAATMPVVPVSVASLAPPGEASLCLEEVAPPASG
TRKARVLYDYEAADSSELALLADELITVYSLPGMDPDWLIGERGNKKGKVPVTYLELLS

NP_001354479.1

NP_001354479.1 lipopolysaccharide-responsive and beige-like anchor protein
isoform 4 [Homo sapiens]

MASEDNRPSPPTGDDGGGGGREETPTEGGALSLKPGLPIRGIRMKFAVLTGLVEVGEVSNRDIVETVFNLLVGGQFDL
EMNFIIQEGESINCMVDLLEKCDITCQAEVWSMFTAILKKSIRNLQVCTEVGLVEKVLGKIEKVDNMIADLLVDMGLVLA
SYNLTVRELKLFSSKLQGDGKRWPPHAGKLLSVLKHMPQKYGPDAFFNFPGKSAAAIAPPIAKWPYQNGFTFHTWLRMD
PVNNINVDKDKPYLYCFRTSKGLGSAHFVGGCLIVTSIKSKGKGFQHCVKFDFKPKQKWMVTIVHIYNRWKNSSELRCYV
NGELASYGEITWVNTSDTFDKCFLGSSETADANRVFCGQMTAVYLFSEALNAAQIFAIYQLGLGYKGTFFKFAESDLFL
AEHHKLLLYDGKLSSAIAFTYNPRATDAQCLESSPKDNPSIFVHSPHALMLQDVKAVLTHSIQSAMHSIGGVQVLFPLF
AQLDYRQYLSDEIDLITCSTLLAFIMELLKNSIAMQEQLACKGFLVIGYSLEKSSKSHVSRAVLELCLAFSKYLSNLQN
GMPLLKQLCDHVLLNPAIWIHTPAKVQLMLTYLSTEFIGTVNIYNTIRRVGTVLLIMHTLKYYYYWAVNPQDRSGITPKG
LDGPRPNQKEMLSLRAFLLMFIKQLVMKDSGVKEDELQAILNYLLTMHEDDNLMDVLQLLVALMSEHPNSMIPAFDQRNG
LRVIYKLLASKSEGIRVQALKAMGYFLKHLAPKRKAEVMLGHGLFSLLAERLMLQTNLITMTTYNVLFIEILIEIGTQVI
HKQHPDPDSSVKIQNPQILKVIATLLRNSPQCPESEVRRAFSDMIKLFNNSRENRRSLLQCSVWQEWMLSLCYFNPKN
SDEQKITEMVYAFIRILLYHAVKYEWWGWRVWDTLSITHSKVTFEIHKENLANIFREQQGVDEEIGLCSSTSVQAASG
IRRDINVSQSQPDTKDSPVCPHFTTNGNENSSIIEKTSSLESASNIELQTTNTSYEEMKAEQENQELPDEGTLEETLTN
ETRNADDLEVSSDIEAVAISNSFITGKDSMTVSEVTASISSPSEEDASEMPEFLDKSIVEEEEDDDYVELKVEGSPT
EEANLPTELQDNSLSPAASEAGEKLDMFGNDDKLIFQEGKPVTEKQTDTTQDSKDSGIQTMTASGSSAMSPETTVSQIA
VESDLGQMLEEGKATNLRTRETKLINDCHGSVSEASSEQKIAKLDSNVATDTERLELKASPNVEAPQPHRHVLEISRQH
EQPGQGIAPDAVNGQRRDSRSTVFRIPEFNWSQMHQRLTDLDFSIEDTIQMWRSHTKTVMDFVNSSDNVIFVHNTIHL
ISQVMDNMVMACGGILPLLSAATSATHELENIEPTQGLSIEASVTFLQRLISLVDVLIASSLGFTIEAEKSMSSGGIL
RQCLRLVCAVAVRNCLEQHQHSQKTRGDKALKPMHSLIPLGKSAKSPVDIVTGGISPVRDLDRLLQDMDINRLRAVVF
RDIEDSKQAQFLALAVVYFISVLMVSKYRDILEPQNERHSQSCTETGSEENENVSLEITPAAFSTLTASVEESESTSSA
RRRDSGIGEETATGLGSHVEVTPHTAPPGVSAGPDAISEVLSTLSLEVNKSPETKNDRGNDLDTKATPSVSVSKNVNVKD
ILRSLVNIPADGVTVDPALLPACLGALGDLVEQPQVFRSFDERSVIVAAKKSAVSPSTFNSTIPTNAVSVVSSVDSAQA
SDMGGESPGSRSSNAKLPSVPTVDSVSQDPVSNMSITERLEHALEKAAPLLREIFVDFAPFLSRTLLGSHGQELLIEGTS
LVCMKSSSSVVELVMLLCSQEWQNSIQKNAGLAFIELVNEGRLLSQTMKDHLVRVANEAEFILSRQRAEDIHRHAEFESL
CAQYSADKREDEKMCDDLIRAAKYRDHVTATQLIQKIINILTDKHGAWGNSAVSRPLEFWRLDYWEDDLRRRRFVRNPL
GSTHPEATLKTAVEHATDEDILAKGQSIRSQALGNQNSENEILLEGDDDTLSSVDEKDLENLAGPVSLSTPAQLVAPSV
VVKGTLSVTSSSELYFEVDEEDPNFKKIDPKILAYTEGLHGKWLFTIERSIFSRRYLLQNTALEIFMANRVAVMFNFPDPA
TVKKVNYLPRVGVGTSFGLPQTRRISLASPRQLFKASNMTQRWQHREISNFEYLMFLNTIAGRSYNDLNQYPVPFWVIT
NYESEELDLTLPTNFRDLSKPIGALNPKRAAFFAERYESWEDDQVPKFHYGTHYSTASFLVALLRIEFTTYFLNLQGG
KFDHADRTFSSISRARNRSQRDTSIDIKELIPEFYLPPEMFVNFNNYNLGVMDDGTVVSDVELPPWAKTSEEFVHINRLAL
ESEFVSCQLHQWIDLIFGYKQKGPEAVRALNVFYLYTEGAVNLNSITDPVLREAVEAQIRSFGQTPSQLLIEHPHPRGS
AMQVYLLQLSPLMFTDKAQQDVIMVLKFPNSPVTHTVAANTQPLATPAVITVTANRLFVAVNKWHNLPALHQAQVQDQPYQ
LPVEIDPLIASNTGMHRRQITDLDQSIQVHSQCFVITSNRYILVCGFWDKSFRVYSTDTGRLIQVVFHWDVVTCLAR
SESYIGGCYILSGSRDATLLWYWGKCSGIGDNPGSETAAPRAILTGHDIYVTCVAVCAELGLVLSGSGEGPCLIHSM
NGDLLRTLEGPENCLKPKLIQASREGHCVFIFYENGLFCTFSVNGKLQATMETDDNIRAIQLSRDGQYLLTGGDRGVVVVR

QVSDLKQLFAYPGCDAGIRAMALSYDQRCIISGMASGSIVLFYNDFNRWHHEYQTRY

NP_001353439.1

NP_001353439.1 RGM domain family member B isoform 2 [Homo sapiens]

MIRKKRKRSAPPGPCRSHGPRPATAPAPPPSPEPTRPAWTGMGLRAAPSSAAAAAAEVEQRRSPGLCPPPLELLLLLLFS
LGLLHAGDCQQAQCRIQKCTTDFVSLTSHLNSAVDGFDFSEFCKALRAYAGCTQRTSKACRGNLVYHSAVLGISDLMSQR
NCSKDGPTSSSTNPEVTHDPCNYHSHAGAREHRRGDQNPSSYLCGLFGDPLHRTFKDNFQTKVEGAWPLIDNNYLSVQV
TNVPVVPGSSATATNKITIIIFKAHHECTDQKVYQAVTDDLPAAFVDGTTSGGSDAKSLRIVERESGHYVEMHARYIGTT
VFVRQVGRYLTLAIRMPEDLAMSYEESQDLQLCVNGCPLSERIDGQGVSAILGHSLPRTSLVQAWPGYTLETANTQCH
EKMPVKDIYFQSCVFDLLTTGDANFTAAHSALEDVEALHPRKERWHIFPSSGNGTPRGGSDLSVSLGLTCLILIVFL

NP_001353438.1

NP_001353438.1 RGM domain family member B isoform 2 [Homo sapiens]

MIRKKRKRSAPPGPCRSHGPRPATAPAPPPSPEPTRPAWTGMGLRAAPSSAAAAAAEVEQRRSPGLCPPPLELLLLLLFS
LGLLHAGDCQQAQCRIQKCTTDFVSLTSHLNSAVDGFDFSEFCKALRAYAGCTQRTSKACRGNLVYHSAVLGISDLMSQR
NCSKDGPTSSSTNPEVTHDPCNYHSHAGAREHRRGDQNPSSYLCGLFGDPLHRTFKDNFQTKVEGAWPLIDNNYLSVQV
TNVPVVPGSSATATNKITIIIFKAHHECTDQKVYQAVTDDLPAAFVDGTTSGGSDAKSLRIVERESGHYVEMHARYIGTT
VFVRQVGRYLTLAIRMPEDLAMSYEESQDLQLCVNGCPLSERIDGQGVSAILGHSLPRTSLVQAWPGYTLETANTQCH
EKMPVKDIYFQSCVFDLLTTGDANFTAAHSALEDVEALHPRKERWHIFPSSGNGTPRGGSDLSVSLGLTCLILIVFL

NP_001353440.1

NP_001353440.1 RGM domain family member B isoform 3 [Homo sapiens]

MMKKRKRSAPPGPCRSHGPRPATAPAPPPSPEPTRPAWTGMGLRAAPSSAAAAAAEVEQRRSPGLCPPPLELLLLLLFSL
GLLHAGDCQQAQCRIQKCTTDFVSLTSHLNSAVDGFDFSEFCKALRAYAGCTQRTSKACRGNLVYHSAVLGISDLMSQRN
CSKDGPTSSSTNPEVTHDPCNYHSHAGAREHRRGDQNPSSYLCGLFGDPLHRTFKDNFQTKVEGAWPLIDNNYLSVQVT
NVPVVPGSSATATNKITIIIFKAHHECTDQKVYQAVTDDLPAAFVDGTTSGGSDAKSLRIVERESGHYVEMHARYIGTTV
FVRQVGRYLTLAIRMPEDLAMSYEESQDLQLCVNGCPLSERIDGQGVSAILGHSLPRTSLVQAWPGYTLETANTQCHE
KMPVKDIYFQSCVFDLLTTGDANFTAAHSALEDVEALHPRKERWHIFPSSGNGTPRGGSDLSVSLGLTCLILIVFL

NP_001353437.1

NP_001353437.1 RGM domain family member B isoform 1 precursor [Homo sapiens]

MGLRAAPSSAAAAAAEVEQRRSPGLCPPPLELLLLLLFSLGGLHAGDCQQAQCRIQKCTTDFVSLTSHLNSAVDGFDFSE
FCKALRAYAGCTQRTSKACRGNLVYHSAVLGISDLMSQRNCSKDGPTSSSTNPEVTHDPCNYHSHAGAREHRRGDQNPSSY
LFCGLFGDPLHRTFKDNFQTKVEGAWPLIDNNYLSVQVTNVPVVPGSSATATNKITIIIFKAHHECTDQKVYQAVTDDLPA
AAFVDGTTSGGSDAKSLRIVERESGHYVEMHARYIGTTVFVRQVGRYLTLAIRMPEDLAMSYEESQDLQLCVNGCPLSE
RIDGQGVSAILGHSLPRTSLVQAWPGYTLETANTQCHEKMPVKDIYFQSCVFDLLTTGDANFTAAHSALEDVEALHP
RKERWHIFPSSGNGTPRGGSDLSVSLGLTCLILIVFL

NP_001351834.1

NP_001351834.1 lipopolysaccharide-responsive and beige-like anchor protein
isoform 3 [Homo sapiens]

MASEDNRPSPPTGDDGGGGGREETPTEGGALSLKPGLPIRGIRMKFAVLTGLVEVGEVSNRDIVETVFNLLVGGQFDL
EMNFIIQEGESINCMVDLLEKCDITCQAEVWSMFTAILKKSIRNLQVCTEVGLVEKVLGKIEKVDNMIADLLVDM LGVLA
SYNLTVRELKLFSSKLQGDKGRWPPHAGKLLSVLKHMPQKYGPDAFFNFPKGSAIAALPPIAKWPYQNGFTFHTWLRMD
PVNNINVDKDKPYLYCFRTSKGLGSAHFVGGCLIVTSIKSKGKGFGHCVKFDFKPKQKWMVTIVHIYNRWKNSELRCYV
NGELASYGEITWFVNTSDTFDKCFLGSSETADANRVFCGQMTAVYLFSEALNAAQIFAITYQLGLGYKGTFFKFAESDLFL
AEHHKLLLYDGKLSSAIAFTYNPRATDAQCLESSPKDNPSIFVHSPHALMLQDVKAVLTHSIQSAMHSIGGVQVLFPLF
AQLDYRQYLSDEIDL TICSTLLAFIMELLKNSIAMQEQLACKGFLVIGYSLEKSSKSHVSRAVLELCLAFSKYLSNLQN
GMPLKQLCDHVLLNPAIWIHTPAKVQLMLTYLSTEFIGTVNIYNTIRRVGTVLLIMHTLKYYYYWAVNPQDRSGITPKG
LDGPRPNQKEMLSLRAFLLMFIKQLVMKDSGKDEDELQAILNYLLTMHEDDNLMDVLQLLVALMSEHPNSMIPAFDQRNG
LRVIYKLLASKSEGRVQALKAMGYFLKHLAPKRKAEVMLGHGLFSLLAERLMLQTNLITMTTYNVLFIEILIEIGTQVI
HKQHPDPDSSVKIQNPQILKVIATLLRNSPQCPEMEVRRAFLSMIKLFNNSRENRRSLLQCSVWQEWMLSLCYFNPKN
SDEQKITEMVYAIFRILLYHAVKYEWGGWRVWDTLSITHSKVTFEIHKENLANIFREQQGVDEEIGLCSSTSVQAASG

IRRDINVSQGPDTKDSVCPHFTTNGNENSSIEKTSSLESASNIELQTTNTSYEEMKAEQENQELPDEGTLEETLTN
ETRNADDLEVSSDIEAIAISSNSFITTKGDSMTVSEVTASISSPSEEDASEMPEFLDKSIVEEEEDDDYVELKEGSPT
EEANLPTELQDNLSPAASEAGEKLDMFGNDDKLIQEGKPVTEKQTDDETQDSKDSGIQTMTASGSSAMSPETTVSQIA
VESDLGQMLEEKKATNLTRETKLINDCHGSVSEASSEQKIAKLDVSNVATDTERLELKASPNVEAPQPHRHVLEISRQH
EQPGQGIAPDAVNGQRRDSRSTVFRIPFENWSQMHQRLLDLLFSIETDIQMWRSHSTKTVMDFVNSSDNVIFVHNTIHL
ISQVMDNMVMACGGILPLLSAATSATHELENIEPTQGLSIEASVTFLQRLISLVDVLIFASSLGTFEIEAEKSMSSGGIL
RQCLRLVCAVAVRNCLECCQHSQKTRGDKALKPMHSLIPLGKSAKSPVDIVTGGISPVRDLDRLLQMDINRLRAVVF
RDIEDSKQAQFLALAVVYFISVLMVSKYRDILEPQNERHSQSCTETGSENVSLSEITPAAFSTLTASVEEESTSSA
RRRDSGIGEETATGLGSHVEVTPHTAPPGVSAGPDAISEVLSTLSLEVNKSPETKNDRGNDLDTKATPSVSVSKNVNVKD
ILRLSVNIPADGVTVPALLPPACLGALGDLSEVQPVQFRSFDERSVIVAAKKSAVSPSTFNTSIPTNAVSVSVSSVDSAQA
SDMGGESPGSRSSNAKLPSVPTVDSVSDPVSNSITERLEHALEKAAPLLREIFVDFAPFLSRTLLGSHGQELLIEGTS
LVCMKSSSSVVELVMLLCSQEWQNSIQKNAGLAFIELVNEGRLLSQTMKDHLVRVANEAEFILSRQRAEDIHRHAEFESL
CAQYSADKREDEKMDHLIRAAKYRDHVTATQLIQKIINILTDKHGAWGNSAVSRPLEFWRLDYWEDDLRRRRRFVRNPL
GSTHPEATLKTAVEHATDEILAKGKQSIRSQUALGNQNSENEILLEGDDDTLSSVDEKDLENLAGPVSLSTPAQLVAPSV
VVKGTLSVTSSELYFEVDEEDPNFKKIDPKILAYTEGLHGKWLFTIERSIFSRRYLLQNTALEIFMANRVAVMFNFPDPA
TVKKVVNYLPRVGVGTSFGLPQTRRISLASPRQLFKASNMTRWQHREISNFEYLMFLNTIAGRSYNDLNQYPVPFWIT
NYESEELDLTLPTNFRDLSKPIGALNPKRAAFFAERYESWEDDQVPKFHYGTHYSTASFVLAWLLRIEFTTYFLNLQGG
KFDHADRTFSSISRWRNSQRDTSIDIKELIPEFYLPFVNFNNYNLGVMDDGTVVSDVELPPWAKTSEEFVHINRLAL
ESEFVSCQLHQWIDLIFGYKQKGPEAVRALNVFYLYTEGAVNLNSITDPVLREAVEAQIRSFGQTPSQLLIEPHPPRGS
AMQVSPLMFTDKAQQDVIMVLKFPSNSPVTHVAANTQPLATPAVITVTANRLFVAVNKWHNLPAGQAVQDQPYQLPVEI
DPLIASNTGMHRRQITDLLDQSIQVHSQCFVITSNRYILVCGFWDKSFRVYSTDTGRLIQVVFVGHWDVVTCLARSESYI
GGNCYILSGSRDATLLLWYWGKCSGIGDNPGETAAPRAILTGHDYEVTCAAVCAELGLVLVSGSQEGPCLIHSMNGDLL
RTLEGPENCLPKPLIQASREGHCIFYENGLFCTFSVNGKLQATMETDDNIRAIQLSRDGGYLLTGDRGVVVRQVSDL
KQLFAYPGCDAGIRAMALSVDQRCIISGMASGSIVLFYDNFNRWHHEYQTRY

NP_001300906.1

NP_001300906.1 protein kinase C eta type isoform 2 [Mus musculus]

MEAGRQVLVDLEPEGKVFFVITLTGSFTEATLQRDRIFKHFTKRQRAMRRRVHQVNGHKFMATYLRQPTYCSHCREFIW
GVFGKQGYQCQVCTCVVHKRCHHLIVTACTCQNNINKVDKIAEQRFGINIPHKFNVHNYKVPTFCDHCGSLLWIMRQG
LQCKICKMNVHIRCQANVAPNCGVNAVELAKTLAGMGLQPGNISPTSKLISRSTLRRQGKEGSKEGNGIGVNSSSRFGID
NFEFIRVLGKGSFGKVMARIKETGELYAVKVLKDVILQDDVECTMTEKRILSLARNHPFLTQLFCCFQTPDRLFFVM
EFVNGGDLMFHIQSRRFDEARARFYAAEIIISALMFLHEKGIIYRDLKLDNVLLDHEGHCKLADFGMCKEGICNGVTTAT
FCGTPDYIAPEILQEMLYGPAVDWWAMGVLLYEMLCGHAPFEAENEDDLFEAILNDEVVYPTWLHEDATGILKSFMTKNP
TMRLGSLTQGGEGEILRHPFFKEIDWAQLNHRQLEPPFRPRIKSREDVSNFDPDFIKEEPVLTPIDEGHLPMINQDEFNRN
FSYVSPELQL

XP_004577315.1

XP_004577315.1 T-cell-specific surface glycoprotein CD28 [Ochotona princeps]

MVLLAENKILVKQSPMLVVQNNEVNLSCKYTYNLSKEFRASLYKGADSAVEVCVNGNFSHPRQFHSTTGFSKGLDN
ETVTFFLKNLHVNTDIYFCKIEIMYPPPYIDNEKSNGTIIHVKEQHLCPAHLSESSTFFWVLVVVCGVLAFYSMLLTI
VLFSCWMTSKKNRLLQSDYMNMTPRRPGPTRKHYPYAPARDFAAAYS

sp|P31041.2|CD28_MOUSE

sp|P31041.2|CD28_MOUSE RecName: Full=T-cell-specific surface glycoprotein CD28;
AltName: CD_antigen=CD28; Flags: Precursor

MTLRLFLALNFFSVQVTENKILVKQSPLLVDSNEVSLSCRYSYNLLAKEFRASLYKGVNSDVEVCVNGNFYQPPFR
SNAEFNCDGDFNETVTFRLLVNLHVNTDIYFCKIEFMYPYLDNERSNGTIIHIKEKHLCHTQSSPKLFWALVVVAGV
LFCYGLLVTVLALCVIWTNSRRNRLLQSDYMNMTPRRPGPTRKHYPYAPARDFAAAYRP

NP_001186211.2

NP_001186211.2 lipopolysaccharide-responsive and beige-like anchor protein
isoform 1 [Homo sapiens]

MASEDNRVSPPPPTGDDGGGGGREETPTEGGALSLKPGLPIRGIRMKFAVLTGLVEVGEVSNRDIVETVFNLLVGGQFDL
 EMNFIIQEGESINCMVDLLEKCDITCQAEVWSMFTAILKKSIRNLQVCTEVGLVEKVLGKIEKVDNMIADLLVDM LGVLA
 SYNLTVRELKLFSSKLQGDKGRWPPHAGKLLSVLKHMPQKYGPDAFFNFPKGSAAAIALPPIAKWPYQNGFTFHTWLRMD
 PVNNINVDKDKPYLYCFRTSKGLGYSAHFVGGCLIVTSIKSKGKGFGHCVKFDFKPKQWYMTIVHIYNRWKNSRLCYV
 NGELASYGEITWFVNTSDTFDKCFLGSSETADANRVFCGQMTAVYLFSEALNAAQIFAIFYQLGLGYKGTFFKAESDLFL
 AEHHKLLLYDGKLSAIAFTYNPRATDAQLCLESSPKDNPSIFVHSPHALMLQDVKA VLTHSIQSAMHSIGGVQVLFPLF
 AQLDYRQYLSDEIDLTICSTLLAFIMELLKNSIAMQEQLACKGFLVIGYSLEKSSKSHVSRVLELCLAFSKYLSNLQN
 GMPLLKQLCDHVLLNPAIWIHTPAKVQLMLTYTLSTEFIGTVNIYNTIRRVGTVLLIMHTLKYYYYWAVNPQDRSGITPKG
 LDGPRPNQKEMLSLRAFLLMFIKQLVMKDSGVKEDELQAILNYLLTMHEDDNLMDVLQLLVALMSEHPNSMIPAFDQRNG
 LRVIYKLLASKSEGIRVQALKAMGYFLKHLAPKRKAEVMLGHGLFSLLAERLMLQTNLITMTTYNVLFIEILIEIGTQVI
 HKQHPDPDSSVKIQNPQILKVIATLLRNSPQCPESEVRRRAFLSDMIKLFNNSRENRRSLLQCSVWQEWMLSLCYFNPKN
 SDEQKITEMVYAIFRILLYHAVKYEWGGWRVWVDTLSITHSKVTFEIHKENLANIFREQQGVDEEIGLCSSTSVAASG
 IRRDINVSQSQPDTKDPVCPHFTTNGNENSSIEKTSSLESASNIELQTTNTSYEEMKAEQENQELPDEGTLEETLTN
 ETRNADDLEVSSDIEAIAISSNSFITTKGDSMTVSEVTASISSPSEEDASEMPEFLDKSIVEEEEDDDYVELKVEGSPT
 EEANLPTELQDNLSPAASEAGEKLD MFGNDDKLIFQEGKPVTEKQTD TETQDSKDSGIQTMTASGSSAMSPETT VSQIA
 VESDLGQMLEEGKKATNL TRETKLINDCHGSVSEASSEQKIAKLDVSNVATDTERLELKASPNVEAPQPHRHVLEISRQH
 EQPGQGIAPDAVNGQRDRSRSTVFRIPEFNWSQMHQRLLDLLFSIETDIQMWRSHTKTVMDFVNSSDNVIFVHNTIHL
 ISQVMDNMVMACGGILPLLSAATSATHELENIEPTQGLSIEASVTFLQRLISLVDVLIFASSLGFTIEIEAKSMSSGGIL
 RQCLRLVCAVAVRNCLECCQHSQKTRGDKALKPMHSLIPLGKSAKSPVDIVTGGISPVRDLDRLLQDMDINRLRAVVF
 RDIEDSKQAQFLALAVVYFISVLMVSKYRDILEPQNERHSQSCTETGSENVSLSEITPAAFSTLT TASVEESESTSSA
 RRRDSGIGEETATGLGSHVEVTPHTAPPGVSAGPDAISEVLSTLSLEVNKSPETKNDRGNDLDTKATPSVSVSKNVNVD
 ILRSLVNIPADGVTVDPALLPACLGALGDLSEVQPVQFRSFD RSVIVA AKKSAVSPSTFNTSIPTNAVSVSVSSVDSAQA
 SDMGGESPGSRSSNAKLPSVPTVDSVSQDPVSNMSITERLEHALEKAAPLLREIFVDFAPFLSRTLLGSHGQELLIEGTS
 LVCMKSSSSSVVELVMLLCSQEWQNSIQKNAGLAFIELVNEGRLLSQTMDHLVRVANEAEFILSRQRAEDIHRHAEFESL
 CAQYSADKREDEKMDHLIRA AKYRDHVTATQLIQKIINILTDKHGAWGNSAVSRPLEFWRLDYWEDDLRRRRRFRVRNPL
 GSTHPEATLKTAVEHATDEDILAKGQSIRSQALGNQNSENEILLEGDDDTLSSVDEKDLENLAGPVSLSTPAQLVAPSV
 VVKGTLSVTSSSELYFEVDEEDPNFKKIDPKILAYTEGLHGKWLFT EIRSFRRYLLQNTALEIFMANRVAVMFNFPDPA
 TVKKVVNYLPRVGVTSGFLPQTRRISLASPRQLFKASNM TQRWQHREISNFEYLMFLNTIAGRSYNDLNQYPVPFWIT
 NYESEELDLTLPTNFRDLSKPIGALNPKRAAFFAERYESWEDDQVPKFHYGTHYSTASFVLA WLLRIEFTTYFNLQGG
 KFDHADRTFSSISRWRNSQRDTSDIKELIPEFYLPMEFVNFN NNLGVMDDGT VVSDVELPPWAKTSEEFVHINRLAL
 ESEFVSCQLHQWIDLIFGYKQGP EAVRALNVFYLT YEGAVNLNSITDPVLEAVEAQIRSFQGTSPQLLIEPHPRGS
 AMQVSPLMFTDKAQQDVIMVLKFPSNSPVTHVAANTQPGLATPAVITVTANRLF AVNKWHNLP AHQGA VQDQPYQLPVEI
 DPLIASNTGMHRRQITD LLDQSIQVHSQCFVITS DNRYILVCGFWDKSF RVYSTDTGR LIQVVFGHWDVVTCLARSESYI
 GGNCYILSGSRDATLLLWYWNGKCSGIGDNPGETAAPRAILTGH DYEVTC AAVCAELGLVLSGSQEGPCLIHSMNGDLLR
 TLEGPENCLKPKLIQASREGHC VIFYENGLFCTFSVNGKLQATMETDDNIRAIQLSRDGQYLLTG DGRGVVVVRQVSDLK
 QLFAYPGCDAGIRAMALSYDQRCIISGMASGSIVLFYNDFN RWHHEYQTRY

sp|P42081.2|CD86_HUMAN

sp|P42081.2|CD86_HUMAN RecName: Full=T-lymphocyte activation antigen CD86;
 AltName: Full=Activation B7-2 antigen; AltName: Full=B70; AltName: Full=BU63;
 AltName: Full=CTLA-4 counter-receptor B7.2; AltName: Full=FUN-1; AltName:
 CD_antigen=CD86; Flags: Precursor

MDPQCTMGLSNILFVMAFLLSGAAPLKIAYFNETADLPCQFANSQNSLSELVFWQDQENLVLNEVYLGKEKFDSVHS
 KYMGRTSFDSDSWTLRLHNLQIKDKGLYQCI IHKKPTGMIRIHQMNSLSVLNFSQPEIVPI SNITENVYINLTCCSI
 HGYPEPKKMSVLLRTKNSTIEYDGMVQKSQDNVTELYDVSISLSVSFPDVTSNMTIFCILETDKTRLLSSPFSIELED PQ
 PPPDHIPWITAVLPTVIIICVMVFCLILWKWKKKKRPRNSYKCGTNTMEREESEQTKKREKIHIPERSDEAQRVFKSSKTS
 SCDKSDTCF

sp|Q7Z6A9.3|BTLA_HUMAN

sp|Q7Z6A9.3|BTLA_HUMAN RecName: Full=B- and T-lymphocyte attenuator; AltName:

Full=B- and T-lymphocyte-associated protein; AltName: CD_antigen=CD272; Flags:
Precursor

MKTLPAMLTGKGLFWVFFLIPYLDIWNHKGESCDVQLYIKRQSEHSILAGDPFELECPVKYCANRPHVTWCKLNGTTCV
KLEDRTQSWKEEKNISFFILHFEPVLPNDNGSYRCSANFQSNLIESHSTTLVTDVKSASERPSKDEMASRPWLLYRLLP
LGGLPLLITTCFLCFCLRRHQGKQNELSDTAGREINLVDAHLKSEQTEASTRQNSQVLLSETGIYDNDPDLCFRMQEGS
EVYSNPCLEENKPGIVYASLNHNSVIGPNSRLARNVKEAPTEYASICVRS

NP_001139797.1

NP_001139797.1 T-cell immunoreceptor with Ig and ITIM domains precursor [Mus
musculus]

MHGWLLLVWVQGLIQAFLATGATAGTIDTKRNISAEEGGSVILQCHFSSDTAEVTQVDWKQDQLLAIYSVDLGWHVAS
VFSDRVVPGPSLGLTFQSLTMNDTGEYFCTYHTYPPGGIYKGRIFLKVQESSVAQFQTAPLGGTMAAVLGLICLMVTGVTV
LARKKSIRMHSIESGLGRTEAEPQEWNLRLSSPGSPVQTQTAPAGPCGEAEDDYADPQEYFNVLSYRSLESFIAVSKT
G

NP_062261.3

NP_062261.3 T-lymphocyte activation antigen CD86 precursor [Mus musculus]

MDPRCTMGLAILIFVTVLLISDAVSQAYFNGTAYLPCPFTKAQNISLSELVFWQDQKLVLYEHYLGTEKLDVNA
KYLGRTSFDRNNWTLRLHNQIKDMGSYDCFIQKKPPTGSIILQQTLELSVIANFSEPEIKLAQNVGTGNSGINLTCTSK
QGHPKPKMYFLITNSTNEYGDNMQISQDNVTELSISNSLSLSPFDGVWMTVVCVLETESMKISSKPLNFTQEFPSQ
TYWKEITASVTVALLLVMLLIIVCHKPNQPSRPSNTASKLERDSNADRETINLKELEPQIASAKPNAE

NP_006717.2

NP_006717.2 lipopolysaccharide-responsive and beige-like anchor protein isoform
2 [Homo sapiens]

MASEDNRPSPPTGDDGGGGREETPTEGGALSLKPLPIRGIRMKFAVLTGLVEVGEVSNRDIVETVFNLLVGGQFDL
EMNFIIQEGESINCMVDLLEKCDITCQAEVWSMFTAILKKSIRNLQVCTEVGLVEKVLGKIEKVDNMIADLLVDMLGVLA
SYNLTVRELKLFSSKLQGDGKRWPPHAGKLLSVLKHPQKYGPDAFFNFPGKSAAAIAPPIAKWPYQNGFTFHTWLRMD
PVNNINVDKDKPYLYCFRTSKGLGYSAHFVGGLIVTSIKSKGKGFQHCVKFDFKPKQWYMTIVHIYNRWKNSSELRCYV
NGELASYGEITWFVNTSDFDKCFLGSSETADANRVFCGQMTAVYLFSEALNAAQIFAIYQLGLGYKGTFFKAESDLFL
AEHHKLLLYDGKLSSAIAFTYNPRATDAQCLESSPKDNPSIFVHSPHALMLQDVKAVLTHSIQSAMHSIGGVQLFPLF
AQLDYRQYLSDEIDLTICSTLLAFIMELLKNSIAMQEMLACKGFLVIGYSLEKSSKSHVSRVLELCLAFSKYLSNLQN
GMPLKQLCDHVLLNPAIWIHTPAKVQLMLYTYLSTEFIGTVNIYNTIRRVTVLLIMHTLKYYYYWAVNPQDRSGITPKG
LDGPRPNQKEMLSLRAFLLMFIKQLVMKDSGVKEDELQAILNYLLTMHEDDNLMDVLQLLVALMSEHPNSMIPAFDQRNG
LRVIYKLLASKSEGIRVQALKAMGYFLKHLAPKRKAEVMLGHGLFSLAERLMLQTNLITMTTYNVLFIEILIEQIGTQVI
HKQHPDPDSSVKIQNPQILKVIATLLRNSPQCPEMEVRRAFSLDMIKLFNNSRENRRSLLQCSVWQEWMLSLCYFNPKN
SDEQKITEMVYAIFRILLYHAVKYEWGGWRVWDTLSITHSKVTFEIHKENLANIFREQQGVDEEIGLCSSTSVAASG
IRRDINVSQSQPDTKDSPVCPHFTTNGNENSSIEKTSSLESASNIELQTTNTSYEEMKAEQENQELPDEGTLEETLTN
ETRNADDLEVSSDIEAVAISNSFITTGKDSMTVSEVTASISSPSEEDASEMPEFLDKSIVEEEEDDDYVELKVEGSPT
EEANLPTELQDNSLSPAASEAGEKLDMGNDKLIQFQEGKPVTEKQTDTTQDSKDSGIQTMATSGSSAMSPETTQSIA
VESDLGQMLEEGKKATNLRETCLINDCHGSVSEASSEKIAKLDSNVATDTERLELKASPNVEAPQPHRHVLEISRQH
EQPGQGIAPDAVNGQRDRSSTVFRIPEFNWSQMHQRLTDLFSIETDIQMRSHSTKTVMDFVNSSDNVIFVHNTIHL
ISQVMDNMVMACGGILPLLSAATSATHELENIEPTQGLSIEASVTFLQRLISLVDVLIFASSLGFTIEIAEKSMSSGGIL
RQCLRLVCAVAVRNCLEQQHSQKTRGDKALKPMHSLIPLGKSAKSPVDIVTGGISPVRDLDRLLQDMDINRLRAVVF
RDIEDSKQAQFLALAVVYFISVLMVSKYRDILEPQNERHSQSCTETGSENNVSLSEITPAAFSTLTASVEEESTSSA
RRRDSGIGEETATGLGSHVEVTPHTAPPGVSAGPDAISEVLSTLSLEVNKSPETKNDRGNDLDTKATPSVSVSKNVNVD
ILRSLVNIPADGVTVDPAALLPPACLGALGDLVEQPQVFRSFRSVIVAAKKSAVSPSTFNTSIPTNAVSVVSSVDSAQA
SDMGGESPGSRSSNAKLPSVPTVDSVSQDPVSNMSITERLEHALEKAAPLLREIFVDFAPFLSRTLLGSHGQELLIEGTS
LVCMKSSSSVVELVMLLCSQEWQNSIQKNAGLAFIELVNEGRLLSQTMDHLVRVANEAEFILSRQRAEDIHRHAEFESL
CAQYSADKREDEKMDHLIRAAKYRDHVTATQLIQKIINILTDKHGAWGNSAVSRPLEFWRLDYWEDDLRRRRRFVRNPL
GSTHPEATLKTAVEHVCIFKLRENSKATDEDILAKGKQSIRSQUALGNQNSENEILLEGDDDTLSSVDEKDLENLAGPVSL

STPAQLVAPSVVVKGTLSTSSSELYFEVDEEDPNFKKIDPKILAYTEGLHGKWLFTIERSIFSRRYLLQNTALEIFMANR
VAVMFNFPDPATVKVNYLPRVGVGTSFGLPQTRRISLASPRQLFKASNMTQRWQHREISNFEYLMFLNTIAGRSYNDL
NQYPVFPWVITNYESEELDLTLPTNFRDLSKPIGALNPKRAAFFAERYESWEDDQVPKFHYGTHYSTASFVLAWLLRIEP
FTTYFLNLQGGKFDHADRTFSSISRWRNSQRDTSIDIKELIPEFYLLPEMFVNFNNYNLGVMDDGTVVSDVELPPWAKTS
EEFVHINRLALESEFVSCQLHQWIDLIFGYKQGGPEAVRALNVFYLLTYEGAVNLNSITDPVLREAVEAQIRSFQTPSQ
LLIEPHPPRGSAMQVSPLMFTDKAQQDVIMVLKFPNSPVTHVAANTQPGLATPAVITVTANRLFVANKWHNLP AHQGAV
QDQPYQLPVEIDPLIASNTGMHRRQITDLLDQSIQVHSQCFVITSNRYILVCGFWDKSFVYSTDTGRLIQVVFHWDV
VTCLARSESYIGGNCYILSGSRDATLLLWYWNGKCSGIGDNPGETAAPRAILTGHDYEVTCAAVCAELGLVLSGSQEGP
CLIHSMNGDLLRTLEGPENCLKPKLIQASREGHCIFYENGLFCTFSVNGKLQATMETDDNIRAIQLSRDGQYLLTGDR
GVVVVRQVSDLKQLFAYPGCDAGIRAMALSYDQRCIISGMASGSIVLFYNDFNRRWHHEYQTRY

NP_109620.2

NP_109620.2 lipopolysaccharide-responsive and beige-like anchor protein isoform
alpha [Mus musculus]

MASEDNRAPSRPPTGDDGGGGGKEETPTEGGALSLKPGLPIRGIRMKFAVLTGLVEVGEVSNRDIVETVFNLLVGGQFDL
EMNFIIQEGESIMCMVELLEKCDVTCQAEVWSMFTAILKKSIRNLQVCTEVGLVEKVLGKIEKVDSMIADLLVMDLGLA
SYNLTVRELKLFSSKLQGDKGQWPPHAGKLLSVLKHMPQKYGPDAFFNFPGKSAAAIAPPIARWPYQNGFTFHTWLRMD
PVNNINVDKDPYLYCFRTSKGLGSAHFVGGCLIIITSIKSKGKGFQHCVKFDFKPKQWYMTIVHIYNRWKNSSELRCYV
NGELASYGEITWVNTSDTFDKCFLGSSETADANRVFCGQMTAVYLFSDALNAAQIFAITYQLGLGYKGTFFKFAESDLFL
AEHHKLLLYDGKLSSAIAFTYNPRATDAQLCLESSPKDNPSIFVHSPHALMLQDVKAULTHSIQSAMHSIGGVQLFPLF
AQLDYKQYLSDEVDLTICTTLLAFIMELLKNSIAMQEQLACKGFLVIGYSLEKSSKSHVSRAVLELCLAFSKYLSNLQN
GMPLLKQLCDHILLNPAVWIHTPAKVQLMLTYLSTEFIGTVNIYNTIRRVGTVLLIMHTLKYYYYWAVNPQDRSGITPKG
LDGPRPNQKEILSLRAFLLMFIKQLVMKDSGVKEDELQAILNYLLTMHEDDNLMDVLQLLVALMAEHPNSMIPAFDQRNG
LRVIYKLLASKSEGIRVQALKALGYFLKHLAPKRKAEVMLGHGLFSLLAERLMLQTNLITMTMYNVLFIEILIEICTQVI
HKQHPDPDSTVKIQNPQILKVIATLLRNSPQCPESEVRR AFLSDMIKLFNNSRENRRSLLQCSVWQEWMLSLCYFNPKN
SDEQKITEMVYAIRILLYHAVKYEWWGVVVDLTSITHSKVTFEIHKENLANIFREEQRKGDEETGPCSSSLVPEGTG
ATRGVDVSVGSQHEDRKDSPISPHFTRNSDENSSIGRASSIDSASNTLQTHDMSSDEKKVERENQELLDQATVEETATN
GAKDDLETSSDAAEPVTINSNSLEPGKDTVITSEVSASISSPSEEDAAEMPELLEKSGVEEEEDDDYVELKVEGSPTEEA
GLPTELQGEGLSVAASEGREEPDMCGHGCEVQEAPITKIHNDPETTSSEDSRFPVATAGSLATSSEVPVPQATVQSDS
HEMLDGGMKATNLAGETESVSDCADNVSEAPATSEQKITKLDVSSVASDTERFELKASTSTEAPQPQRHGLEISRQEQT
AQGTAPDAVDQQRDRSRSTMFRIPEFKWSQMHQRLTDLDFSIEDTIQMWRSHTKTVMDFVNSSDNVIFVHNTIHLISQ
VMDNMVMACGGILPLLSAATSATHELENIEPTQGLSIEASVTFLQRLISLVDVLI FASSLGFTETIEAEKNMSSGGILRQC
LRLVCAVAVRNCLECQHSQKARGDTAKSSKTIHSLIPMGKSAKSPVDIVTGGISPVRDLDRLLQDMDINRLRAVVFR
DIEDSKQAQFLALAVVYFISVLMVSKYRDILEPQDERHSQSLKETSSDNGNASLPDAENTPAEFSSLTSSVEESLEGT
CTRRRDSGLGEETASGLGSLVASPAAPLGVSAGPDAISEVLCTLSLEVNSQETRIDGGNELDRKVTSPVPSKNNV
KDILRSLVNMPADGVTVDPALLPACLGALGDLSDVPPMQFRSFRSVIIATKSSVLPALTTAPSSAVSVSSVDPT
HASDTGGESPGSRSPNAKLPSVAAGVSPQDPAAHMSITERLEHALEKAAPLLREIFVDFAPFLSRTLLGSHGQELLIEG
TSLVCMKSSSSVVELVMLLCSQEWQNSIQKNAGLAFIELVNEGRLLSQTMKDHLVRVANEAEFILSRQRAEDIHRHAEFE
SLCAQYSADKREEKMCDDLIRAAKYRDHVTATQLIQKIINLLTDKHGAWGSSAVSRPREFWRLDYWEDDLRRRRFVRN
PLGSTHPEATLKTAVEHADEDILAKGQSIKSQALGNQNSENEALLEGDDDTLSSVDEKDLENLAGPVSLSTPAQLVAP
SVVVKGTLSTSSSELYFEVDEEDPNFKKIDPKILAYTEGLHGKWLFTIERSIFSRRYLLQNTALEIFMANRVAVMFNFPD
PATVKVNYLPRVGVGTSFGLPQTRRISLATPRQLFKASNMTQRWQHREISNFEYLMFLNTIAGRSYNDLNQYPVFPWV
ITNYESEELDLTLPSNFRDLSKPIGALNPKRAAFFAERFESWEDDQVPKFHYGTHYSTASFVLAWLLRIEPFTTYFLNLQ
GGKFDHADRTFSSISRWRNSQRDTSIDIKELIPEFYLLPEMFVNFNNYNLGVMDDGTVVSDVELPPWAKTSEEFVRINRL
ALESEFVSCQLHQWIDLIFGYKQGGPEAVRALNVFYLLTYEGAVNLNSITDPVLREAVEAQIRSFQTPSQLLIEPHPPR
GSAMQASPLMFTDQAQQDVIMVLKFPNSPVTHVAANTQPGLAMPVITVTANRLFVANKWHNLP AHQGAVQDQPYQLPV
EIDPLIACGTGTHRRQVTDLLDQSIQVHSQCFVITSNRYILVCGFWDKSFVYSTDTGKLIQVVFHWDVVTCLARSES
YIGGNCYILSGSRDATLLLWYWNGKSSGIGDNPGETATPRAILTGHDYEITCAAVCAELGLVLSGSQEGPCLIHSMNGD
LLRTLEGPENCLKPKLIQASREGHCIFYENGLFCTFSVNGKLQATVETDDHIRAIQLSRDGQYLLTGGDNGVVIVRQVS

DLKQLFAYPGCDAGIRAMALSFDQRCIISGMASGSIVLFYNDFNRWHHEYQTRY

NP_001071156.1

NP_001071156.1 lipopolysaccharide-responsive and beige-like anchor protein isoform beta [Mus musculus]

MASEDNRAPSRPPTGDDGGGGGKEETPTEGGALSLKPGLPIRGIRMKFAVLTGLVEVGEVSNRDIVETVFNLLVGGQFDL
EMNFIIQEGESIMCMVELLEKCDVTCQAEVWSMFTAILKKSIRNLQVCTEVGLVEKVLGKIEKVDSMIADLLVDM LGVLA
SYNLTVRELKLFFSKLQGDKGQWPPHAGKLLSVLKHMPQKYGPDAFFNFPGKSAAAIALPPIARWPYQNGFTFHTWLRMD
PVNNINVDKDKPYLYCFRTSKGLGSAHFVGGCLIITSIKSKGKGFQHCVKFDFKPKQWYMTIVHIYNRWKNSSELRCYV
NGELASYGEITWFVNTSDTFDKCFLGSSETADANRVFCGQMTAVYLFSDALNAAQIFAIYQLGLGYKGTFFKAESDLFL
AEHHKLLLYDGKLSAIAFTYNPRATDAQLCLESSPKDNPSIFVHSPHALMLQDVKAVLTHSIQSAMHSIGGVQVLFPLF
AQLDYKQYLSDEVDLTICTTLLAFIMELLKNSIAMQEQLACKGFLVIGYSLEKSSKSHVSRAVLELCLAFSKYLSNLQN
GMPLLKQLCDHILLNPAVWIHTPAKVQLMLYTYLSTEFIGTVNIYNTIRRVGTVLLIMHTLKYYYYWAVNPQDRSGITPKG
LDGPRPNQKEILSLRAFLLMFIKQLVMKDSGVKEDELQAILNYLLTMHEDDNLMDVLQLLVALMAEHPNSMIPAFDQRNG
LRVIYKLLASKSEGIRVQALKALGYFLKHLAPKRKAEVMLGHGLFSLLAERLMLQTNLITMTMYNVLFIEILIEICTQVI
HKQHPDPDSTVKIQNPQILKVIATLLRNSPQCPESMEVRRRAFLSDMIKLFNNSRENRRSLLQCSVWQEWMLSLCYFNPKN
SDEQKITEMVYAIFRILLYHAVKYEWWGWRVWDTLSITHSKVTFEIHKENLANIFREEQRKGDEETGPCSSSLVPEGTG
ATRGVDVSVGSQHEDRKDSPISPHFTRNSDENSSIGRASSIDSANTELQTHDMSSDEKKVERENQELLDQATVEETATN
GAKDDLETSSDAAEPVTINSNSLEPGKDTVITISEVSASISSPSEEDAAEMPELLEKSGVEEEEDDDYVELKVEGSPTEEA
GLPTELQGEGLSVAASEGREEDPMCCHGCEVQVEAPITKIHNDPETTDSEDSRFTVATAGSLATSSEVPVPQATVQSDS
HEMLDGGMKATNLAGETESVSDCADNVSEAPATSEQKITKLDVSSVASDTERFELKASTSTEAPQPQRHGLEISRQGEQT
AQGTAPDAVDQQRDRSRSTMFRIPEFKWSQMHRLLTDLLFSIETDIQMWRSHSTKTVMDFVNSSDNVIFVHNTIHLISQ
VMDNMVMACGGILPLLSAATSATHELENIEPTQGLSIEASVTFLQRLISLVDVLIFASSLGFTIEIAEKNMSSGGILRQC
LRLVCAVAVRNCLEQHQSQLKARGDTAKSSKTIHSLIPMGKSAKSPVDIVTGGISPVRDLRLLQDMDINRLRAVVFR
DIEDSKQAQFLALAVVYFISVLMVSKYRDILEPQDERHSQSLKETSSDNGNASLPDAENTPAEFSSSLTSSVEESLEGT
CTRRRDSGLGEETASGLGSLVASPAAPLGVSAAGDAISEVLCTLSLEVNKSQETRIDGGNELDRKVTSPVPSKNNV
KDILRSLVNMPADGVTVDPALLPACLGALGDLSDPPMQFRSFDRSVIIATKSSVLPALTTSAPSSAVSVSSVDPT
HASDTGGESPGSRSPNAKLPSVAAGVSPQDPAHMSITERLEHALEKAAPLLREIFVDFAPFLSRTLLGSHGQELLIEG
TSLVCMKSSSSVVELVMLLCSQEWQNSIQKNAGLAFIELVNEGRLLSQTMKDHLVRVANEAEFILSRQRAEDIHRHAEFE
SLCAQYSADKREEEKMDHLIRAAKYRDHVTATQLIQKIINLLTDKHGAWGSSAVSRPREFWRLDYWEDDLRRRRRFRVN
PLGSTHPEATLKTAVEHAADEDILAKGKQSIKSQALGNQNSENEALLEGDDDTLSSVDEKDLENLAGPVSLSTPAQLVAP
SVVVKGTLSVTSSELYFEVDEEDPNFKKIDPKILAYTEGLHGKWLFTIERSIFSRRYLLQNTALEIFMANRVAVMFNFPD
PATVKKVVNYLPRVGVGTSFGLPQTRRISLATPRQLFKASNMTRWQHREISNFEYLMFLNTIAGRSYNDLNQYPVPWV
ITNYESEELDLTLPSNFRDLSKPIGALNPKRAAFFAERFESWEDDQVPKFHYGTHYSTASFVLAWLLRIEFTTYFLNLQ
GGKFDHADRTFSSVSRAWRNSQRDTSIDIKELIPEFYYPPEMFVNFNYYNLGVMDDGTVVSDVELPPWAKTSEEFVRINRL
ALESEFVSCQLHQWIDLIFGYKQGPFAVRALNVFYLYTEGAVNLNSITDPVLREAVEAQIRSFGQTPSQLLIEPHPPR
GSAMQASPLMFTDQAQQDVIMVLKFPSNSPVTHVAANTQPGLAMPAVITVTANRLFAVNKWHNLPAHQGAVQDQPYQLPV
EIDPLIACGTGTHRRQVTDLLDQSIQVHSQCFVITSNRYILVCGFWDKSFVYSTDTGKLIQVVFGHWDVVTCLARSES
YIGGNCYILSGSRDATLLLWYWNGKSSGIGDNPGETATPRAILTGHDYEITCAAVCAELGLVLSGSQEGPCLIHSMNGD
LLRTLEGPENCLKPKLIQASREGHCVIFYENGCFCTFSVNGKLQATVETDDHIRVSAVGSTLFLLLGSSK

NP_001071155.1

NP_001071155.1 lipopolysaccharide-responsive and beige-like anchor protein isoform gamma [Mus musculus]

MASEDNRAPSRPPTGDDGGGGGKEETPTEGGALSLKPGLPIRGIRMKFAVLTGLVEVGEVSNRDIVETVFNLLVGGQFDL
EMNFIIQEGESIMCMVELLEKCDVTCQAEVWSMFTAILKKSIRNLQVCTEVGLVEKVLGKIEKVDSMIADLLVDM LGVLA
SYNLTVRELKLFFSKLQGDKGQWPPHAGKLLSVLKHMPQKYGPDAFFNFPGKSAAAIALPPIARWPYQNGFTFHTWLRMD
PVNNINVDKDKPYLYCFRTSKGLGSAHFVGGCLIITSIKSKGKGFQHCVKFDFKPKQWYMTIVHIYNRWKNSSELRCYV
NGELASYGEITWFVNTSDTFDKCFLGSSETADANRVFCGQMTAVYLFSDALNAAQIFAIYQLGLGYKGTFFKAESDLFL
AEHHKLLLYDGKLSAIAFTYNPRATDAQLCLESSPKDNPSIFVHSPHALMLQDVKAVLTHSIQSAMHSIGGVQVLFPLF

AQLDYKQYLSDEVDLTICTTLLAFIMELLKNSIAMQEQLLACKGFLVIGYSLEKSSKSHVSRVLELCLAFSKYLSNLQN
 GMPLLKQLCDHILLNPAVWIHTPAKVQLMLTYLSTEFIGTVNIYNTIRRVGTVLLIMHTLKYYYYWAVNPQDRSGITPKG
 LDGPRPNQKEILSLRAFLLMFIKQLVMKDSGVKEDELQAILNYLLTMHEDDNLMDVLQLLVALMAEHPNSMIPAFDQRNG
 LRVIYKLLASKSEGIRVQALKALGYFLKHLAPKRKAEVMLGHGLFSLLAERLMLQTNLITMTMYNVLFIEILIEICTQVI
 HKQHPDPDSTVKIQNPQILKVIATLLRNSPQCPESEMEVRRFLSDMIKLFNNSRENRRSLLQCSVWQEWMLSLCYFNPKN
 SDEQKITEMVYAFIRILLYHAVKYEWGGWRVWVDTLSTHSHKVTFEIHKENLANIFREEQRKGDEETGPCSSSLVPEGTG
 ATRGVDVSVGSQHEDRKDSPISPHFTRNSDENSSIGRASSIDSASNTTELQTHDMSSDEKKVERENQELLDQATVEETATN
 GAKDDLETSSDAAEPVTINSNSLEPGKDTVITISEVSASISSPSEEDAAEMPELLEKSGVEEEEDDDYVELKEGSPTEEA
 GLPTTELQGEGLSVAASEGREEDPMCCHGCEVQVEAPITKIHNDPETTSSEDSRFTVATAGSLATSSEVPVPQATVQSDS
 HEMLDGGMKATNLGETESVSDCADNVSEAPATSEQKITKLDVSSVASDTERFELKASTSTEAPQPQRHGLEISRQEQQT
 AQGTAPDAVDQQRDRSRSTMFRIPEFKWSQMHQRLTDLFSIETDIQMWRSHSTKTVMDFVNSSDNVIFVHNTIHLISQ
 VMDNMVMACGGILPLLSAATSATHELENIEPTQGLSIEASVTFLQRLISLVDVLIFASSLGFTIEIAEKNMSSGGILRQC
 LRLVCAVAVRNCLECCQHSQKARGDTAKSSKTIHSLIPMGKSAKSPVDIVTGGISPVRDLDRLLQDMDINRLRAVVF
 DIEDSKQAQFLALAVVYFISVLMVSKYRDILEPQDERHSQSLKETSSDNGNASLPDAENTPAEFSSLTSSVEESLEGT
 CTRRRDSGLGEETASGLGSLVASPAAPLGVSAGDAISEVLCTLSLEVNKSQETRIDGGNELDRKVTSPVPSKNVNV
 KDILRSLVNMPADGVTVDPALPPACLGALGDLSDVPPMQFRSFRSVIIATKKSSVLPALTTSAPSSAVSVSSVDPT
 HASDTGGESPGSRSPNAKLPSVAAGVSPQDPAAHMSITERLEHALEKAAPLLREIFVDFAPFLSRTLLGSHGQELLIEG
 TSLVCMKSSSSVVELVMLLCSQEWQNSIQKNAGLAFIELVNEGRLLSQTMDHLVRVANEAEFILSRQRAEDIHRHAEFE
 SLCAQYSADKREEEKMCDHLIRAAKYRDHVTATQLIQKIINLLTDKHGAWGSSAVSRPREFWRLDYWEDDLRRRRRFRN
 PLGSTHPEATLKTAVEHADEDILAKGKQSIKSQLGNQNSENEALLEGDDDTLSSVDEKDLENLAGPVSLSTPAQLVAP
 SVVVKGTLSVTSSELYFEVDEEDPNFKKIDPKILAYTEGLHGKWLFTIERSIFSRRYLLQNTALEIFMANRVAVMFNFPD
 PATVKKVVNYLPRVGVGTSFGLPQTRRISLATPRQLFKASNMTQRWQHREISNFEYLMFLNTIAGRSYNDLNQYPVFPWV
 ITNYESEELDLTLPNSFRDLSKPIGALNPKRAAFFAERFESWEDDQVPKFHYGTHYSTASFVLAWLLRIEPFTTYFLNLQ
 GGFDFHADRTFSSVSRAWNSQRDTSIDIKELIPEFYFLPEMFVNFNNYNLGMDDGTVVSDVELPPWAKTSEEFVRINRL
 ALESEFVSCQLHQWIDLIFGYKQGPQEAVALNVFYLYTYEGAVNLNSITDPVLREAVEAQIRSFQGTSPQLLIEPHPPR
 GSAMQASPLMFTDQAQQDVIMVLKFPSNSPVTHVAANTQPGLAMPAVITVTANRLFVAVNKWHNLPAHQGAVQDQPYQLPV
 EIDPLIGLSLLSLFAIH

sp|P42681.3|TXK_HUMAN

sp|P42681.3|TXK_HUMAN RecName: Full=Tyrosine-protein kinase TXK; AltName:
 Full=Protein-tyrosine kinase 4; AltName: Full=Resting lymphocyte kinase
 MILSSYNTIQSVFCCCCSVQKRQMRQTISLSTDEELPEKYTQRRRPWLSQLSNKKQSNTRGVQPSKRKPLPPLPSEV
 AEEKIQVKALYDFLPREPCNLALRRAEEYLILEKYNPHWWKARDRLGNEGLIPSNYVTENKITNLEIYEWYHRNITRNQA
 EHLLRQESKEGAFIVRDSRHLGSYITISVFMGARRSTEAIAIKHYQIKKNDSGQWYVAERHAFQSIPELIWYHQHNAAGLMT
 RLRYPVGLMGSCLPATAGFSYEKWEIDPSELAFIKEIGSGQFGVVHLGEWRSHIQVAIKAINEGSMSEEDFIEEAKVMMK
 LSHSKLVQLYGVCIQRKPLYIVTEFMENGCLLNYLRENKGKLRKEMLLSVCQDICEGMEYLERNGYIHRDLAARNCLVSS
 TCIVKISDFGMTRYVLDDEYVSSFGAKFPIKWSPPPEVFLFNKYSSKSDVWSFGVLMWEVFTTEGMPFENKSNLQVVEAIS
 EGFRLYRPHLAPMSIYEVMYSCWHEKPEGRPTFAELLRAVTEIAETW

NP_001032720.1

NP_001032720.1 cytotoxic T-lymphocyte protein 4 isoform CTLA-4delTM [Homo sapiens]

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRGIAFVCEYASPGKATEVRVTVLRQADSQ
 VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYLIGIGNGTQIYVIAKEKKPSY
 NRGLCENAPNRARM

sp|002757.1|CD28_FELCA

sp|002757.1|CD28_FELCA RecName: Full=T-cell-specific surface glycoprotein CD28;
 AltName: CD_antigen=CD28; Flags: Precursor
 MILRLLLALNFFPSIQVTENKILVKQLPRLVVYNNEVNLSCKYTHNFFSKEFRASLYKGVDSAVEVCVNGNYSHQPQFY
 SSTGFDCDGKLGNETVTFYLRNLFVNQTDIYFCKIEVMYPPPYIDNEKSNGTIIHVKEKHLCPAQLSPESSKPFWALVVV

GGILGFYSLLATVALGACWMKTKRSRILQSDYMNMTPRRPGPTRRHYQPYAPARDFAAAYRS
NP_001009844.1
NP_001009844.1 T-cell-specific surface glycoprotein CD28 precursor [Felis catus]
MILRLLLALNFFPSIQVTENKILVKQLPRLVVYNNEVNLSCKYTHNLSKEFRASLYKGVDSAVEVCVVNGNYSHQPQFY
SSTGFDGCDGKLGNETVTFYLRNLFVNQTDIYFCKIEVMYPPPYIDNEKSNGTIIHVKEKHLCPAQLSPESSKPFWALVVV
GGILGFYSLLATVALGACWMKTKRSRILQSDYMNMTPRRPGPTRRHYQPYAPARDFAAAYRS
NP_999314.1
NP_999314.1 cytotoxic T-lymphocyte protein 4 precursor [Sus scrofa]
MACSGFRSHGAWLELTSRTWPCTALFSLFIPVFSKGMHVAQPAVVLANSRGVASFVCEYGSAGKAAEVRVTVLRRAGSQ
MTEVCAATYTVDELTFLLDDSTCTGTSTENKVNLTIQGLRAVDGTGLYICKVELLYPPPPYVGMNGTQIYVIDPEPCPDS
DFLLWILAAVSSGLFFYSFLITAVSLSKMLKKRSPLTTGVYVKMPPTPECEKQFQPYFIPIN
NP_998795.1
NP_998795.1 B- and T-lymphocyte attenuator precursor [Rattus norvegicus]
MKTVPAMLVTPRSFREFFILLGLWSILCKEPTKRIGEERCVQLKIKRNSRSATWGELFKIECPVTYCVHRPNVTWCKH
NGTRCVPLEVGPQLHTSWVENDQASAFVLYFEPHLSDDGVYTCSANLNSEVINSHSVVIHVTTERTQNCSEHPLITASDI
PDATNASRPSTMEERPGRWTWLLYALLPLGTSLLLLACVCLLCFLRRIQKEKKPSDLAGRERETNLVDIPVSSRTNSQIL
TSETGIYDNDPWSRLGESESTISSQLEGKQGIYVYASLNHCVIGRTPRQASKIQEAPTEYASICVRS
NP_990642.1
NP_990642.1 T-cell-specific surface glycoprotein CD28 homolog precursor [Gallus gallus]
MLGILVVLCLIPAADV TENKILVAQRPLLIVANRTATLVCNYTYNGTGKEFRASLHKGTDSAVEVCFISWNMTKINSNSN
KEFNCRGIHDKDKVIFNLWNMSASQTDIYFCKIEAMYPPPYVYNEKSNGTVIHVRETPIQTQEPESATS YWVMVAVTGLL
GFYSMLITAVFIIYRQKSKRNRYRQSDYMNMTPRHPPHQKNKGYPYAPTRDYTA YRSWQP
NP_032882.2
NP_032882.2 protein kinase C eta type isoform 1 [Mus musculus]
MSSGTMKFNGYLVRVIGEAVGLQPTRWSLRHSLFKKGHQLLDPYLTVSVDQVRVGQTSTKQKTNKPTYNEEFCANVTDGG
HLELAVFHETPLGYDHFVANCTLQFQELLRTAGTSDTFEGWVDLEPEGKV FVVITLTGSFTEATLQRDRIFKHFRKRQR
AMRRRVHQVNGHKFMATYLRQPTYCSHCREFIWGVFGKQGYQCQVCTCVVHKRCHHLIVTACTCQNNINKVDAKIAEQRF
GINIPHKFNVHNYKVPTFCDHCGSLLWGIMRQGLQCKICKMNVHIRCANVAPNCGVNAVELAKTLAGMGLQPGNISPTS
KLISRSTLRRQKQEGSKEGNGIGVNSSSRFGIDNFEFIRVLGKGSFGKVM LARIKETGELYAVKVLKKDVILQDDDVECT
MTEKRILSLARNHPFLTQLFCCFQTPDRLFFVMEFVNGDLMFH IQKSRRFDEARARFYAAEIISALMFLHEKGIIYRDL
KLDNVLLDHEGHCKLADFGMCKEGICNGVTTATFCGTPDYIAPEILQEMLYGPAVDWAMGVLLYEMLCGHAPFEAENED
DLFEAILNDEVVYPTWLHEDATGILKSFMTKNPTMRGLSLTQGGHEILRHPFFKEIDWAQLNHRQLEPPFRPRIKSRED
VSNFDPDFIKEEPVLTPIDEGHLP MINQDEFNRNFSYVSPQL
NP_851347.1
NP_851347.1 T-cell-specific surface glycoprotein CD28 precursor [Bos taurus]
MLRLLLALNFFPSIQVAENKILVKQSPMLVVNDNEVNLSCKYTYNLSKEFRASLYKGADSAVEVCAVNGNHSHP LQSTN
KEFNCTVKVGNETVTFYLQDLYVNQTDIYFCKLEVLYPPPYIDNEKSNGTIIHVKEKHLCPSPRSPESSKPFWALVVVNG
VLVFYSLLVTVALSNCWMKNKRNRLQSDYMNMTPRRPGPTRRHYQPYAPARDFAAAYRS
sp|P16410.3|CTLA4_HUMAN
sp|P16410.3|CTLA4_HUMAN RecName: Full=Cytotoxic T-lymphocyte protein 4; AltName:
Full=Cytotoxic T-lymphocyte-associated antigen 4; Short=CTLA-4; AltName:
CD_antigen=CD152; Flags: Precursor
MACLGFQRHKAQLNLARTWPCTLLFFLLFIPVFCAMHVAQPAVVLASSRG IASFVCEYASPGKATEVRVTVLRQADSQ
VTEVCAATYMMGNELTFLLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYLGLIGNGTQIYVIDPEPCPDS
DFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPECEKQFQPYFIPIN
NP_005205.2
NP_005205.2 cytotoxic T-lymphocyte protein 4 isoform CTLA4-TM precursor [Homo

sapiens]
MACLGFRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRGIAFVCEYASPGKATEVRVTVLRQADSQ
VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYLGLIGNGTQIYVIDPEPCPDS
DFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPECEKQFQPYFIPIN
sp|Q9MYX7.1|CTLA4_PIG
sp|Q9MYX7.1|CTLA4_PIG RecName: Full=Cytotoxic T-lymphocyte protein 4; AltName:
Full=Cytotoxic T-lymphocyte-associated antigen 4; Short=CTLA-4; AltName:
CD_antigen=CD152; Flags: Precursor
MACSGFQSHGAWLELTSRTWPCTALFSLFIPVFSKGMHVAQPAVVLANSRGVASFVCEYGSAGKAAEVRVTVLRRAGSQ
MTEVCAATYTVDELTFLLDDSTCTGTSTENKVNLTQGLRAVDGTGLYICKVELLYPPPYVGMNGTQIYVIDPEPCPDS
DFLLWILAAVSSGLFFYSFLITAVSLSKMLKKRSPLTTGVYVKMPPTPECEKQFQPYFIPIN
NP_067371.1
NP_067371.1 programmed cell death 1 ligand 2 precursor [Mus musculus]
MLLLLPILNLSLQLHPVAALFTVTAPKEVYTVVDVGSSVSLECDFDRRECTELEGRASLQKVENDTSLQSERATLLEEQL
PLGKALFHIPSQVQRDSGQYRCLVICGAADYKYLTVKVKASYMRIDTRILEVPGTGEVQLTCQARGYPLAEVSWQNVSV
PANTSHIRTPEGLYQVTSVLRLLKPQPSRNFSCMFNAHMKELTSAIIDPLSRMEPKVPRTWPLHVFIPACTIALIFLAIV
IIQRKRI
NP_006130.1
NP_006130.1 T-cell-specific surface glycoprotein CD28 isoform 1 precursor [Homo
sapiens]
MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVYGNYSQQLQVYS
KTGFNCDCGKLGNESVTFYLNLYVNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSPFPGPSKPFWVLVVVG
GVLACYSLLVTVAFIIFWVRSKRSRLLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYRS
NP_005182.1
NP_005182.1 T-lymphocyte activation antigen CD80 precursor [Homo sapiens]
MGHTRRQGTSPSKCPYLNFQLLVLAGLSHFCSGVIHVTKEVKEVATLSCGHNVSVVEELAQTRIYWQKEKKMVLTMMSGD
MNIWPEYKNRTIFDITNNLSIVILALRPSDEGTYESVVLKYEKDAFKREHLAEVTLVSKADFPTPSISDFEIPSTNIRRI
ICSTSGGFPEPHLSWLENGEELNAINTTVSQDPETELYAVSSKLDFNMNTNHSFMCLIKYGHRLVNTFNWNTTKQEHFP
DNLLPSWAITLISVNGIFVICCLTYCFAPRCRERRRNERLRRESVRPV
NP_004186.1
NP_004186.1 tumor necrosis factor receptor superfamily member 18 isoform 1
precursor [Homo sapiens]
MAQHGMAGAFRALCGLALLCALSLGQRPTGGPGCGPGRLLLTGTGDARCCRVHTTRCCRDYPGEECCSEWDCMCVQPEFH
CGDPCCCTTCRHHPCPPGQGVQSQGKFSFGFQCIDCASGTFSGGHEGHCKPWTDCQFGFLTVPFGNKTHNAVCPGSPPA
EPLGWLTVVLLAVAACVLLLTSAQLGLHIWQLRSQCMWPRETQLLLEVPSTEDARSCQFPEEERGERSAEEKGRLGDLW
V
sp|Q28071.1|CD28_BOVIN
sp|Q28071.1|CD28_BOVIN RecName: Full=T-cell-specific surface glycoprotein CD28;
AltName: CD_antigen=CD28; Flags: Precursor
MLRLLLALNFFPSIQVAENKILVKQSPMLVVNDNEVNLCKYTYNLSKEFRASLYKGADSAVEVCAVNGNHSPLQSTN
KEFNCTVKVGNETVTFYLDLYVNQTDIYFCKLEVLYPPPYIDNEKSNGTIIHVKEKHLCPSPRSPESKPFWALVVVNG
VLVFYSLLVTVALSNCWMKNRMLQSDYMNMTPRRPGPTRRHYQPYAPARDFAAYRS
sp|P42069.1|CD28_RABIT
sp|P42069.1|CD28_RABIT RecName: Full=T-cell-specific surface glycoprotein CD28;
AltName: CD_antigen=CD28; Flags: Precursor
MILRLLAFNFFPSIQGTENKILVKQSPMLVVNNNEVNLCKYTYNLSKEFRASLYKGADSAVEVCAVNGNFSHPHQFH
STTGFCNDCGKLGNETVTFYLNLYVNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKEQHFCPAHPSPKSSTLFWVLVVV
GAVLAFYSMLVTVALFSCWMKSKKNRLLQSDYMNMTPRRPGPTRKHYPYAPARDFAAYRS

sp|P33681.1|CD80_HUMAN
 sp|P33681.1|CD80_HUMAN RecName: Full=T-lymphocyte activation antigen CD80;
 AltName: Full=Activation B7-1 antigen; AltName: Full=BB1; AltName: Full=CTLA-4
 counter-receptor B7.1; Short=B7; AltName: CD_antigen=CD80; Flags: Precursor
 MGHTRRQGTSPSKCPYLNFFQLLVLAGLSHFCSGVIHVTKVEKAVATLSCGHNVSVVEELAQTRIYWQKEKKMVLTMMSGD
 MNIWPEYKNRTIFDITNNLSIVILALRPSDEGTIECVVLKYEKDAFKREHLAEVTL SVKADFPTPSISDFEIPTSNIRRI
 ICSTSGGFPEPHLSWLENGEELNAINTTVSQDPETELYAVSSKLDFNMTTNHSMCLIKYGHLRVNQTFNWNTTKQEHFP
 DNLLPSWAITLISVNGIFVICCLTYCFAPRCRERRRNERLRRESVRPV
 sp|P31043.1|CD28_CHICK
 sp|P31043.1|CD28_CHICK RecName: Full=T-cell-specific surface glycoprotein CD28
 homolog; AltName: Full=CHT28; Flags: Precursor
 MLGILVVLCLIPAADVTENKILVAQRPLLIVANRTATLVCNYTYNGTGKEFRASLHKGTDSAVEVCFISWNMTKINSNSN
 KEFNCRGIHDKDKVIFNLWNMSASQTDIYFCKIEAMYPPPYVYNEKSNGTVIHVRETPIQTQEPESATSYYWVMVAVTGLL
 GFYSMLITAVFIIYRQKSKRNRQRSDYMNMTPRHPPHQKNKGYPYAPTRDYTA YRSWQP
 sp|P10747.1|CD28_HUMAN
 sp|P10747.1|CD28_HUMAN RecName: Full=T-cell-specific surface glycoprotein CD28;
 AltName: Full=TP44; AltName: CD_antigen=CD28; Flags: Precursor
 MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVYGNYSQQLQVYS
 KTGFCNCDGKLGNESVTFYLNLYVNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSPLPFGPSKPFWVLVVVG
 GVLACYSLLVTVAFIIFWVRSKRSRLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYRS
 NP_001333735.1
 NP_001333735.1 endophilin-B2 isoform 4 [Mus musculus]
 MDFNMKKLASDAGIFFTRAVQFTEEFKGQAEKTELDAHFENLLARADSTKNWTERILRQTEVLLQPNPSARVEEFLYEKL
 DRKVP SRVTNGELLAQYMAEAASELGPSTPYGKTLIKVSEAEKRLGAAERDFIHTASLSFLTPLRNFLEGDWKTISKERR
 LLQNRRLDLDAKARLKAKAAAEAKATCEGDTVPDFQETRPRNYILSASASALWNDEVDAEQELRVAQTEFDRQAEVTR
 LLLEGISSTHVNLRLCLHEFVKSQTTYAAQCYRHMLDLQKQLGSSQGAIFPGTFVGTTEPASPLSSTSPTTTAATMPVV
 PTGAVLAPPEEAALCLEEVAPPASGTRKARVLYDYEAADSSSELALLADELITVYSLPGMDPDWLIGERGKKGKVPVTYL
 ELLS
 NP_001349817.1
 NP_001349817.1 endophilin-B2 isoform 5 [Mus musculus]
 MDFNMKKLASDAGIFFTRAVQFTEEFKGQAEKTELDAHFENLLARADSTKNWTERILRQTEVLLQPNPSARVEEFLYEKL
 DRKVP SRVTNGELLAQYMAEAASELGPSTPYGKTLIKVSEAEKRLGAAERDFIHTASLSFLTPLRNFLEGDWKTISKERR
 LLQNRRLDLDAKARLKAKAAAEAKATAEQELRVAQTEFDRQAEVTRLLLEGISSTHVNLRLCLHEFVKSQTTYAAQCYR
 HMLDLQKQLGRFPGTFVGTTEPASPLSSTSPTTTAATMPVVPTGAVLAPPEEAALCLEEVAPPASGTRKARVLYDYEA
 DSSSELALLADELITVYSLPGMDPDWLIGERGKKGKVPVTYLELLS
 NP_787058.5
 NP_787058.5 T-lymphocyte activation antigen CD86 isoform 1 precursor [Homo
 sapiens]
 MDPQCTMGLSNILFVMAFLLSGAAPLKIYAFNETADLPCQFANSQNSLSELVVFWDQENLVLNEVYLGKEKFDVSHS
 KYMGRTSFDSDSWTLRLHNLQIKDKGLYQCIIHHKKPTGMIRIHQMNSELSVLNFSQPEIVPISNITENVYINLTCCSSI
 HGYPEPKKMSVLLRTKNSTIEYDGMQKSQDNVTELYDVSISLSVSFPDVTSNMTIFCILETDKTRLLSSPFSIELED PQ
 PPPDHIPWITAVLPTV IICVMVFCLILWKWKKKRPRNSYKCGTNTMERESEQTKKREKIHIPERSDEAQRVFKSSKTS
 SCDKSDTCF
 NP_001074550.1
 NP_001074550.1 glutaminase kidney isoform, mitochondrial isoform 1 [Mus
 musculus]
 MMRLRGSAMLRLLLLRPPAAVGAVLRRAPLGTLCRRPRGGSRP TAGLVAAARLHPWWGGGGRAGKPGAGGLSSSPSEIL
 QELGKGGTPPQQQQQQQQPGASPPAAPGPKDSPGETDAFGNSEGKEMVAAGDNKIKQGLLPSLEDLLFYTIAEGQE KIP

VHKFITALKSTGLRTSDPRLKECMDMLRLTLQTTS DGVMLDKDLFKKCVQSNIVLLTQA FRRK FVIPDFMSFTSHIDELY
ESAKKQSGGKVADYIPQLAKFSPDLWGVSVCTVDGQRHSIGDTKVPFCLQSCVKPLKYAIAVNDLGTEYVHRYVGKEPSG
LRFNKLFLNEDDKPHNPMVNAGAIIVTSLIKQGVNNAEKFDYVMQFLNKMAGNEYVGFSNATFQSERESGDRNFAIGYYL
KEKKCFPEGTDMVGILDYFYLCSIEVTCESASVMAATLANGGFCPITGERVLSPEAVRNTLSLMHSCGMYDFSGQFAFH
VGLPAKSGVAGGILLVVPNVMGMMCWSPPLDKMGNSVKGIHFCHDLVSLCNFHNVDNLRHFAKKLDPRREGGDQVRKSVI
NLLFAAYTGDVSALRRFALSAMDMEQRDYDSRTALHVA AAAEGHVEVVKFLL EACKVNPFPKDRWNNTPMDEALHFGHHDV
FKILQEYQVQYTPQGDSDDGKGNQTVHKNLDGLL

XP_016017445.1

XP_016017445.1 T-cell-specific surface glycoprotein CD28 isoform X2 [Rousettus aegyptiacus]

MLVVYNNVAVNLCKYTYNLSKEFRASLYKGADSAVEVCVVNGNYSHQLPFRSATGFNC DGKLGNETVTFYLWNLYVNQT
DIYFCKIEVMYPPPYIDNEKSNGTIIHVKENRLCPAHQFPDSSKPFWALVVGGVLGFYSLLVTIAFCVCWRKSKRNRIL
QSDYMNMRPRRPGPTRKLYQPYVPARDFAA YRS

XP_016017444.1

XP_016017444.1 T-cell-specific surface glycoprotein CD28 isoform X1 [Rousettus aegyptiacus]

MILRLLLALNFFPSIQVTENKILVKQSPMLVVYNNVAVNLCKYTYNLSKEFRASLYKGADSAVEVCVVNGNYSHQLPFR
SATGFNC DGKLGNETVTFYLWNLYVNQTDIYFCKIEVMYPPPYIDNEKSNGTIIHVKENRLCPAHQFPDSSKPFWALVVV
GGVLGFYSLLVTIAFCVCWRKSKRNRILQSDYMNMRPRRPGPTRKLYQPYVPARDFAA YRS

XP_036012250.1

XP_036012250.1 cytotoxic T-lymphocyte protein 4 isoform X1 [Mus musculus]

MTEVCATTFTEKNTVGFLDYFPCSGTFNFSRVNLTIIQGLRAVD TGLYLCKVELMYPPPYFVGMGNGTQIYVIDPEPCPDS
DFLLWILVAVSLGLFFYSFLVTAVSLSKMLKKRSPLTTGVYVKMPPTTEPECEKQFQPYFIPIN

NP_001106854.1

NP_001106854.1 glutaminase kidney isoform, mitochondrial isoform 2 [Mus musculus]

MMRLRGSAMLRELLLRPPAAVGAVLRRAPLGTLCRRPRGGSRTAGLVAAARLHPWWGGGGRAKGPGAGGLSSSPSEIL
QELGKGGTTPPQQQQQQQPGASPPAAPGPKDSPGETDAFGNSEGKEMVAAGDNKIKQGLLPSLEDLLFYTIAEGQEKIP
VHKFITALKSTGLRTSDPRLKECMDMLRLTLQTTS DGVMLDKDLFKKCVQSNIVLLTQA FRRK FVIPDFMSFTSHIDELY
ESAKKQSGGKVADYIPQLAKFSPDLWGVSVCTVDGQRHSIGDTKVPFCLQSCVKPLKYAIAVNDLGTEYVHRYVGKEPSG
LRFNKLFLNEDDKPHNPMVNAGAIIVTSLIKQGVNNAEKFDYVMQFLNKMAGNEYVGFSNATFQSERESGDRNFAIGYYL
KEKKCFPEGTDMVGILDYFYLCSIEVTCESASVMAATLANGGFCPITGERVLSPEAVRNTLSLMHSCGMYDFSGQFAFH
VGLPAKSGVAGGILLVVPNVMGMMCWSPPLDKMGNSVKGIHFCHDLVSLCNFHNVDNLRHFAKKLDPRREGGDQRHSFGP
LDYESLQELALKDTVWKKVSPESDDTSTTVVYRMESLGERS

NP_001073911.1

NP_001073911.1 putative sodium-coupled neutral amino acid transporter 8 [Homo sapiens]

MEGQTPGSRGLPEKPHPATAAATLSSMGAVFILMKSALGAGLLNFPWAFSKAGGVPAFLVELVSLVFLISGLVILGYAA
AVSGQATYQGVVRGLCGPAIGKLCEACFLNLLMISVAFLRVIGDQLEKLCDSLLSGTPPAPQPWYADQRFTLPLLSVLV
ILPLSAPREIAFQKYTSILGTLAACYLALVITVQYYLWPQGLVRESHPSLSPASWTSVFSVFPTICFGFQCHEAAVSIYC
SMRKRSLSHWALVSVLSLLACCLIIYSLTG VYGFLTFTGTEVSADVLSYPGNDMVIIVARVLFVAVSIVTVYPIVLFLGRSV
MQDFWRRSCLGGWGPSALADPSGLWVRMPLTILWVTVTLAMALFMPDLSEIVSIIGGISSFFIFIFPGLCLICAMGVEPI
GPRVKCCLEVWGVVSVLVGTGTFIFGQSTAAAVWEMF

NP_001019520.2

NP_001019520.2 tumor necrosis factor receptor superfamily member 18 precursor [Rattus norvegicus]

MGAWAMLYGVS LICVLDLGQQSIAEPPSCGPGRVRNGTGTNTRCCSLCGPDKEDCPKGRICVKPEYHCEDPQCKTCKHY
PCQPQQRVESQGNIKFGFQCVD CAMGTF SAGREGHCRLWTNCSQFGFLTVPFGNKTHNAVCIPEPLPTEQYGH LTVIFLV

MAACILFLTTVQLGLHIWQLRRQHTCPRDTQPLLEVQLPPAEDACSFQFPEEERGEQMEEKCRLGDRWP
NP_001129662.1
NP_001129662.1 lymphocyte transmembrane adapter 1 isoform b [Homo sapiens]
MRSHFLQWALATSRNKDQITNIFSGFAGLLAILLVAVFCILWNWNKRKKRQVPYLRVTVMPLLTLPQTRQRAKNIYDIL
PWRQEDLGRHESRSMRIFSTESLLSRNSESPEHVPSQAGNAFQEHTAHIHATEYAVGIYDNAMVPQMCGNLTPSAHCINV
RASRDCASISSEDSHDYVNVPTAEIEAETLASTKSPSRNLFVLPSTQKLEFTEERDEGCGDAGDCTSLYSPGAEDSDSLS
NGEGSSQISNDYVNMGTGLDLSAIQRQLWVAFQCCRDYENVPAADPSGSQQQAEDVPSSNIGHVEDKTDDPGTHVQCCK
RTFLASGDYADFQPFQTQSEDSQMKHREEMSNESSDYENVLTAKLGGRDSEQGPGTQLLPDE
NP_113862.1
NP_113862.1 cytotoxic T-lymphocyte protein 4 precursor [Rattus norvegicus]
MACLGLQRYKTHLQLPSRTWPFGLVLLSLLFIPIFSEAIQVTQPSVVLASSHGVSFPCEYASSHNTDEVRTVLRQTNDQ
VTEVCATFTTVKNTLGLDDPFCSGTFNESRVNLTIQGLRAADTGLYFCKVELMYPPPYFVGMGNGTQIYVIDPEPCPDS
DFLLWILAAVSSGLFFYSFLVTAVSLNRTLKKRSPLTTGVYVKMPPTPEPECEKQFQPYFIPIN
NP_060243.2
NP_060243.2 lymphocyte transmembrane adapter 1 isoform a [Homo sapiens]
MDGVTPTLSTIRGRTLESSTLHVTPRSLDRNKDQITNIFSGFAGLLAILLVAVFCILWNWNKRKKRQVPYLRVTVMPLL
TLPQTRQRAKNIYDILPWRQEDLGRHESRSMRIFSTESLLSRNSESPEHVPSQAGNAFQEHTAHIHATEYAVGIYDNAMV
PQMCGNLTPSAHCINVRASRDCASISSEDSHDYVNVPTAEIEAETLASTKSPSRNLFVLPSTQKLEFTEERDEGCGDAGD
CTSLYSPGAEDSDSLSNGEGSSQISNDYVNMGTGLDLSAIQRQLWVAFQCCRDYENVPAADPSGSQQQAEDVPSSNIGH
VEDKTDDPGTHVQCCKRTFLASGDYADFQPFQTQSEDSQMKHREEMSNESSDYENVLTAKLGGRDSEQGPGTQLLPDE
XP_030181174.1
XP_030181174.1 T-cell-specific surface glycoprotein CD28 isoform X3 [Lynx
canadensis]
MEENKILVKQLPRLVVYNNEVNLCKYTHNLSKEFRASLYKGVDSAVEVCVNGNYSHQPQFYSSSTGFDCDGKLGNETV
TFYLRNLVFNQTDIYFCKIEVMYPPPYIDNEKSNGTIIHVKEKHLCPAQLSPESSKPFWALVVVGILGFYSLLATVALG
ACWMKTKRSRILQSDYMNMTPRRPGPTRRHYPYAPARDFAAAYS
XP_030181173.1
XP_030181173.1 T-cell-specific surface glycoprotein CD28 isoform X2 [Lynx
canadensis]
MILRLLALNFFPSIQVTENKILVKQLPRLVVYNNEVNLCKYTHNLSKEFRASLYKGVDSAVEVCVNGNYSHQPQFY
SSTGFDCDGKLGNETVTFYLRNLVFNQTDIYFCKIEVMYPPPYIDNEKSNGTIIHVKEKHLCPAQLSPESSKPFWALVVV
GGILGFYSLLATVALGACWMKTKRSRILQSDYMNMTPRRPGPTRRHYPYAPARDFAAAYS
XP_030181172.1
XP_030181172.1 T-cell-specific surface glycoprotein CD28 isoform X1 [Lynx
canadensis]
MTETLRLWQVHLQLPSHFGLLGEEGLEPWPTVSTMILRLLALNFFPSIQVTENKILVKQLPRLVVYNNEVNLCKYTHN
LFSKEFRASLYKGVDSAVEVCVNGNYSHQPQFYSSSTGFDCDGKLGNETVTFYLRNLVFNQTDIYFCKIEVMYPPPYIDN
EKSNGTIIHVKEKHLCPAQLSPESSKPFWALVVVGILGFYSLLATVALGACWMKTKRSRILQSDYMNMTPRRPGPTRRH
YQPYAPARDFAAAYS
BCL01234.1
BCL01234.1 anti-human CTLA-4 single-chain Fv [synthetic construct]
MERGSHHHHHGSGSGSGIEGRPYNGTGSEIVLTQSPGTLSPGERATLSCRASQSVGSSYLAWYQQKPGQAPRLLIYG
AFSRATGIPDRFSGSGSGTDFTLTISRLEPEDFAVYYCQQYGSSPWTFGGQTKVEIKEGKSSGSGSESKSQVLVESGGG
VVQPGRSLRLSCAASGFTFSSYTMHWVRQAPGKGLEVTFISYDGNKKYADSVKGRFTISRDNKNTLYLQMNSLRAEDT
AIYYCARTGWLGPFYDWGQGTLVTVSSKLSLNQN
NP_001038204.1
NP_001038204.1 cytotoxic T-lymphocyte protein 4 precursor [Macaca mulatta]
MACLGFQRHKARLNLATRTRPYTLLFSLFIPVFSKAMHVAQPAVVLANSRGIASFVCEYASPGKATEVRVTVLRQADSQ

VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYMGIGNGTQIYVIDPEPCPDS
DPLLWILAAVSSGLFFYSFLLTAVSLKMLKKRSPLTTGVYVKMPPTPEPECEKQFQPYFIPIN
NP_001269807.1
NP_001269807.1 lymphocyte transmembrane adapter 1 isoform c [Homo sapiens]
MPLLTLPQTRQRAKNIYDILPWRQEDLGRHESRSMRIFSTESLLSRNSESPEHVPSQAGNAFQEHTAHIHATEYAVGIYD
NAMVPQMCGNLTPSAHCINVRASRDCASISSESDSHDYVNVPTAEEIAETLASTKSPSRNLFVLPSTQKLEFTEERDEGCG
DAGDCTSLYSPGAEDSDSLNNEGSSQISNDYVNMTGLDLSAIQERQLWVAFQCCRDYENVPAADPSGSQQAEKDVPSS
NIGHVEDKTDDPGTHVQCVKRTFLASGDYADFQPFQTSEDSQMKHREMSNEDSSDYENVLTAKLGGRDSEQPGTQLLP
DE
NP_001034238.1
NP_001034238.1 CD226 antigen isoform b [Mus musculus]
MAYVTWLLAILHVHKDSFEIAAPSDSYLSAEPGQDVTLTCLPRTWPVQVQVIWEKVQPHQVDILASCNLSQETRYTSKYL
RQTRSNCSSQSMKSILIIIPNAMAADSGLYRCRSEAITGKNKSFVIRLIITDGGTNKHFILPIVGGLVSLLLVILIIIFI
LYNRKRRRQVRIPLKEPRDKQSKVATNCRSPTSPIQSTDEKEDIYVNYPTFSRRPKPRL
NP_848802.2
NP_848802.2 CD226 antigen isoform a precursor [Mus musculus]
MAYVTWLLAILHVHKALCEETLWDTTVRLSETMTLECVPLTHNLTQVEWTKNTGKTIVSIAVYNPNHNMHIESNYLHRV
HFLNSTVGFRNMSLSFYNAEADIGIYSCLFHAFNGPWEKKIKVWSDSFEIAAPSDSYLSAEPGQDVTLTCLPRTWP
VQQVIWEKVQPHQVDILASCNLSQETRYTSKYLRQTRSNCSSQSMKSILIIIPNAMAADSGLYRCRSEAITGKNKSFVIRL
IITDGGTNKHFILPIVGGLVSLLLVILIIIFILYNRKRQRVRIPLKEPRDKQSKVATNCRSPTSPIQSTDEKEDIYV
NYPTFSRRPKPRL
XP_009635783.1
XP_009635783.1 T-cell-specific surface glycoprotein CD28 [Egretta garzetta]
MLLGILVVLCFIPTADVTKILVAQRPLLIVANKTATLVCNYTYNGTGKEFRASLHKGTDSAVEVCFISWNTTKFSSTS
NKEFNCQGIHDKDKVFNWLNMSASQTDIYFCKIEAMYPYPYVYNEKSNGTIVHVKETPIQTQEPQSAIPLWIMVAVTGV
LAFYSTLITAVFITYWQKSKKNVYHQSDYMNMTPRHPYQKNKGYPYAPTRDYTAYRSWQP
XP_011510496.1
XP_011510496.1 T-cell-specific surface glycoprotein CD28 isoform X1 [Homo sapiens]
MPCGLSALIMCPKGMVAVVVAVDDGDSQALAGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVC
VVGNYSSQQLQVYSKTFGNC DGKLGNESVTFYQLNLYVNQTDIYFCKIEVMYPYPYLDNEKSNGTIIHVKGKHLCPSPFLF
PGPSKPFWVLVVVGVLACYSLLVTVAFIIFWVRSKRSRLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYRS
sp|Q7TSA3.2|BTLA_MOUSE
sp|Q7TSA3.2|BTLA_MOUSE RecName: Full=B- and T-lymphocyte attenuator; AltName:
Full=B- and T-lymphocyte-associated protein; AltName: CD_antigen=CD272; Flags:
Precursor
MKTVPAMLGTPRLFREFFILHLGLWSILCEKATKRNDDEECPVQLTITRNSKQSARTGELFKIQCPVKYCVHRPNVTWCKH
NGTICVPLEVSPQLYTSWEENQSVPVFVLHFKPIHLSDNNGSYSCSTNFNSQVINSHSVTIHVRERTQNSSEHPLITVSDI
PDATNASGPSTMEERPGRWTWLLYTLLPLGALLLLACVCLLCFLKRIQGEKKPSDLAGRDNLVDIPASSRTNHQALPS
GTGIYDNDPSSMQDESELTISLQSERNNQGIYASLNHCVIGRNPRQENNMQEAPTEYASICVRS
sp|Q9XSI1.1|CTLA4_CANLF
sp|Q9XSI1.1|CTLA4_CANLF RecName: Full=Cytotoxic T-lymphocyte protein 4; AltName:
Full=Cytotoxic T-lymphocyte-associated antigen 4; Short=CTLA-4; AltName:
CD_antigen=CD152; Flags: Precursor
MAGFGFRRHGVQPDLASRTWPCTALFSLFIPVFSKGMHAAQPAVVLASSRGVASFVCEYGSSGNAAEVRVTMLRQAGSQ
MTEVCAATYVEDELAFLDDSTCTGTSSGNQVNLTIQGLRAMGTGLYICKVELMYPPPYVGMGNGTQIYVIDPEPCPDS
DPLLWILAAVSSGLFFYSFLITAVSLKMLKKRSPLTTGVYVKMPPTGPECEKQFQPYFIPIN
sp|P42072.1|CTLA4_RABIT

sp|P42072.1|CTLA4_RABIT RecName: Full=Cytotoxic T-lymphocyte protein 4; AltName: Full=Cytotoxic T-lymphocyte-associated antigen 4; Short=CTLA-4; AltName: CD_antigen=CD152; Flags: Precursor
MARLGFQRQGTQLDLASRTWSCAALFSLFLPVFSKALHVSQPAVVLASSRGVASFVCEYASSHKATEVRVTVLRQANSQ
MTEVCAMTYTVENELTFIDDSCTGISHGNKVNLTIQGLSAMDTGLYICKVELMYPPPYVGMNGTQIYVIEPEPCPDS
DFLLWILAAISSGLFFYSFLITAVSLSKMLKKRSPLTTGVYVKMPPTPEPECEKQFQPYFIPIN

sp|P09793.1|CTLA4_MOUSE
sp|P09793.1|CTLA4_MOUSE RecName: Full=Cytotoxic T-lymphocyte protein 4; AltName: Full=Cytotoxic T-lymphocyte-associated antigen 4; Short=CTLA-4; AltName: CD_antigen=CD152; Flags: Precursor
MACLGLRRYKAQLQLPSRTWPFVALLTLLFIPVFSEAIQVTQPSVVLASSHGVSFPCEYSPSHNTDEVTVLRQTNDQ
MTEVCATTFTEKNTVGFLDYFPCSGTFNESRVNLTIQGLRAVDGTGLYLCKVELMYPPPYFVGMNGTQIYVIDPEPCPDS
DFLLWILVAVSLGLFFYSFLVSAVSLSKMLKKRSPLTTGVYVKMPPTPEPECEKQFQPYFIPIN

QNC41475.1
QNC41475.1 Sequence 3 from patent US 10654928
MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVYGNYSQQLQVYS
KTGFNC DGKLGNESVTFYLNLYVNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSPFPGPSKPFWVLVVG
GVLACYSLLVTVAFIIFWVRSKRSRLLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYRS

QNB54249.1
QNB54249.1 Sequence 30 from patent US 10633441
MACLGFQRHKAQLNLATRTWPCTLLFLLFIPVFCKAMHVAQPAVVLASSRGIASFVCEYASPGKATEVRVTVLRQADSQ
VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYLGIGNGTQIYVIDPEPCPDS
DFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPEPECEKQFQPYFIPIN

QNB54244.1
QNB54244.1 Sequence 23 from patent US 10633441
MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVYGNYSQQLQVYS
KTGFNC DGKLGNESVTFYLNLYVNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSPFPGPSKPFWVLVVG
GVLACYSLLVTVAFIIFWVRSKRSRLLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYRS

QNB52443.1
QNB52443.1 Sequence 277 from patent US 10633426
MACLGFQRHKAQLNLATRTWPCTLLFLLFIPVFCKAMHVAQPAVVLASSRGIASFVCEYASPGKATEVRVTVLRQADSQ
VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYLGIGNGTQIYVIDPEPCPDS
DFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPEPECEKQFQPYFIPIN

QNB52438.1
QNB52438.1 Sequence 270 from patent US 10633426
MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVYGNYSQQLQVYS
KTGFNC DGKLGNESVTFYLNLYVNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSPFPGPSKPFWVLVVG
GVLACYSLLVTVAFIIFWVRSKRSRLLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYRS

QMY23864.1
QMY23864.1 Sequence 1 from patent US 10603380
MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVYGNYSQQLQVYS
KTGFNC DGKLGNESVTFYLNLYVNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSPFPGPSKPFWVLVVG
GVLACYSLLVTVAFIIFWVRSKRSRLLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYRS

QMY23273.1
QMY23273.1 Sequence 153 from patent US 10603358
MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVYGNYSQQLQVYS
KTGFNC DGKLGNESVTFYLNLYVNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSPFPGPSKPFWVLVVG
GVLACYSLLVTVAFIIFWVRSKRSRLLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYRS

QMY23174.1

QMY23174.1 Sequence 54 from patent US 10603358

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRGIAFVCEYASPGKATEVRVTVLRQADSQ
VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYLIGIGNGTQIYVIDPEPCPDS
DFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPEPECEKQFQPYFIPIN

QMX96762.1

QMX96762.1 Sequence 60 from patent US 10590182

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRGIAFVCEYASPGKATEVRVTVLRQADSQ
VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYLIGIGNGTQIYVIDPEPCPDS
DFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPEPECEKQFQPYFIPIN

XP_025297780.1

XP_025297780.1 T-cell-specific surface glycoprotein CD28 isoform X2 [Canis lupus dingo]

MILRLLLALNFFPSIQVTENKILVKQLPRLVVYNNEVNLCKYTYNLFKSKEFRASLYKGVDSAVEVCCVNGNYSHQPQFY
SSTGFDGKGLGNETVTFYLRNLFVNQTDIYFCKIEVMYPPPYIGNEKSNGTIIHVKEKHLCPDELFPDSSKPFWALVVV
GAVLVFYSLLVTVALCAYWIKSKSSRILQSDYMNMTPRRPGPTRRHYQPYAPARDFAAAYS

NP_001244148.1

NP_001244148.1 T-cell-specific surface glycoprotein CD28 precursor [Callithrix jacchus]

MLRLLLVLNLFPSIQATGIKILVKQSPMLEAYDNTVNLTCKYSCNLFQRQFQASLHKGVDSAVEVCAVHGNYSQLQVHS
ATGFNCDGKLGNESVTFYLRNLYVNQTDIYFCKIEIMYPPPYLDSEKSNGTIIHVKGKHLCPGPSFSGSPQPFWALAVVG
GVLASYSLLVTVALSVFWMRSRRSRLHSDYMNMTPRCPGPTRRHYQPYAPPRDFAAAYS

pdb|6RQM|A

pdb|6RQM|A Chain A, Cytotoxic T-lymphocyte protein 4

AMHVAQPAVVLASSRGIAFVCEYASPGKATEVRVTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLT
IQGLRAMDTGLYICKVELMYPPPYLIGIGNGTQIYVIDPEPCPDS

pdb|6RQM|B

pdb|6RQM|B Chain B, A blocking anti-CTLA-4 nanobody (KN044)

QVQLVESGGGLVQPGGSLRLSCAASGYIYSAYCMGWFRQAPGKLEGVAAIYIGGGSTYYADSVKGRFTISRDNKNTLY
LQMNSLRAEDTAVYYCAADVPTETCLGGSWSGPFQYWGQGTQVTVSSGMDPGGSHHHHHHHH

pdb|6RPJ|H

pdb|6RPJ|H Chain H, A non-blocking CTLA-4 nanobody

QVQLQESGGGSVQAGGSLTSCAASGYANSNTCMGWFRQAPGKERERVAASISGVGTGTYADSVKGRFTISRDNKNTLF
LQMNSLKPEDTAMYYCAAPEGRAWCSRDPGNYWGQGTQVTVSSGMDPGGSHHHHHHHH

pdb|6RPJ|G

pdb|6RPJ|G Chain G, Cytotoxic T-lymphocyte protein 4

AMHVAQPAVVLASSRGIAFVCEYASPGKATEVRVTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLT
IQGLRAMDTGLYICKVELMYPPPYLIGIGNGTQIYVIDPEPGGSHHHHHH

pdb|6RPJ|F

pdb|6RPJ|F Chain F, A non-blocking CTLA-4 nanobody

QVQLQESGGGSVQAGGSLTSCAASGYANSNTCMGWFRQAPGKERERVAASISGVGTGTYADSVKGRFTISRDNKNTLF
LQMNSLKPEDTAMYYCAAPEGRAWCSRDPGNYWGQGTQVTVSSGMDPGGSHHHHHHHH

pdb|6RPJ|E

pdb|6RPJ|E Chain E, Cytotoxic T-lymphocyte protein 4

AMHVAQPAVVLASSRGIAFVCEYASPGKATEVRVTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLT
IQGLRAMDTGLYICKVELMYPPPYLIGIGNGTQIYVIDPEPGGSHHHHHH

pdb|6RPJ|D

pdb|6RPJ|D Chain D, A non-blocking CTLA-4 nanobody

QVQLQESGGGVSQAGGSLTSCAASGYANSNTCMGWFRQAPGKERERVA AISGVGTGTYYADSVKGRFTISRDNKGNTLF
 LQMNSLKPEDTAMYYCAAPEGRAWCSRDP SGYNYWGQGTQVTVSSGSM DPGGSHHHHHHHH
 pdb|6RPJ|C
 pdb|6RPJ|C Chain C, Cytotoxic T-lymphocyte protein 4
 AMHVAQPAVVLASSRGIASFVCEYASPGKATEVRVTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLT I
 QGLRAMDTGLYICKVELMYPPPYL GIGNGTQIYVIDPEPGGSHHHHHH
 pdb|6RPJ|B
 pdb|6RPJ|B Chain B, A non-blocking CTLA-4 nanobody
 QVQLQESGGGVSQAGGSLTSCAASGYANSNTCMGWFRQAPGKERERVA AISGVGTGTYYADSVKGRFTISRDNKGNTLF
 LQMNSLKPEDTAMYYCAAPEGRAWCSRDP SGYNYWGQGTQVTVSSGSM DPGGSHHHHHHHH
 pdb|6RPJ|A
 pdb|6RPJ|A Chain A, Cytotoxic T-lymphocyte protein 4
 AMHVAQPAVVLASSRGIASFVCEYASPGKATEVRVTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLT I
 QGLRAMDTGLYICKVELMYPPPYL GIGNGTQIYVIDPEPGGSHHHHHH
 pdb|6RP8|CC
 pdb|6RP8|CC Chain c, Cytotoxic T-lymphocyte protein 4
 AMHVAQPAVVLASSRGIASFVCEYASPGKATEVRVTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLT I
 QGLRAMDTGLYICKVELMYPPPYL GIGNGTQIYVIDP
 pdb|6RP8|C
 pdb|6RP8|C Chain C, Cytotoxic T-lymphocyte protein 4
 AMHVAQPAVVLASSRGIASFVCEYASPGKATEVRVTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLT I
 QGLRAMDTGLYICKVELMYPPPYL GIGNGTQIYVIDP
 pdb|6RP8|L
 pdb|6RP8|L Chain L, Antibody Ipilimumab light chain
 EIVLTQSPGTL SLSPGERATL SCRAQS SVGSSYLAWYQQKPGQAPRL LIYGAFSRATGIPDRFSGSGSGTDFTLTISRLE
 PEDFAVYYCQQYGSSPWF TFGGQTKVEIKRTVAAPSVFIFPPSDEQLKSGTASVVC LLNNFYPREAKVQWKVDNALQSGNS
 QESVTEQDSKDS TYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
 pdb|6RP8|H
 pdb|6RP8|H Chain H, Antibody Ipilimumab heavy chain
 QVQLVESGGGVVQPGRSLRLSCAASGFTFSSYTMHWVRQAPGKGLEWVTFISYDGN NKYYADSVKGRFTISRDN SKNTLY
 LQMNSLRAEDTAIYYCARTGWLGPFDYWGQGT LVTVSSASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVT VSWN
 SGALTSGVHTFPAVLQSSGLYSLSSV VTPSSSLGTQTYICNVNHKPSNTKV DKRVEPKSCDKTH
 pdb|6RP8|LL
 pdb|6RP8|LL Chain l, Antibody Ipilimumab light chain
 EIVLTQSPGTL SLSPGERATL SCRAQS SVGSSYLAWYQQKPGQAPRL LIYGAFSRATGIPDRFSGSGSGTDFTLTISRLE
 PEDFAVYYCQQYGSSPWF TFGGQTKVEIKRTVAAPSVFIFPPSDEQLKSGTASVVC LLNNFYPREAKVQWKVDNALQSGNS
 QESVTEQDSKDS TYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC
 pdb|6RP8|HH
 pdb|6RP8|HH Chain h, Antibody Ipilimumab heavy chain
 QVQLVESGGGVVQPGRSLRLSCAASGFTFSSYTMHWVRQAPGKGLEWVTFISYDGN NKYYADSVKGRFTISRDN SKNTLY
 LQMNSLRAEDTAIYYCARTGWLGPFDYWGQGT LVTVSSASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVT VSWN
 SGALTSGVHTFPAVLQSSGLYSLSSV VTPSSSLGTQTYICNVNHKPSNTKV DKRVEPKSCDKTH
 XP_007610153.1
 XP_007610153.1 cytotoxic T-lymphocyte protein 4 isoform X2 [Cricetulus griseus]
 MAGLGVQRCRAQLQLASRTWPFEALLAFLFIPTFSKAIHVAQPSVVLASSHG VASFSCEYTSSHNTDEV RVTVLRQTNSQ
 MTEVCATTTMKNKLGFLDDPFCSGTFNESKVNLT IQGLRAADTGLYFCKVELMYPPPYFVGMGNGTQIYVIVKEKKSTY
 NRGLCENAPDRARM
 XP_003497464.1

XP_003497464.1 cytotoxic T-lymphocyte protein 4 isoform X1 [*Cricetulus griseus*]
MAGLGVQRCRAQLQLASRTWPFEALLAFLFIPTFSKAIHVAQPSVVLASSHGVASFSCEYTSSHNTDEVVRTVLRQTNSQ
MTEVCATTFTMKNKLGFLDDPFCSGTFNESKVNLTIQGLRAADTGLYFCKVELMYPPPYFVGMGNGTQIYVIEPEPCPDS
DVLLWILASVSSGLFFYSFLITAVSLSKMLKKRSPLTTGVYVKMPPTPECEKQFQPYFIPIN

XP_008997376.1
XP_008997376.1 T-cell-specific surface glycoprotein CD28 isoform X3 [*Callithrix jacchus*]
MPCGLSPLIMCPKRMVAVVVAVDDGDCQALAGIKILVKQSPMLEAYDNTVNLTCKYSCNLF SRQFQASLHKGVDSAVEVC
AVHGNYSQLLQVHSATGFNC DGKLGNESVTFYLQNLVYNQTDIYFCKIEIMYPPPYLDSEKSNGTIIHVKGKHLCPGPSF
SGPSQPFWALAVVGGVLASYSLLVTVALSVFWMRSRRSRLHSDYMNMTPRCPGPTRRHYQPYAPPRDFAAYRS

NP_001179946.1
NP_001179946.1 tyrosine-protein kinase ZAP-70 [*Bos taurus*]
MPDPA AHL PFFYGSISR AEAEHLKLAGMADGLFLLRQCLRSLGGYVLSLVHEVRFHHP IERQLNGTYAIAGGKAHCGP
AELCEFYSRDPDGLPCNLRKPCNRP SGLEPQPGVFDNLRDAMVRDYVRQTWKLEGEALEQAIISQAPQVEKLIATTAHER
MPWYHSSLTREEAERKLYSGSQT DGKFLLRPRKEPGTYALSLIYGKTVYHYLISQDKAGKYCIPEGTKFDTLWQLVEYLK
LKADGLIYCLKEACPSSASSGAAAPTLP AHPSTFTQPQRRIDTLNSDGYTPEPARLV SSEKPRTMPMDTSVYESPYSDP
EELKNKKLFLKRENLLMADIELGCGNFGSVRGVYMRKKQIDVAIKVLKQSTEKADKDEMMREAQIMHQLDNPIYVRLI
GVCQAEALMLVMEMAGGGPLHKFLVGKKEEIPVS NVAELLHQVSMGMKYLEEKNFVHRDLAARNVLLVNRHYAKISDFGL
SKALGADDSYTTARSAGKWPLKWYAPECINFRKFSSRSDVWSYGVTMWEAFSYGQKPYKKMKGPEVMAFIEQGKRMECPP
ECPPEMYKLMSDCWTYK WEDRPDFAAVEQRMRTYYYYSLATKAEEPAACGNGVEAACP

NP_001274262.1
NP_001274262.1 T-cell-specific surface glycoprotein CD28 precursor [*Macaca fascicularis*]
MLRLLLALNLLPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVYGNYSQQLQVYS
KTGFNC DGKLGNESVTFYLQNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSP LFPGPSKPFWALVVVG
GVLACYSLLVTVAF CIFWMRSKR SRLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYRS

NP_990415.1
NP_990415.1 ICOS ligand precursor [*Gallus gallus*]
MKRLGYGFLLLFLHILRAVTALEKII SKPGDNATLS CIYANRGFDLDSL RVYWQIDGVEGSKSCSVVHALISGQDNESQQ
CSQFKNRTQLLWDKLGDGDFSLLLYNVRQSD EHTYKCVVMQTIEYTRVIHQEQVVL SLAASYSQPILSGPIRNSYSTGEE
VTFSCRSDNGYPEPNVYWINRTDNTRLSQSDFNITQHPDGTYSVLSTLKV NATSDMQLECFIENKVLQENTSANYTEEMQ
NNGSSTGSHKDAAKGGQGAQAAVSVVILMAFLTVLICWLWRRRSFQLVSYTAPV

SZF06895.1
SZF06895.1 unnamed protein product [*Homo sapiens*]
MACLGFQRHKAQLNLATRTWPCTLLFLLFIPVFCKAMHVAQPAVVLASSRG IASFVCEYASPGKATEVRVTVLRQADSQ
VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYL GIGNGTQIYVIAKEKKPSY
NRGLCENAPNRARM

SZF06866.1
SZF06866.1 unnamed protein product [*Homo sapiens*]
MACLGFQRHKAQLNLATRTWPCTLLFLLFIPVFCKAMHVAQPAVVLASSRG IASFVCEYASPGKATEVRVTVLRQADSQ
VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYL GIGNGTQIYVIAKEKKPSY
NRGLCENAPNRARM

NP_001107830.1
NP_001107830.1 programmed cell death protein 1 [*Macaca mulatta*]
MQIPQAPWPVVAVLQLGWRPGWFLESPDRPWN PPTFSPALLLVTEGDNATFTCSFSNASESFVLN WYRMSPSNQTDKLA
AFPEDRSQGRDCRFVRTQLPNGRDFHMSVVRARRND SGTYLCGAISLAPKAQIKESLRAELRV TERRAEVPTAHPSPSP
RPAGQFQALVVGVGGLLGSLLVLLVWLAVICSRAAQGTIEARRTGQPLKEDPSAVPVFSVDY GELDFQWREKTPEPPAP
CVPEQTEYATIVFPSGLGTSSPARRGSADGPRSPRPLRPEDGHCSWPL

NP_001076154.1
NP_001076154.1 cytotoxic T-lymphocyte protein 4 precursor [*Oryctolagus cuniculus*]
MARLGFQRQGTQLDLASRTWSCAALFSLFLPVFSKALHVSQPAVVLASSRGVASFVCEYASSHKATEVRVTVLRQANSQ
MTEVCAMTYTVENELTFIDDSCTGISHGNKVNLTIQGLSAMDTGLYICKVELMYPPPYVGMNGTQIYVIEPEPCPDS
DFLLWILAAISSGLFFYSFLITAVSLSKMLKKRSPLTTGVYVKMPPTPEPECEKQFQPYFIPIN
NP_001003087.2
NP_001003087.2 T-cell-specific surface glycoprotein CD28 precursor [*Canis lupus familiaris*]
MILRLLLALNFFPSIQVTENKILVKQLPRLVVYNNEVNLCKYTYNLSKEFRASLYKGVDSAVEVCVVNGNYSHQPQFY
SSTGFDCDGLGNETVTFYLRNLFVNQTDIYFCKIEVMYPPPYIGNEKSNGTIIHVKEKHLCPDELFPDSSKPFWALVVV
GAVLVFYSLLVTVLALCAYWIKSSRILQSDYMNMTPRRPGPTRRHYQPYAPARDFAAAYRS
NP_001106104.1
NP_001106104.1 cytotoxic T-lymphocyte protein 4 precursor [*Papio anubis*]
MACLGFQRHKAQLNLATRTPTLLFSLFIPVFSKAMHVAQPAVVLANSRGIAFVCEYASPGKATEVRVTVLRQADSQ
VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYMGIGNGTQIYVIDPEPCPDS
DFLLWILAAVSSGLFFYSFLITAVSLSKMLKKRSPLTTGVYVKMPPTPEPECEKQFQPYFIPIN
NP_001106119.1
NP_001106119.1 T-cell-specific surface glycoprotein CD28 precursor [*Papio anubis*]
MLRLLLALNLLPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLSFREFRASLHKGLDSAVEVCVVYGNYSQQLQVYS
KTGFNCGGKLGDESVTYFLQNMVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSPFPGPSKPFWALVVVG
GVLACYSLLVTVAFSIFCMRSKRSLRHSDYMNMTPRRPGPTRKHYPYAPPRDFAAAYRS
NP_001093649.1
NP_001093649.1 T-cell-specific surface glycoprotein CD28 [*Equus caballus*]
MLRLLLALNFFPSIQVTENKILVKQSPMLVVHNAVNLCKYTYNLSKEFRASLYKGADSAVEVCVVNGNHSQQLQFHS
NTGFNCDGKLGNETVTFYLRNLYVNQTDIYFCKIEVMYPPPYIDNEKSNGTIIHVKEKHLCPVHPFTESSTPFWALAVTG
GVLAFYSLLVTVLALCTCWMNRNRSRTLQSDYMNMTPRRPGPTRKHYPYAPARDFAAAYRS
NP_001075676.1
NP_001075676.1 T-cell-specific surface glycoprotein CD28 precursor [*Oryctolagus cuniculus*]
MILRLLALNFFPSIQGTENKILVKQSPMLVVNNNEVNLCKYTYNLSKEFRASLYKGADSAVEVCVVNGNFSHPHQFH
STTGFNCDGKLGNETVTFYLRNLYVNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKEQHFCPAHPSPKSSTLFWVLVVV
GAVLAFYSMLVTVALFSCWMKSKNRLLQSDYMNMTPRRPGPTRKHYPYAPARDFAAAYRS
NP_001009441.1
NP_001009441.1 T-cell-specific surface glycoprotein CD28 precursor [*Ovis aries*]
MLRLLLALNFFPSIQVAENKILVKQSPMLVVNDNEVNLCKYTYNLSKEFRASLYKGADSAVEVCAVNGNHSHPQLQSTN
KEFNCTVKVGNETVTFYLRNLYVNQTDIYFCKLEVLYPPPYIDNEKSNGTIIHVKEKHLCPSPQSPESKPFWALVVVNG
VLVFYSLLVTVALCNCWMKSKNRMHQSDYMNMTPRRPGPTRRHYQPYAPTRDFAAAYRS
NP_001009236.1
NP_001009236.1 cytotoxic T-lymphocyte protein 4 [*Felis catus*]
MACFGFRRHGAQLDLASRTWPCTALFSLFIPVFSKGMHVAQPAVVLASSRGVASFVCEYGSSGNAAEVRVTVLRQTGSQ
MTEVCAATYTVENELAFLLDDSTCTGISSGNKVNLTIQGLRAMDTGLYICKVELMYPPPYAGMNGTQIYVIDPEPCPDS
DFLLWILAAVSSGLFFYSFLITAVSLSKMLKKRSPLTTGVYVKMPPTPEPECEKQFQPYFIPIN
NP_001003106.1
NP_001003106.1 cytotoxic T-lymphocyte protein 4 [*Canis lupus familiaris*]
MAGFGFRRHGAQPDLASRTWPCTALFSLFIPVFSKGMHVAQPAVVLASSRGVASFVCEYGSSGNAAEVRVTVLRQAGSQ
MTEVCAATYTVDELAFLLDDSTCTGTSSGNKVNLTIQGLRAMDTGLYICKVELMYPPPYVGMNGTQIYVIDPEPCPDS

DFLWLILAAVSSGLFFYSFLITAVSLSKMLKKRSPLTTGVYVKMPPTPEPECEKQFQPYFIPIN
 NP_776722.1
 NP_776722.1 cytotoxic T-lymphocyte protein 4 precursor [Bos taurus]
 MACSGFQSHGTWTSRTWPCTALFFLVFIPVFSKGMNVTQPPVVLASSRGVASFSCEYESSGKADEVRTVLREAGSQVT
 EVCAGTYMVEDELTFLLDDSTCIGTSRGKNVNLTIQGLRAMDTGLYVCKVELMYPPPYVVGIGNGTQIYVIDPEPCPDSDF
 LLWLILAAVSSGLFFYSFLITAVSLSKMLKKRSPLTTGVYVKMPPTPEPECEKQFQPYFIPIN
 NP_001036106.2
 NP_001036106.2 T-cell-specific surface glycoprotein CD28 precursor [Macaca
 mulatta]
 MLRLLLALNLLPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVYGNYSQQLQVYS
 KTGFNCDGKLGNESVTFYLNLYVNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSPLPFGPSKPFWALVVVG
 GVLACYSLLVTVAFCIFWMRSKRSLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYRS
 NP_001009214.1
 NP_001009214.1 cytotoxic T-lymphocyte protein 4 precursor [Ovis aries]
 MACSGFQSHGTWTSRTWPCTALFFLLFIPVFSKGMNVTQPPVVLASSRGVASFTCEYESSGKADEVRTVLKAGIQVT
 EVCAGTYMVEDELTFLLDDSSCIGTSRGKNVNLTIQGLRAMDTGLYVCKVELMYPPPYMGEENGNTQIYVIDPEPCPDSDF
 LLWLILAAVSSGLFFYSFLITAVSLSKMLKKRSPLTTGVYVKMPPTPEPECEKQFQPYFIPIN
 NP_001276638.1
 NP_001276638.1 endophilin-B2 isoform 1 [Mus musculus]
 MDFNMKKLASDAGIFFTRAVQFTEEFKFGQAEKTELDAHFNLLARADSTKNWTERILRQTEVLLQPNPSARVEEFLYEKL
 DRKVPSPRVNTGELLAQYMAEAAASELGPSTPYGKTLIKVSEAEKRLGAAERDFIHTASLSFLTPLRNFLEGDWKTISKERR
 LLQNRRLDLDAACKARLKKAKAAAEAKATTVPDFQETRPRNYILSASASALWNDEVDKAEQELRVAQTEFDRQAEVTRLLE
 GISSTHVNHLRCLHEFVKSQTTYAAQCYRHMLDLQKQLGSSQGAIFPGTFVGTTEPASPLSSTSPTTTTAATMPVVPTGA
 VLAPPEEAALCLEEVAPPASGTRKARVLYDYEAADSELALLADELITVYSLPGMDPDWLIGERGNKKGKVPVPTYLELLS
 NP_001276639.1
 NP_001276639.1 endophilin-B2 isoform 3 [Mus musculus]
 MDFNMKKLASDAGIFFTRAVQFTEEFKFGQAEKTELDAHFNLLARADSTKNWTERILRQTEVLLQPNPSARVEEFLYEKL
 DRKVPSPRVNTGELLAQYMAEAAASELGPSTPYGKTLIKVSEAEKRLGAAERDFIHTASLSFLTPLRNFLEGDWKTISKERR
 LLQNRRLDLDAACKARLKKAKAAAEAKATLWNDEVDKAEQELRVAQTEFDRQAEVTRLLEGISSTHVNHLRCLHEFVKSQ
 TTYAAQCYRHMLDLQKQLGRFPFTVGTTEPASPLSSTSPTTTTAATMPVVPTGAVLAPPEEAALCLEEVAPPASGTRKAR
 VLYDYEAADSELALLADELITVYSLPGMDPDWLIGERGNKKGKVPVPTYLELLS
 NP_001032808.2
 NP_001032808.2 B- and T-lymphocyte attenuator isoform 1 precursor [Mus musculus]
 MKTVPAMLGTPRLFREFFILHLGLWSILCEKATKRNDDEECPVQLTITRNSKQSARTGELFKIQCPVKYCVHRPNVTWCKH
 NGTICVPLEVSPQLYTSWEENQSVPVFVLHFKPIHLSDNQSYSCSTNFNSQVINSHSVTIHVTERTQNSSEHPLITVSDI
 PDATNASGPSTMEERPGRWTWLLYTLLPLGALLLLACVCLLCFLKRIQGEKKPSDLAGRDTNLVDIPASSRTNHQALPS
 GTGIYDNDPWSSMQDESELTISLQSERNNQGIYASLNHCVIGRNPRQENNMQEAPTEYASICVRS
 NP_808252.1
 NP_808252.1 B- and T-lymphocyte attenuator isoform 2 precursor [Mus musculus]
 MKTVPAMLGTPRLFREFFILHLGLWSILCEKATKRNDDEECPVQLTITRNSKQSARTGELFKIQCPVKYCVHRPNVTWCKH
 NGTICVPLEVSPQLYTSWEENQSVPVFVLHFKPIHLSDNQSYSCSTNFNSQVINSHSVTIHVTERTQNSSEHPLIISDIP
 DATNASGPSTMEERPGRWTWLLYTLLPLGALLLLACVCLLCFLKRIQGEKKPSDLAGRDTNLVDIPASSRTNHQALPSG
 TGIYDNDPWSSMQDESELTISLQSERNNQGIYASLNHCVIGRNPRQENNMQEAPTEYASICVRS
 NP_647463.1
 NP_647463.1 endophilin-B2 isoform 2 [Mus musculus]
 MDFNMKKLASDAGIFFTRAVQFTEEFKFGQAEKTELDAHFNLLARADSTKNWTERILRQTEVLLQPNPSARVEEFLYEKL
 DRKVPSPRVNTGELLAQYMAEAAASELGPSTPYGKTLIKVSEAEKRLGAAERDFIHTASLSFLTPLRNFLEGDWKTISKERR
 LLQNRRLDLDAACKARLKKAKAAAEAKATTVPDFQETRPRNYILSASASALWNDEVDKAEQELRVAQTEFDRQAEVTRLLE

GISSTHVNHLRCLHEFVKSQTTYYAQCYRHMLDLQKQLGRFPGTFVGTTEPASPLSSTSPTTTAATMPVVPTGAVLAPP
EEAALCLEEVAPPASGTRKARVLYDYEAADSSSELALLADELITVYSLPGMDPDWLIGERGNKKGKVPVTTYLELLS
QKP04063.1

QKP04063.1 Sequence 4 from patent US 10556969

MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVYGNYSQQLQVYS
KTGFNCDGKLGNESVTFYLQNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSPLPFGPSKPFWVLVVVG
GVLACYSLLVTVAFIIFWVRSKRSRLLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYRS

QKP04030.1

QKP04030.1 Sequence 149 from patent US 10556968

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRGIAFVCEYASPGKATEVRVTVLRQADSQ
VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYLIGIGNGTQIYVIDPEPCPDS
DFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPEPECEKQFQPYFIPIN

QK084647.1

QK084647.1 Sequence 197 from patent US 10544222

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRGIAFVCEYASPGKATEVRVTVLRQADSQ
VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYLIGIGNGTQIYVIDPEPCPDS
DFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPEPECEKQFQPYFIPIN

QK044421.1

QK044421.1 Sequence 30 from patent US 10538588

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRGIAFVCEYASPGKATEVRVTVLRQADSQ
VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYLIGIGNGTQIYVIDPEPCPDS
DFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPEPECEKQFQPYFIPIN

QK044416.1

QK044416.1 Sequence 23 from patent US 10538588

MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVYGNYSQQLQVYS
KTGFNCDGKLGNESVTFYLQNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSPLPFGPSKPFWVLVVVG
GVLACYSLLVTVAFIIFWVRSKRSRLLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYRS

XP_008972477.1

XP_008972477.1 cytotoxic T-lymphocyte protein 4 isoform X2 [Pan paniscus]

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRGIAFVCEYASPGKATEVRVTVLRQADSQ
VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYLIGIGNGTQIYVIAEKKPSY
NRGLCENAPNRARM

XP_003820827.1

XP_003820827.1 cytotoxic T-lymphocyte protein 4 isoform X1 [Pan paniscus]

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRGIAFVCEYASPGKATEVRVTVLRQADSQ
VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYLIGIGNGTQIYVIDPEPCPDS
DFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPEPECEKQFQPYFIPIN

XP_003820826.1

XP_003820826.1 T-cell-specific surface glycoprotein CD28 isoform X1 [Pan paniscus]

MPCGLSALIMCPKGMVAVVVAVDDGDSQALAGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVC
VVYGNYSQQLQVYSKTGFNCDGKLGNESVTFYLQNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSPLP
PGPSKPFWVLVVVGVLACYSLLVTVAFIIFWVRSKRSRLLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYRS

XP_003820825.1

XP_003820825.1 T-cell-specific surface glycoprotein CD28 isoform X2 [Pan paniscus]

MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVYGNYSQQLQVYS
KTGFNCDGKLGNESVTFYLQNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSPLPFGPSKPFWVLVVVG

GVLACYSLLVTVAFIIFWVRSKRSRLLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYRS
 XP_002919995.2
 XP_002919995.2 T-cell-specific surface glycoprotein CD28 [Ailuropoda melanoleuca]
 MTETLGLWQVHLQFSPHFGLLREEGLEPWPTISTMILRLLLALNFFPSIQVTENKILVKQLPRLVVYDNEVNLSCYKTHN
 LFSKEFRASLYKGVDSAVEVCVNGNYSHQPQFYSSSTGFDGDKMGNETVTFYLRKLFVNQTDIYFCKIEVMYPPPYIDN
 EKSNGTIIHVKEKHHCPAQSPSESSKPFWALVVVGVLVVFYSLLVTVALCACWMKNKRSRILQSDYMNMTPRRPGPTRRH
 YQPYAPTRDFAAYRS
 XP_004315141.1
 XP_004315141.1 T-cell-specific surface glycoprotein CD28 [Tursiops truncatus]
 MCPERSKSVVVAADDESGCSGASPAHLTLGLLREEGRKPWPTVSTMILSLLLALNFFPSIQVAENKILVNQSPMLVVNN
 EVNLSCYKTYNLFSEKFRASLYKGVDSAVECAVNGNHSKSLQSTNKEFNCTVNLGNETVTFYLDLYVNQTDIYFCKIE
 VLYPPPYIDNEKSNGTIIHVKEKHLCPAPRSPSESSKPFWALVVVNGVLAFYSLLATVALSNCWMKSKRNRMLQSDYMNMT
 PRRPGPTRKHYPYAPARDFAAYRS
 XP_015490581.1
 XP_015490581.1 T-cell-specific surface glycoprotein CD28 [Parus major]
 MLLGILVLCFIPTADV TENKILVAQHPLLVANQTATLVCNYTYNGTGKEFRASLHKGTDSSEVEVCFISWNTTKISSNS
 NKEFNCGQYHDKDKVIFSLWNMNANQTDIYFCKIEVMYPPPYVYNEKSNGTVIHVKETPTQIQEPQSAIPLWILATVTGI
 LALYSMLITAVFINYWQFKKKNMYHQSDYMNMI PRHPYQKNKGYPYAPTRDYTAYRSWQP
 XP_004262874.1
 XP_004262874.1 T-cell-specific surface glycoprotein CD28 [Orcinus orca]
 MCPERSKSVVVAADDESGCSGASPAHLTLGLLREEGRKPWPTVSTMILSLLLALNFFPSIQVAENKILVNQSPMLVVNN
 EVNLSCYKTYNLFSEKFRASLYKGVDSAVECAVNGNHSKSLQSTNKEFNCTVNLGNETVTFYLDLYVNQTDIYFCKIE
 VLYPPPYIDNEKSNGTIIHVKEKHLCPAPRSPSESSKPFWALVVVNGVLAFYSLLATVALSNCWMKSKRNRMLQSDYMNMT
 PRRPGPTRKHYPYAPARDFAAYRS
 NP_001292880.1
 NP_001292880.1 T-cell-specific surface glycoprotein CD28 precursor [Cercopithecus atys]
 MLRLLLALNLLPSIRVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVYGNYSQQLQVYP
 KTGFCNDGKLGNESVTFYLDLYVNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSPFPGPSKPFWALVVVG
 GVLACYSLLVTVAFRIFWMRSKRSRLLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYRS
 QIS88967.1
 QIS88967.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKQKRNYPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWINGNQTN
 TMSAEVAELYRLELDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG
 IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDAQLNAGWCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDFFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
 YRPVFFSSPPSYFQQTHIQDPAIPTRREGKEGDKGKGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAI PRIRQGLELTLL
 QIS88966.1
 QIS88966.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM

QIS88965.1
 QIS88965.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA
 QIS88964.1
 QIS88964.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLPPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQNTNI
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLAQSRLLAG
 IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDFLEENITALLEEAQIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88963.1
 QIS88963.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGNPLSAIPPSRSM
 QIS88962.1
 QIS88962.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA
 QIS88961.1
 QIS88961.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQNTNI
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLAQSRLLAG
 IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDFLEENITALLEEAQIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLTKLRQG
 YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88960.1
 QIS88960.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGNPLSAIPPSRSM
 QIS88959.1
 QIS88959.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA
 QIS88958.1
 QIS88958.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL

LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVD FLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGSSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88957.1

QIS88957.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGNPLSAIPPSRSM

QIS88956.1

QIS88956.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88955.1

QIS88955.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVD FLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGSSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88954.1

QIS88954.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGNPLSAIPPSRSM

QIS88953.1

QIS88953.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88952.1

QIS88952.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVD FLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGSSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

QIS88951.1
 QIS88951.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGNPLSAIPPSRSM
 QIS88950.1
 QIS88950.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA
 QIS88949.1
 QIS88949.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGICCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWDNETWQEW
 ERKVDFFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88948.1
 QIS88948.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGNPLSAIPPSRSM
 QIS88947.1
 QIS88947.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA
 QIS88946.1
 QIS88946.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGNPLSAIPPSRSM
 QIS88945.1
 QIS88945.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKDCRCLEGEHGAGGWRPGPPPPPPGLA
 QIS88944.1
 QIS88944.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAVFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLAPKWNNETWQEW
 ERKVDFFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88943.1

QIS88943.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88942.1
 QIS88942.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGGLA
 QIS88941.1
 QIS88941.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88940.1
 QIS88940.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGGLA
 QIS88939.1
 QIS88939.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMFKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKRNYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQALNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPAIPTRREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRSATETLAGAWGDLWETLRGGRWILAIPRRIRQGLELTLL
 QIS88938.1
 QIS88938.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88937.1
 QIS88937.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGGLA
 QIS88936.1
 QIS88936.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88935.1
 QIS88935.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGGLA
 QIS88934.1
 QIS88934.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMFKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKRNYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN

TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVD FLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPA LPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88933.1

QIS88933.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88932.1

QIS88932.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88931.1

QIS88931.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETS IKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQENNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQP INDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPRGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVD FLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPA LPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88930.1

QIS88930.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88929.1

QIS88929.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88928.1

QIS88928.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88927.1

QIS88927.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88926.1

QIS88926.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
TVTEQAIEDVWQLFETS IKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQNGTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYALL
RCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVLP
VTIMSGLVFHSQP INDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLY
CKMNWFLNWVEDRNTANQKPKEQHKNYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGDQTNIT
MSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAGI

VQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
RKVDFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
RPVFSSPPSYFQQTHIQQDPALPTREGKEGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQPI
LQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88925.1

QIS88925.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88924.1

QIS88924.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88923.1

QIS88923.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
TVTEQAIEDVWQLFETSICKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPANLTPKWNNETWQEW
ERKVDLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88922.1

QIS88922.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88921.1

QIS88921.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88920.1

QIS88920.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
TVTEQAIEDVWQLFETSICKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFYEAQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88919.1

QIS88919.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEGLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88918.1
 QIS88918.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA
 QIS88917.1
 QIS88917.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88916.1
 QIS88916.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA
 QIS88915.1
 QIS88915.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88914.1
 QIS88914.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA
 QIS88913.1
 QIS88913.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPCSKVSVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKRNYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLKDAQLNAGCAFRQVCHTTVPWPVNSLTPKWNNETWQEW
 ERKVDFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
 YRPVFSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELYLQYGSYFHEAVQAVWRSATETLAGAWGDLWETLRGGRWILAIPRRIRQGLELTLL
 QIS88912.1
 QIS88912.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88911.1
 QIS88911.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA
 QIS88910.1
 QIS88910.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPCSKVSVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKRNYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLKDAQLNAGCAFRQVCHTTVPWPVNSLTPKWNNETWQEW
 ERKVDFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG

YRPVFSSPPSYFQQTHIQDPALPTREGKERDGGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTETYLYQYGSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88909.1

QIS88909.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88908.1

QIS88908.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA

QIS88907.1

QIS88907.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMAENVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDIAIRFRYCAPPGYAL
LRCNDTNYSGFMPCSKVSVSSCTRMETQTSTWFGFNGTRAENRTIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQNTNI
TMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQALNAWGCAFRQVCHTTVPWPANLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQKEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTETYLYQYGSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88906.1

QIS88906.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88905.1

QIS88905.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA

QIS88904.1

QIS88904.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMAENVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDIAIRFRYCAPPGYAL
LRCNDTNYSGFMPCSKVSVSSCTRMETQTSTWFGFNGTRAENRTIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQNTNI
TMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQALNAWGCAFRQVCHTTVPWPANLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQKEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTETYLYQYGSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88903.1

QIS88903.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88902.1

QIS88902.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGGLA
 QIS88901.1
 QIS88901.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMGTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQNTNI
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRIYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88900.1
 QIS88900.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88899.1
 QIS88899.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGGLA
 QIS88898.1
 QIS88898.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMGTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQNTNI
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88897.1
 QIS88897.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88896.1
 QIS88896.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGGLA
 QIS88895.1
 QIS88895.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMGTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL

YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAGIVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEWERKVDFFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVQMLAKLRQG YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL QIS88894.1

QIS88894.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88893.1

QIS88893.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88892.1

QIS88892.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYTL
LRCNDTNYSGFMFKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAGIVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAWGCAFRQVCHTTVPWPANLTPKWNNETWQEWERKVDFFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLKIVYIVQMLAKLRQG YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWNYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL QIS88891.1

QIS88891.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPEGGNPLSAIPPSRSM

QIS88890.1

QIS88890.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88889.1

QIS88889.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYTL
LRCNDTNYSGFMFKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAGIVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAWGCAFRQVCHTTVPWPANLTPKWNNETWQEWERKVDFFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLKIVYIVQMLAKLRQG YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWNYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL QIS88888.1

QIS88888.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPEGGNPLSAIPPSRSM

QIS88887.1
QIS88887.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLGEGHGAGGWRPGPPPPPPGLA

QIS88886.1
QIS88886.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYVL
LRCNDTNYSGFMFKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQNTNI
TMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPEWNNETWQEW
ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPAREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

QIS88885.1
QIS88885.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDKVVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPEGGNPLSAIPPSRSM

QIS88884.1
QIS88884.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCKCLGEGHGAGGWRPGPPPPPPGLA

QIS88883.1
QIS88883.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYTL
LRCNDTNYSGFMFKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQNTNI
TMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPANLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLKIVYIYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWNYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

QIS88882.1
QIS88882.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPEGGNPLSAIPPSRSM

QIS88881.1
QIS88881.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLGEGHGAGGWRPGPPPPPPGLA

QIS88880.1
QIS88880.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN

TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKRNYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVD FLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWNYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88879.1

QIS88879.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGNPLSAIPPSRSM

QIS88878.1

QIS88878.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGGHAGGWRPGRPPPPPPGLA

QIS88877.1

QIS88877.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYTL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKRNYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAWGCAFRQVCHTTVPWPANLTPKWNNETWQEW
ERKVD FLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVGVILLKIVYIYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWNYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88876.1

QIS88876.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPEGGNPLSAIPPSRSM

QIS88875.1

QIS88875.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGGHAGGWRPGRPPPPPPGLA

QIS88874.1

QIS88874.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKRNYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVD FLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYIVQMLAKLRQG

YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88873.1

QIS88873.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88872.1

QIS88872.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA

QIS88871.1

QIS88871.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPCSKVSVSSCTRMETQTSTWFGFNGTRAENRTIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKRNYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQNTNI
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQALNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQKEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88870.1

QIS88870.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88869.1

QIS88869.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA

QIS88868.1

QIS88868.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYTL
LRCNDTNYSGFMPCSKVSVSSCTRMETQTSTWFGFNGTRAENRTIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKRNYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQNTNI
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQALNAWGCAFRQVCHTTVPWPANLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQKEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVGVILLKIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELYLQYGNWFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88867.1

QIS88867.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPEGGNPLSAIPPSRSM

QIS88866.1

QIS88866.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLGEGHGAGGWRPGPPPPPPGLA
 QIS88865.1
 QIS88865.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMGTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQNTNI
 TMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88864.1
 QIS88864.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGPNPLSAIPPSRSM
 QIS88863.1
 QIS88863.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLGEGHGAGGWRPGPPPPPPGLA
 QIS88862.1
 QIS88862.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMGTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYTL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQNTNI
 TMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPANLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLKIVYIVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWNYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88861.1
 QIS88861.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPEGPNPLSAIPPSRSM
 QIS88860.1
 QIS88860.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLGEGHGAGGWRPGPPPPPPGLA
 QIS88859.1
 QIS88859.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMGTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL

YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYATGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAGIVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLAPKWNNETWQEWERKVDLFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVQMLAKLRQG YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL QIS88858.1

QIS88858.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88857.1

QIS88857.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLTQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88856.1

QIS88856.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYTL LRCNDTNYSGFMFKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAGIVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPANLTPKWNNETWQEWERKVDLFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLKIVYIVQMLAKLRQG YRPVLSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWNYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL QIS88855.1

QIS88855.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
RIGQPEGGNPLSAIPPSRSM

QIS88854.1

QIS88854.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88853.1

QIS88853.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYTL LRCNDTNYSGFMFKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAGIVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPANLTPKWNNETWQEWERKVDLFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLKIVYIVQMLAKLRQG YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWNYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL QIS88852.1

QIS88852.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPEGGNPLSAIPPSRSM
QIS88851.1
QIS88851.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA
QIS88850.1
QIS88850.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMFKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTIVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKRNYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQNTNI
TMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDAQLNAGWCAFRQVCHTTVPWPANLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIYGVYIVVGVILLRIVYIYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGGSSWPWQIEYIHFLIRQLIRLLTWLFSNCRLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88849.1
QIS88849.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGNPLSAIPPSRSM
QIS88848.1
QIS88848.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA
QIS88847.1
QIS88847.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMFKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTIVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKRNYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQNTNI
TMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDAQLNAGWCAFRQVCHTTVPWPANLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIYGVYIVVGVILLRIVYIYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGGSSWPWQIEYIHFLIHQLIRLLTWLFSNCRLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88846.1
QIS88846.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGNPLSAIPPSRSM
QIS88845.1
QIS88845.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA
QIS88844.1
QIS88844.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN

TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMHNCNTSVIQESCDKHYWDAIRFRYCAPPGYTL
LRCNDTNYSGFMPCSKVSVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPANLTPKWNNETWQEW
ERKVDLFLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVGVILLKIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWNYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88843.1

QIS88843.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
RIGQPEGGNPLSAIPPSRSM

QIS88842.1

QIS88842.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGGHAGGWRPGPPPPPPGLA

QIS88841.1

QIS88841.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMHNCNTSVIQESCDKHYWDAIRFRYCAPPGYTL
LRCNDTNYSGFMPCSKVSVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPANLTPKWNNETWQEW
ERKVDLFLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVGVILLKIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWNYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88840.1

QIS88840.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPLREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
RIGQPEGGNPLSAIPPSRSM

QIS88839.1

QIS88839.1 vpx protein, partial [Simian immunodeficiency virus]

WEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGGHAGGWRPGPPPPPPGLA

QIS88838.1

QIS88838.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMHNCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPCSKVSVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDKNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPANLTPKWNNETWQEW
ERKVDLFLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG

YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88837.1

QIS88837.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88836.1

QIS88836.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGGPPPPPPGLA

QIS88835.1

QIS88835.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMAENVTESFDAWNN
TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPCSKVSVSSCTRMETQTSTWFGFNGTRAENRTIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTSTNDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQALNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQKEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88834.1

QIS88834.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88833.1

QIS88833.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGGPPPPPPGLA

QIS88832.1

QIS88832.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMAENVTESFDAWNN
TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPCSKVSVSSCTRMETQTSTWFGFNGTRAENRTIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNIDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQALNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQKEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88831.1

QIS88831.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88830.1

QIS88830.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLGEGHGAGGWRPGPPPPPPGLA
 QIS88829.1
 QIS88829.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMGTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTSTNDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCIRIQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVD FLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88828.1
 QIS88828.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88827.1
 QIS88827.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLGEGHGAGGWRPGPPPPPPGLA
 QIS88826.1
 QIS88826.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDVNETSSCIAQDNCTGL
 EQEQMISCKFNMGTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNIDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCIRIQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVD FLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88825.1
 QIS88825.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88824.1
 QIS88824.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLGEGHGAGGWRPGPPPPPPGLA
 QIS88823.1
 QIS88823.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMGTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNIDKINLTAPGGGDPEVTFMWTNCRGEFL

YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAGIVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEWERKVDVFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVQMLAKLRQG YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWKTLLRRGGRWILAIPRRIRQGLELTLL QIS88822.1

QIS88822.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88821.1

QIS88821.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLGEGHGAGGWRPGPPPPPPGLA

QIS88820.1

QIS88820.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRPGNKTVL PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNIDKINLTAPGGGDPEVTFMWTNCRGEFL YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAGIVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEWERKVDVFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVQMLAKLRQG YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLLRRGGRWILAIPRRIRQGLELTLL QIS88819.1

QIS88819.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88818.1

QIS88818.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLGEGHGAGGWRPGPPPPPPGLA

QIS88817.1

QIS88817.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRPGNKTVL PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNIDKINLTAPGGGDPEVTFMWTNCRGEFL YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAGIVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEWERKVDVFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVQMLAKLRQG YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLLRRGGRWILAIPRRIRQGLELTLL QIS88816.1

QIS88816.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88815.1
QIS88815.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88814.1
QIS88814.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMFKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTSTNDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKRNYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQNTNI
TMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTGNLQTRVTAIEKYLKDAQNLAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIYGVYIVVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGGSSWPWQIEYIHFLIRQLIRLLTWLFSNCRLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

QIS88813.1
QIS88813.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88812.1
QIS88812.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88811.1
QIS88811.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMFKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTSTNDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKRNYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQNTNI
TMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTGNLQTRVTAIEKYLKDAQNLAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIYGVYIVVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGGSSWPWQIEYIHFLIRQLIRLLTWLFSNCRLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

QIS88810.1
QIS88810.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88809.1
QIS88809.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88808.1
QIS88808.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGIPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN

TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTSTNDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88807.1

QIS88807.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88806.1

QIS88806.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGGLA

QIS88805.1

QIS88805.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88804.1

QIS88804.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGGLA

QIS88803.1

QIS88803.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMAALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTSTNDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88802.1

QIS88802.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88801.1

QIS88801.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGGLA

QIS88800.1

QIS88800.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMAALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASITSTTASAKVDMVNETSSCIAQDNCTGL

EEQEMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSIIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPQEQHKRNYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQNTNI
TMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVD FLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVIIYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88799.1

QIS88799.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88798.1

QIS88798.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88797.1

QIS88797.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EEQEMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPQEQHKRNYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTMTSLIANIDWIDGNQNTNI
TMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVD FLEENITALLEEAQIRQEKMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGAILLRIVIIYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88796.1

QIS88796.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88795.1

QIS88795.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88794.1

QIS88794.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EEQEMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPQEQHKRNYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQNTNI
TMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVD FLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVIIYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP

ILQRLSATLQRIREVLRTTELTYLQYGWSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88793.1
 QIS88793.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGNPLSAIPPSRSM
 QIS88792.1
 QIS88792.1 vpx protein, partial [Simian immunodeficiency virus]
 VVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA
 QIS88791.1
 QIS88791.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDKVVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGNPLSAIPPSRSM
 QIS88790.1
 QIS88790.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA
 QIS88789.1
 QIS88789.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIAKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASITSTTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSIIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG
 IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLKDAQLNAGWCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDFFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPAALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRLLSRVYQILQP
 ILQRLSATLQRIREVLRTTELTYLQYGWSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88788.1
 QIS88788.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGNPLSAIPPSRSM
 QIS88787.1
 QIS88787.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA
 QIS88786.1
 QIS88786.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIAKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASITSTTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSIIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG
 IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLKDAQLNAGWCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDFFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPAALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRLLSRVYQILQP
 ILQRLSATLQRIREVLRTTELTYLQYGWSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

QIS88785.1
 QIS88785.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGNPLSAIPPSRSM
 QIS88784.1
 QIS88784.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA
 QIS88783.1
 QIS88783.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASITSTTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSIIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGFLATAGSAMGAASLTTLAQSRLLAG
 IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDFFLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYIVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
 QIS88782.1
 QIS88782.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGNPLSAIPPSRSM
 QIS88781.1
 QIS88781.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA
 QIS88780.1
 QIS88780.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASITSTTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSIIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGFLATAGSAMGAASLTTLAQSRLLAG
 IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDFFLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYIVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
 QIS88779.1
 QIS88779.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGNPLSAIPPSRSM
 QIS88778.1
 QIS88778.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPGYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA
 QIS88777.1

QIS88777.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLDQAQLNTWGCFAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDFFLEENITALLEEAIQKEKNMYELQKLNWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRGGRWILAIIPRRIRQGLELTLL
QIS88776.1

QIS88776.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88775.1

QIS88775.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88774.1

QIS88774.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNKSRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLKLGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQQLLDVVKRQQLLRLLTVWETKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDFFLEENITALLEEAIQKEKNMYKLQKLNWDVFGNWFDLASWIKYIQYGVYIVVGVILLRVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIQEVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRKGGRWILAIIPRRIRQGLELTLL
QIS88773.1

QIS88773.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDKVVVEVLEELKEKALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88772.1

QIS88772.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88771.1

QIS88771.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASITSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSIIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLVG

IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
 QIS88770.1
 QIS88770.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88769.1
 QIS88769.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGHGAGGWRPGGPPPPPPGLA
 QIS88768.1
 QIS88768.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88767.1
 QIS88767.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGHGAGGWRPGGPPPPPPPPGLA
 QIS88766.1
 QIS88766.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88765.1
 QIS88765.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGHGAGGWRPGGPPPPPPPPGLA
 QIS88764.1
 QIS88764.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIPKVKLSPLCITMRCKNSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQITIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNTWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
 QIS88763.1
 QIS88763.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88762.1
 QIS88762.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGHGAGGWRPGGPPPPPPPPGLA
 QIS88761.1
 QIS88761.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN

TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASITSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSIIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88760.1

QIS88760.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88759.1

QIS88759.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88758.1

QIS88758.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDKVVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88757.1

QIS88757.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88756.1

QIS88756.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMAENVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAQIRQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88755.1

QIS88755.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88754.1

QIS88754.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88753.1

QIS88753.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMAENVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASITSTTASAKVDMVNETSSCIAQDNCTGL

EEQEMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSIIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQNTNI
TMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVD FLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88752.1

QIS88752.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88751.1

QIS88751.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88750.1

QIS88750.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EEQEMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQNTNI
TMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNTWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVD FLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88749.1

QIS88749.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88748.1

QIS88748.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88747.1

QIS88747.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASITSTTASAKVDMVNETSSCIAQDNCTGL
EEQEMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSIIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQNTNI
TMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVD FLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP

ILQRLSATLQRIREVLRTTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88746.1

QIS88746.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88745.1

QIS88745.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88744.1

QIS88744.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASITSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSIIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCIRIQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDFFLEENITALLEEAIQQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGIVLLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRLLSRVYQILQP
ILQRLSATLQRIREVLRTTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88743.1

QIS88743.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88742.1

QIS88742.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88741.1

QIS88741.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDKNTANQKPKEQHKNRYVPCIRIQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDFFLEENITALLEEAIQQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGIVLLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRLLSRVYQILQP
ILQRLSATLQRIREVLRTTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88740.1

QIS88740.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88739.1

QIS88739.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88738.1

QIS88738.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVD FLEENITALLEEAQIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYITVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

QIS88737.1

QIS88737.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88736.1

QIS88736.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88735.1

QIS88735.1 envelope glycoprotein, partial [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVD FLEENITALLEEAQIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQA

QIS88734.1

QIS88734.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88733.1

QIS88733.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88732.1

QIS88732.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDKNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN

TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVD FLEENITALLEEAQIQEKNMYELQKLNWDVFGNWF DLASWIKYIQYGVYIVVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88731.1

QIS88731.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88730.1

QIS88730.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88729.1

QIS88729.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88728.1

QIS88728.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88727.1

QIS88727.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETS IKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWEDRNTANQKPKEQHKRNYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQNTNI
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVD FLEENITALLEEAQIQEKNMYELQKLNWDVFGNWF DLASWIKYIQYGVYIVVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLADAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88726.1

QIS88726.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88725.1

QIS88725.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88724.1

QIS88724.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETS IKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWEDKNTANQKPKEQHKRNYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQNTNI
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG

IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVD FLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGIVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88723.1

QIS88723.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88722.1

QIS88722.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88721.1

QIS88721.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSICKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVD FLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGIVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKERDGGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRTREVLRTELTYLQYGWSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88720.1

QIS88720.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88719.1

QIS88719.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88718.1

QIS88718.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSICKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDKNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVD FLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGIVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88717.1

QIS88717.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88716.1
 QIS88716.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA
 QIS88715.1
 QIS88715.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDKNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQNTI
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDDAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDFFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88714.1
 QIS88714.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88713.1
 QIS88713.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA
 QIS88712.1
 QIS88712.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88711.1
 QIS88711.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWGYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA
 QIS88710.1
 QIS88710.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDKNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQNTI
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDDAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDFFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88709.1
 QIS88709.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88708.1

QIS88708.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA
 QIS88707.1
 QIS88707.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDAQLNAGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKERDGGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRTREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRGGRWILAIPRRIRQGLELTLL
 QIS88706.1
 QIS88706.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88705.1
 QIS88705.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA
 QIS88704.1
 QIS88704.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASARVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDAQLNAGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRGGRWILAIPRRIRQGLELTLL
 QIS88703.1
 QIS88703.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88702.1
 QIS88702.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA
 QIS88701.1
 QIS88701.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL

PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88700.1

QIS88700.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGRGNPLSAIPPSRSM

QIS88699.1

QIS88699.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEGHAGGWRGPPPPPPPPGLA

QIS88698.1

QIS88698.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
TVTEQAIEDVWQLLETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTTSTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88697.1

QIS88697.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGRGNPLSAIPPSRSM

QIS88696.1

QIS88696.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEGHAGGWRGPPPPPPPPGLA

QIS88695.1

QIS88695.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
TVTEQAIEDVWQLFETSIPKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88694.1

QIS88694.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88693.1
 QIS88693.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGHAGGWRPGGPPPPPPGLA
 QIS88692.1
 QIS88692.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASARVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDAQALNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGIVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGGNSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88691.1
 QIS88691.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88690.1
 QIS88690.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGHAGGWRPGGPPPPPPGLA
 QIS88689.1
 QIS88689.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDAQALNAWGCAFRQVCHTTVPWPANLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGIVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGGNSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88688.1
 QIS88688.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88687.1
 QIS88687.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGHAGGWRPGGPPPPPPGLA
 QIS88686.1
 QIS88686.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSISKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYLRLGDKLVEITPIGLAPTNVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPANLTPKWNNETWQEW
ERKVDLFLEENITALLEEAQIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGGSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88685.1

QIS88685.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPEGGNPLSAIPPSRSM

QIS88684.1

QIS88684.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA

QIS88683.1

QIS88683.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSISKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYLRLGDKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPANLTPKWNNETWQEW
ERKVDLFLEENITALLEEAQIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGGSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88682.1

QIS88682.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGNPLSAIPPSRSM

QIS88681.1

QIS88681.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA

QIS88680.1

QIS88680.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSISKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYLRLGDKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPANLTPKWNNETWQEW

ERKVDLFLEENITALLEEAIQQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88679.1
 QIS88679.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGNPLSAIPPSRGML
 QIS88678.1
 QIS88678.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGLPPPPPPPPGLA
 QIS88677.1
 QIS88677.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIPCKVLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDIAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQITIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAIQQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88676.1
 QIS88676.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPEGGNPLSAIPPSRSM
 QIS88675.1
 QIS88675.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGLPPPPPPPPGLA
 QIS88674.1
 QIS88674.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIPCKVLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDIAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQITIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPANLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAIQQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88673.1
 QIS88673.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGNPLSAIPPSRSM
 QIS88672.1

QIS88672.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGGPPPPPPGLA
QIS88671.1

QIS88671.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTNVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDAQLNAGCAFRQVCHTTVPWPANLTPKWNNETWQEW
ERKVDFFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGGSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRSATETLAGAWGDLWETLRGGRWILAIPRRIRQGLELTLL
QIS88670.1

QIS88670.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPEGGNPLSAIPPSRSM

QIS88669.1
QIS88669.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGGPPPPPPGLA
QIS88668.1

QIS88668.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESKCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDAQLNAGCAFRQVCHTTVPWPANLTPKWNNETWQEW
ERKVDFFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGGSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRSATETLAGAWGDLWETLRGGRWILAIPRRIRQGLELTLL
QIS88667.1

QIS88667.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQTGGGNPLSAIPPSRSM

QIS88666.1
QIS88666.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGGPPPPPPGLA
QIS88665.1

QIS88665.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQTISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL

PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKERDGGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88664.1

QIS88664.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88663.1

QIS88663.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGHAGGWRGPPPPPPPPGLA

QIS88662.1

QIS88662.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTTRMMETQTSTWFGFNGTRAENRTIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKERDGGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88661.1

QIS88661.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88660.1

QIS88660.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGHAGGWRGPPPPPPPPGLA

QIS88659.1

QIS88659.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTTRMMETQTSTWFGFNGTRAENRTIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAWGCAFRQVCHTTVPWPNASLAPKWNNETWQEW
ERKVDLFLEENITALLEEAIQQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDDGGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88658.1

QIS88658.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGRGNPLSAIPPSRSM
 QIS88657.1
 QIS88657.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGHAGGWRGPPPPPPPPGLA
 QIS88656.1
 QIS88656.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGIVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGGNSWPWQIEYIHFLIRQLIRLLTWLFSNCRLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88655.1
 QIS88655.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGRGNPLSAIPPSRSM
 QIS88654.1
 QIS88654.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGHAGGWRGPPPPPPPPGLA
 QIS88653.1
 QIS88653.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGIVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGGNSWPWQIEYIHFLIRQLIRLLTWLFSNCRLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88652.1
 QIS88652.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGNPLSAIPPSRNML
 QIS88651.1
 QIS88651.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGHAGGWRGPPPPPPPPGLA
 QIS88650.1
 QIS88650.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSICKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYLRLGDKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
YRPVFSPPSYFQQTHIQDPALPTREGKEGDGEGGGGSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88649.1

QIS88649.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFKGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88648.1

QIS88648.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA

QIS88647.1

QIS88647.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSICKPCVKLSPLCITMRCNKSETDRWGLTKSTTTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYLRLGDKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
YRPVFSPPSYFQQTHIQDPALPTREGKEGDGEGGGGSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88646.1

QIS88646.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88645.1

QIS88645.1 vpx protein, partial [Simian immunodeficiency virus]

RVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA

QIS88644.1

QIS88644.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSICKPCVKLSPLCITMRCNKNETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYLRLGDKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW

ERKVDLFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88643.1
 QIS88643.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPEGGNPLSAIPPSRSM
 QIS88642.1
 QIS88642.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRGPPPPPPPPGLA
 QIS88641.1
 QIS88641.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIPCKVLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQITIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88640.1
 QIS88640.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPEGGNPLSAIPPSRSM
 QIS88639.1
 QIS88639.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRGPPPPPPPPGLA
 QIS88638.1
 QIS88638.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIPCKVLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQITIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTAVPWPNASLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88637.1
 QIS88637.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPEGGNPLSAIPPSRSM
 QIS88636.1

QIS88636.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA
 QIS88635.1
 QIS88635.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDAQLNAGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDFFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGGSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRGGRWILAIPRRIRQGLELTLL
 QIS88634.1
 QIS88634.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGYIHS
 RIGQPGGNPLSAIPPSRSM
 QIS88633.1
 QIS88633.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA
 QIS88632.1
 QIS88632.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDAQLNAGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDFFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKGGDGEGGGGSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRGGRWILAIPRRIRQGLELTLL
 QIS88631.1
 QIS88631.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGRNPLSAIPPSRSM
 QIS88630.1
 QIS88630.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA
 QIS88629.1
 QIS88629.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL

PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNI
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88628.1

QIS88628.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPEGGNPLSAIPPSRSM

QIS88627.1

QIS88627.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEGHAGGWRGPPPPPPPPGLA

QIS88626.1

QIS88626.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTAASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNI
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88625.1

QIS88625.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFKGGCIHS
RIGQPGGNPLSAIPPSRSM

QIS88624.1

QIS88624.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEGHAGGWRGPPPPPPPPGLA

QIS88623.1

QIS88623.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVSETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNI
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYLHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88622.1

QIS88622.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPEGGNPLSAIPPSRSM
 QIS88621.1
 QIS88621.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRGPPPPPPPPGLA
 QIS88620.1
 QIS88620.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLKDAQALNAWGCAFRQVCHTTVPWPANLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGIVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGGNSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88619.1
 QIS88619.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPEGGNPLSAIPPSRSM
 QIS88618.1
 QIS88618.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRGPPPPPPPPGLA
 QIS88617.1
 QIS88617.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCITQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLKDAQALNAWGCAFRQVCHTTVPWPANLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGIVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGGNSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88616.1
 QIS88616.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGNPLSAIPPSRNML
 QIS88615.1
 QIS88615.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRGPPPPPPPPGLA
 QIS88614.1
 QIS88614.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSICKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVRHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYLRLGDKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNTSLTPKWNNETWQEW
ERKVDLFLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGGSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88613.1

QIS88613.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPEGGNPLSAIPPSRSM

QIS88612.1

QIS88612.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA

QIS88611.1

QIS88611.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSICKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYLRLGDKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPANLTPKWNNETWQEW
ERKVDLFLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGGSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSKVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88610.1

QIS88610.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGNPLSAIPPSRSM

QIS88609.1

QIS88609.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA

QIS88608.1

QIS88608.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATVPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSICKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYLRLGDKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW

ERKVD FLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88607.1
 QIS88607.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFKGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88606.1
 QIS88606.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRGPPPPPPPPGLA
 QIS88605.1
 QIS88605.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIPCKVLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPCSKVSVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVD FLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88604.1
 QIS88604.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88603.1
 QIS88603.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRGPPPPPPPPGLA
 QIS88602.1
 QIS88602.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIPCKVLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPCSKVSVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVD FLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88601.1
 QIS88601.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHSRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88600.1

QIS88600.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA
 QIS88599.1
 QIS88599.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITKRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKLKEQHKNRYVPCHIRQIINTWHKVGNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDAQLNAGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAIQEQKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRGGRWILAIPRRIRQGLELTLL
 QIS88598.1
 QIS88598.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88597.1
 QIS88597.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA
 QIS88596.1
 QIS88596.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLGTVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDAQLNAGCAFRQVCHTTVPWPVNSLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAIQEQKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRGGRWILAIPRRIRQGLELTLL
 QIS88595.1
 QIS88595.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88594.1
 QIS88594.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA
 QIS88593.1
 QIS88593.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL

PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYLRLGDKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88592.1

QIS88592.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGRGNPLSAIPPSRSM

QIS88591.1

QIS88591.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRGPPPPPPPPGLA

QIS88590.1

QIS88590.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKNETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYLRLGDKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88589.1

QIS88589.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGNPLSAIPPSRSM

QIS88588.1

QIS88588.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRGPPPPPPPPGLA

QIS88587.1

QIS88587.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYLRLGDKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88586.1

QIS88586.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88585.1
 QIS88585.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEGHAGGWRGPPPPPPPPGLA
 QIS88584.1
 QIS88584.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATQNRDWTGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDAQLNAGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGIVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGGNSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88583.1
 QIS88583.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCTHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88582.1
 QIS88582.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEGHAGGWRGPPPPPPPPGLA
 QIS88581.1
 QIS88581.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATQNRDWTGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDAQLNAGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGIVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGGNSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88580.1
 QIS88580.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCTHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88579.1
 QIS88579.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEGHAGGWRGPPPPPPPPGLA
 QIS88578.1
 QIS88578.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATQNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMGTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYLRLGDKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITVLLLEAAQIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGGSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88577.1

QIS88577.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCTHS
RIGQPGGGNPLSAIPPSRSM

QIS88576.1

QIS88576.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGLPPPPPPPPGLA

QIS88575.1

QIS88575.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATQNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMGTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPIDDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYLRLGDKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLLEAAQIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGGSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88574.1

QIS88574.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCTHS
RIGQPGGGNPLSAIPPSRSM

QIS88573.1

QIS88573.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGLPPPPPPPPGLA

QIS88572.1

QIS88572.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATQNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMGTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYLRLGDKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW

ERKVD FLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG VILLRIVYIVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88571.1
 QIS88571.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCTHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88570.1
 QIS88570.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRGPPPPPPPGLA
 QIS88569.1
 QIS88569.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATQNRDWTGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIPCKVLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGFLATAGSAMGAASLTLTASRTLLAG
 IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVD FLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG VILLRIVYIVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88568.1
 QIS88568.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCTHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88567.1
 QIS88567.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRGPPPPPPPGLA
 QIS88566.1
 QIS88566.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATQNRDWTGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIPCKVLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGFLATAGSAMGAASLTLTASRTLLAG
 IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVD FLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG VILLRIVYIVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88565.1
 QIS88565.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCTHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88564.1

QIS88564.1 vpx protein, partial [Simian immunodeficiency virus]
 VWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA
 QIS88563.1
 QIS88563.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATQNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDAQLNAGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDFLEENITVLLAEAIIQEQKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGGSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRGGRWILAIPRRIRQGLELTLL
 QIS88562.1
 QIS88562.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGYTHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88561.1
 QIS88561.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA
 QIS88560.1
 QIS88560.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATQNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDAQLNAGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDFLEENITALLAEAIIQEQKNMYELQKLSWDVGLGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGGSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRGGRWILAIPRRIRQGLELTLL
 QIS88559.1
 QIS88559.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCTHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88558.1
 QIS88558.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA
 QIS88557.1
 QIS88557.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATQNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVLPVTI

MSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFLYCKM
NWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSA
EVAELRYRELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAGIVQQ
QQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEWERKV
DFLEENITVLLLEAAQIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGIVILLRIVIIYIVQMLAKLRQGYRPV
FSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQR
LSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88556.1

QIS88556.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCTHS
RIGQPGGGNPLSAIPPSRSM

QIS88555.1

QIS88555.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGGPPPPPPGLA

QIS88554.1

QIS88554.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATQNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMGTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHWDIAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELRYRELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITVLLLEAAQIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGIVILLRIVIIYIVQMLAKLRQ
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88553.1

QIS88553.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCTHS
RIGQPGGGNPLSAIPPSRSM

QIS88552.1

QIS88552.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGGPPPPPPGLA

QIS88551.1

QIS88551.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCTHS
RIGQPGGGNPLSAIPPSRSM

QIS88550.1

QIS88550.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGGPPPPPPGLA

QIS88549.1

QIS88549.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCTHS
RIGQPGGGNPLSAIPPSRSM

QIS88548.1

QIS88548.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGGPPPPPPGLA

QIS88547.1
 QIS88547.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCTHS
 RIGQPGGNPLSAIPPSRSM
 QIS88546.1
 QIS88546.1 vpx protein, partial [Simian immunodeficiency virus]
 VWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA
 QIS88545.1
 QIS88545.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATQNRDTWGTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDIAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFRGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG
 IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDFFLEENITVLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYIVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIIPRIRQGLELTLL
 QIS88544.1
 QIS88544.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCTHS
 RIGQPGGNPLSAIPPSRSM
 QIS88543.1
 QIS88543.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA
 QIS88542.1
 QIS88542.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATQNRDTWGTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDIAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG
 IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDFFLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYIVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTSLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIIPRIRQGLELTLL
 QIS88541.1
 QIS88541.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCTHS
 RIGQPGGNPLSAIPPSRSM
 QIS88540.1
 QIS88540.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA
 QIS88539.1

QIS88539.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCTHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88538.1
 QIS88538.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEGHAGGWRPGGPPPPPPGLA
 QIS88537.1
 QIS88537.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATQNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDAQLNAGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDLFLEENITVLLEEAQIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGIVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGGNSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88536.1
 QIS88536.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCTHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88535.1
 QIS88535.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEGHAGGWRPGGPPPPPPGLA
 QIS88534.1
 QIS88534.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSTDLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDAQLNAGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAQIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGIVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQQDPALPTREGKERDGGEGGGGNSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88533.1
 QIS88533.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88532.1
 QIS88532.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEGHAGGWRPGGPPPPPPGLA
 QIS88531.1
 QIS88531.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
TVTEQAIEDVWQLFETSICKVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYLRLGDKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGGSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88530.1

QIS88530.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88529.1

QIS88529.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA

QIS88528.1

QIS88528.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
TVTEQAIEDVWQLFETSICKVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYLRLGDKLVEITPIGLAPTNVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGGSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88527.1

QIS88527.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88526.1

QIS88526.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA

QIS88525.1

QIS88525.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
TVTEQAIEDVWQLFETSICKVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYLRLGDKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW

ERKVDLFLEENITALLEEAIQQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKERDGGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88524.1

QIS88524.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88523.1

QIS88523.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSHVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA

QIS88522.1

QIS88522.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
TVTEQAIEDVWQLFETSIPCKVLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPCSKVSVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88521.1

QIS88521.1 vpr protein [Simian immunodeficiency virus]

MEERPPGNEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88520.1

QIS88520.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPNYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA

QIS88519.1

QIS88519.1 vpr protein [Simian immunodeficiency virus]

MEERPPGNEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88518.1

QIS88518.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPNYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA

QIS88517.1

QIS88517.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
TVTEQAIEDVWQLFETSIPCKVLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPCSKVSVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVVQMLAKLRQG

YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTETYLYQYGSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88516.1

QIS88516.1 vpr protein [Simian immunodeficiency virus]

MEERPPGNEGPPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88515.1

QIS88515.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPNYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA

QIS88514.1

QIS88514.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPCSKVSVSSCTRMETQTSTWFGFNGTRAENRTIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCIRIQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQALNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQKEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTETYLYQYGSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88513.1

QIS88513.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88512.1

QIS88512.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA

QIS88511.1

QIS88511.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPCSKVSVSSCTRMETQTSTWFGFNGTRAENRTIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCIRIQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQALNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQKEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTETYLYQYGSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88510.1

QIS88510.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88509.1

QIS88509.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLGEGHGAGGWRPGPPPPPPGLA
 QIS88508.1
 QIS88508.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMGTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCIRIQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88507.1
 QIS88507.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88506.1
 QIS88506.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLGEGHGAGGWRPGPPPPPPGLA
 QIS88505.1
 QIS88505.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMGTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCIRIQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88504.1
 QIS88504.1 vpr protein [Simian immunodeficiency virus]
 MEERPPGNEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88503.1
 QIS88503.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPNYVKYRYLCLIQKALFMHCKKGCRCLGEGHGAGGWRPGPPPPPPGLA
 QIS88502.1
 QIS88502.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMGTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL

YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELYRLELG DYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAGIVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEWERKVD FLEENITALLEEAQIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVQMLAKLRQG YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL QIS88501.1

QIS88501.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLGEGHGAGGWRPGPPPPPPGGLA
QIS88500.1

QIS88500.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL EQEQMISCKFNMGTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL LRCNDTNYSGFMFKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELYRLELG DYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAGIVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW ERKVD FLEENITALLEEAQIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVQMLAKLRQG YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL QIS88499.1

QIS88499.1 vpr protein [Simian immunodeficiency virus]
MEERPPGNEGPPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS RIGQPGGGNPLSAIPPSRSMQLQHMLL
QIS88498.1

QIS88498.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPNYVKYRYLCLIQKALFMHCKKGCRCLGEGHGAGGWRPGPPPPPPGGLA
QIS88497.1

QIS88497.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL EQEQMISCKFNMGTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL LRCNDTNYSGFMFKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLITNIDWIDGNQTNITMSAEVAELYRLELG DYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAGIVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW ERKVD FLEENITALLEEAQIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVVQMLAKLRQG YRPVFSSPPSYFQQTHIQDPALPTREGKERDGGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL QIS88496.1

QIS88496.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS RIGQPGGGNPLSAIPPSRSMQL
QIS88495.1

QIS88495.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLGEGHGAGGWRPGPPPPPPGGLA

QIS88494.1

QIS88494.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMGTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCIRIQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQNTNI
TMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDFFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
YRPVFFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

QIS88493.1

QIS88493.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHDGTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88492.1

QIS88492.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLGEGHGAGGWRPGPPPPPPGGLA

QIS88491.1

QIS88491.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMGTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCIRIQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQNTNI
TMSAEVAELYRLELGDYKLVETPIGLAPTNVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDFFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
YRPVFFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

QIS88490.1

QIS88490.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHDGTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88489.1

QIS88489.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLGEGHGVGGWRPGPPPPPPGGLA

QIS88488.1

QIS88488.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMGTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL

YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAGIVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEWERKVDVFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVQMLAKLRQG YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88487.1

QIS88487.1 vpr protein [Simian immunodeficiency virus]
MEERPPGNEGPPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88486.1

QIS88486.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPNYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88485.1

QIS88485.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGLEEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL LRCNDTNYSGFMFKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL PVTIMSGLVFHSQPINDRPKQAWCWFGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAGIVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEWERKVDVFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLKIVYIVQMLAKLRQG YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGKWILAIPRRIRQGLELTLL
QIS88484.1

QIS88484.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPPQREPWDEWVVEILEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88483.1

QIS88483.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88482.1

QIS88482.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGLEEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL LRCNDTNYSGFMFKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAGIVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEWERKVDVFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVVQMLAKLRQG YRPVFSSPPSYFQQTHIQDPALPTREGKERDGGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRDGRWILAIPRRIRQGLKLTL
QIS88481.1

QIS88481.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88480.1

QIS88480.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88479.1

QIS88479.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMFKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQITVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQNTNI
TMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

QIS88478.1

QIS88478.1 vpr protein [Simian immunodeficiency virus]

MEERPPGNEGPPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88477.1

QIS88477.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPNYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88476.1

QIS88476.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMFKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQITVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQNTNI
TMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

QIS88475.1

QIS88475.1 vpr protein [Simian immunodeficiency virus]

MEERPPGNEGPPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88474.1

QIS88474.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPNYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88473.1

QIS88473.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN

TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMHNCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88472.1

QIS88472.1 vpr protein [Simian immunodeficiency virus]

MEERPPGNEGPPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88471.1

QIS88471.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPNYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA

QIS88470.1

QIS88470.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMHNCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGSGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88469.1

QIS88469.1 vpr protein [Simian immunodeficiency virus]

MEERPPGNEGPPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88468.1

QIS88468.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPNYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA

QIS88467.1

QIS88467.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMHNCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYIVQMLAKLRQG

YRPVFSSPPSYFQQIHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88466.1

QIS88466.1 vpr protein [Simian immunodeficiency virus]
MEERPPGNEGPPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM
QIS88465.1

QIS88465.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPNYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPG
QIS88464.1

QIS88464.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPCSKVSVSSCTRMETQTSTWFGFNGTRAENRTIYWHGRDNRTIISLNKYYNLTMKCRPGNKT
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKRNYVPCIRIQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDAQLNAGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQKEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGIVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88463.1

QIS88463.1 vpr protein [Simian immunodeficiency virus]
MEERPPGNEGPPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM
QIS88462.1

QIS88462.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPNYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPG
QIS88461.1

QIS88461.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPPQREPWDKVVVEVLEELKKEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAMPSSRSM
QIS88460.1

QIS88460.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPG
QIS88459.1

QIS88459.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM
QIS88458.1

QIS88458.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPG
QIS88457.1

QIS88457.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL

LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDENQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDFFLEENITALLEEAIQKEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTTELTYLQYGWNYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRVRQGLELTLL
QIS88456.1

QIS88456.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGNPLSAIPPSRSM

QIS88455.1

QIS88455.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88454.1

QIS88454.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSICKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDIAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDFFLEENITALLEEAIQKEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88453.1

QIS88453.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGNPLSAIPPSRSM

QIS88452.1

QIS88452.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88451.1

QIS88451.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGNPLSAIPPSRSM

QIS88450.1

QIS88450.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88449.1

QIS88449.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSICKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDIAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTVMKRRPGNKTVL

PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNI
TMSAEVAELYLRLGDKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88448.1

QIS88448.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88447.1

QIS88447.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGHAGGWRGPPPPPPGLA

QIS88446.1

QIS88446.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPCSKVSVSSCTRMETQTSTWFGFNGTRAENRTIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGINNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNI
TMSAEVAELYLRLGDKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88445.1

QIS88445.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88444.1

QIS88444.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGHAGGWRGPPPPPPPRLA

QIS88443.1

QIS88443.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDKWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAMPPSRSM

QIS88442.1

QIS88442.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGHAGGWRGPPPPPPPPGLA

QIS88441.1

QIS88441.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPCSKVSVSSCTRMETQTSTWFGFNGTRAENRTIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL

YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAGIVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEWERKVDVFLEENITALLEEAIQQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVIIYIVQMLAKLRQG YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL QIS88440.1

QIS88440.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88439.1

QIS88439.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLGEGHGAGGWRPGPPPPPPGLA

QIS88438.1

QIS88438.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGLEEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL LRCNDTNYSGFMFKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAGIVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEWERKVDVFLEENITALLEEAIQQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVIIYIVQMLAKLRQG YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL QIS88437.1

QIS88437.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88436.1

QIS88436.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLGEGHGAGGWRPGPPPPPPGLA

QIS88435.1

QIS88435.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGLEEQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL LRCNDTNYSGFMFKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAGIVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEWERKVDVFLEENITALLEEAIQQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVIIYIVQMLAKLRQG YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQPILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL QIS88434.1

QIS88434.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM
QIS88433.1
QIS88433.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGGLA
QIS88432.1
QIS88432.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM
QIS88431.1
QIS88431.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGGLA
QIS88430.1
QIS88430.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTQCLPDNGDYSEALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESKCYMNCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQNTNI
TMSAEVAELYRLELGDYKLVETPIGLAPTQVRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRITLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDAQLNAGWCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRITLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88429.1
QIS88429.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM
QIS88428.1
QIS88428.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGGLA
QIS88427.1
QIS88427.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTQCLPDNGDYSEALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPRQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQNTNI
TMSAEVAELYRLELGDYKLVETPIGLAPTNVRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRITLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDAQLNAGWCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRITLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88426.1
QIS88426.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS

RIGQPGGGNPLSAIPPSRSM

QIS88425.1

QIS88425.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88424.1

QIS88424.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPAQAWCFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWEDRNTANQKPKEQHKRNYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQNTNI
TMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

QIS88423.1

QIS88423.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88422.1

QIS88422.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88421.1

QIS88421.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88420.1

QIS88420.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88419.1

QIS88419.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPAQAWCFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLMAPEGGDPEVTFMWTNCRGEFL
YCKMNWFLNWEDRNTANQKPKEQHKRNYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQNTNI
TMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEEDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

QIS88418.1

QIS88418.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88417.1

QIS88417.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88416.1

QIS88416.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTTSTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQNTNI
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDFFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYVQMLTKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWSATETLAGTWGDLWETLRRGGRWILAIPRRIRQGLELTLL

QIS88415.1

QIS88415.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGNPLSAIPPSRSM

QIS88414.1

QIS88414.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88413.1

QIS88413.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQNTNI
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDFFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

QIS88412.1

QIS88412.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGNPLSAIPPSRSM

QIS88411.1

QIS88411.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88410.1

QIS88410.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL

LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPRQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVSKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEVTPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVD FLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88409.1

QIS88409.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGNPLSAIPPSRSM

QIS88408.1

QIS88408.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88407.1

QIS88407.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
TVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDIAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPRQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVSKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVD FLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88406.1

QIS88406.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGNPLSAIPPSRSM

QIS88405.1

QIS88405.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88404.1

QIS88404.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
TVTEQAIEDVWQLFETSIIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDIAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPRQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLMAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVSKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVD FLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYSQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGTWGDLWETLRRGGRWILAIIPRRIRQGLELTLL

QIS88403.1
 QIS88403.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGNPLSAIPPSRSM
 QIS88402.1
 QIS88402.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA
 QIS88401.1
 QIS88401.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIATLLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGTRAENRTYIYWHGRDSRTIISLNKYYNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDFFLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYIVQMLAKLRQG
 YRPVFSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
 QIS88400.1
 QIS88400.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGNPLSAIPPSRSM
 QIS88399.1
 QIS88399.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA
 QIS88398.1
 QIS88398.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASARVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLMAPEGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDFFLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYIVQMLAKLRQG
 YRPVFSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWSATETLAGAWEDLWETLRRGGRWILAIIPRRIRQGLELTLL
 QIS88397.1
 QIS88397.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGNPLSAIPPSRSM
 QIS88396.1
 QIS88396.1 vpx protein, partial [Simian immunodeficiency virus]
 QIWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA
 QIS88395.1

QIS88395.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDAQLNAGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDFFLEENITALLEEAIQKEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQAHIQDDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88394.1

QIS88394.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88393.1

QIS88393.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88392.1

QIS88392.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDAQLNAGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDFFLEENITALLEEAIQKEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQAHIQDDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88391.1

QIS88391.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88390.1

QIS88390.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88389.1

QIS88389.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG

IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVD FLEENITALLEEAQIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGIVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQAHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88388.1

QIS88388.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88387.1

QIS88387.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88386.1

QIS88386.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVD FLEENITALLEEAQIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGIVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQAHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88385.1

QIS88385.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88384.1

QIS88384.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88383.1

QIS88383.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVD FLEENITALLEEAQIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGIVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQAHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88382.1

QIS88382.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88381.1
 QIS88381.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA
 QIS88380.1
 QIS88380.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLAQSRLLAG
 IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDFLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQAHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRITLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88379.1
 QIS88379.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88378.1
 QIS88378.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA
 QIS88377.1
 QIS88377.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLAQSRLLAG
 IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDFLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQAHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRITLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88376.1
 QIS88376.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88375.1
 QIS88375.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA
 QIS88374.1
 QIS88374.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88373.1

QIS88373.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA
 QIS88372.1
 QIS88372.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDAQLNAGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQAHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRGGRWILAIPRRIRQGLELTLL
 QIS88371.1
 QIS88371.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGNPLSAIPPSRSM
 QIS88370.1
 QIS88370.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA
 QIS88369.1
 QIS88369.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDAQLNAGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQAHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRGGRWILAIPRRIRQGLELTLL
 QIS88368.1
 QIS88368.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGNPLSAIPPSRSM
 QIS88367.1
 QIS88367.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA
 QIS88366.1
 QIS88366.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL

PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAGWCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQAHIQQDPALPTREGKEGDGEGGGGNSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88365.1

QIS88365.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88364.1

QIS88364.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRGPPPPPPPPGLA

QIS88363.1

QIS88363.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAGWCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQAHIQQDPALPTREGKEGDGEGGGGNSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88362.1

QIS88362.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88361.1

QIS88361.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRGPPPPPPPPGLA

QIS88360.1

QIS88360.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAGWCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQAHIQQDPALPTREGKEGDGEGGGGNSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88359.1

QIS88359.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88358.1
 QIS88358.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEGHAGGWRPGRPPPPPPGLA
 QIS88357.1
 QIS88357.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDAQLNAGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGIVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQAHIQDPALPTREGKEGDGEGGGGNSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88356.1
 QIS88356.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88355.1
 QIS88355.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEGHAGGWRPGRPPPPPPGLA
 QIS88354.1
 QIS88354.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDAQLNAGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGIVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQAHIQDPALPTREGKEGDGEGGGGNSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88353.1
 QIS88353.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88352.1
 QIS88352.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEGHAGGWRPGRPPPPPPGLA
 QIS88351.1
 QIS88351.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSICKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCFEGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYLRLGDKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKERDGGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88350.1

QIS88350.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88349.1

QIS88349.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGGYGAGGWRPGRPPPPPPGLA

QIS88348.1

QIS88348.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSICKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQKQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCFEGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYLRLGDKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAQIQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKERDGGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88347.1

QIS88347.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88346.1

QIS88346.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGGHGAGGWRPGRPPPPPPGLA

QIS88345.1

QIS88345.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSICKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQKQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCFEGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYLRLGDKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW

ERKVDLFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKERDGGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88344.1
 QIS88344.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88343.1
 QIS88343.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRGPPPPPPPPGLA
 QIS88342.1
 QIS88342.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKERDGGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88341.1
 QIS88341.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88340.1
 QIS88340.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRGPPPPPPPPGLA
 QIS88339.1
 QIS88339.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGFLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAIQEQKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKERDGGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88338.1
 QIS88338.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88337.1

QIS88337.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA
 QIS88336.1
 QIS88336.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKTNLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDAQLNAGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKERDGGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRGGRWILAIPRRIRQGLELTLL
 QIS88335.1
 QIS88335.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGNPLSAIPPSRSM
 QIS88334.1
 QIS88334.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA
 QIS88333.1
 QIS88333.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKTNLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDAQLNAGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKERDGGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRGGRWILAIPRRIRQGLELTLL
 QIS88332.1
 QIS88332.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGNPLSAIPPSRSM
 QIS88331.1
 QIS88331.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA
 QIS88330.1
 QIS88330.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL

PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKERDGGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88329.1

QIS88329.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88328.1

QIS88328.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRGPPPPPPPPGLA

QIS88327.1

QIS88327.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFEKGWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKERDGGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88326.1

QIS88326.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHICNRHGDTEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88325.1

QIS88325.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRGPPPPPPPPGLA

QIS88324.1

QIS88324.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTIYWHGRDNRTIISLNKYNNLTMTKCRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFEKGWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKERDGGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88323.1

QIS88323.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88322.1
 QIS88322.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEGHAGGWRPGRPPPPPPGLA
 QIS88321.1
 QIS88321.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNETRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCFEGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGIVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88320.1
 QIS88320.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVMEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88319.1
 QIS88319.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEGHAGGWRPGRPPPPPPGLA
 QIS88318.1
 QIS88318.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNETRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCFEGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGIVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
 QIS88317.1
 QIS88317.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVMEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88316.1
 QIS88316.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEGHAGGWRPGRPPPPPPGLA
 QIS88315.1
 QIS88315.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
TVTEQAIEDVWQLFETSICKVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGGSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88314.1

QIS88314.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88313.1

QIS88313.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGLPPPPPPGLA

QIS88312.1

QIS88312.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
TVTEQAIEDVWQLFETSICKVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGGSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88311.1

QIS88311.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88310.1

QIS88310.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGLPPPPPPGLA

QIS88309.1

QIS88309.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLSSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
TVTEQAIEDVWQLFETSICKVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW

ERKVD FLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG VILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88308.1

QIS88308.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDRLRLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88307.1

QIS88307.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRGPPPPPPPGLA

QIS88306.1

QIS88306.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSIPCKVLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGFLATAGSAMGAASLTLDQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVD FLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG VILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKERDGGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88305.1

QIS88305.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88304.1

QIS88304.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRGPPPPPPPGLA

QIS88303.1

QIS88303.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
TVTEQAIEDVWQLFETSIPCKVLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCITQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGFLATAGSAMGAASLTLTQSRTLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLKDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVD FLEENITALLEEAQIQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVG VILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88302.1

QIS88302.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88301.1

QIS88301.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA
 QIS88300.1
 QIS88300.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLKDAQLNAGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGGSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRGGRWILAIPRRIRQGLELTLL
 QIS88299.1
 QIS88299.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPHLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88298.1
 QIS88298.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA
 QIS88297.1
 QIS88297.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEMALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNKRGVFLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
 IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLKDAQLNAGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDLFLEENITALLEEAIQKEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIYVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGGSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRGGRWILAIPRRIRQGLELTLL
 QIS88296.1
 QIS88296.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88295.1
 QIS88295.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGRPPPPPPGLA
 QIS88294.1
 QIS88294.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGGNPLSAIPPSRSM
 QIS88293.1
 QIS88293.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88292.1

QIS88292.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMGTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCIRIQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQNTNI
TMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVD FLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

QIS88291.1

QIS88291.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPHLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88290.1

QIS88290.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88289.1

QIS88289.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMGTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCIRIQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQNTNI
TMSAEVAELYRLELGDYKLVETPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAG
IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVD FLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

QIS88288.1

QIS88288.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPHLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88287.1

QIS88287.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88286.1

QIS88286.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMGTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL

YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELYRLELGDKYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAGIVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEWERKVD FLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVQMLAKLRQG YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL QIS88285.1

QIS88285.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGGLA
QIS88284.1

QIS88284.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNYCNTSVIQESCDKHYWDAIRFRYCAPPGYAL LRCNDTNYSGFMFKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELYRLELGDKYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAGIVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEWERKVD FLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVQMLAKLRQG YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWRSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL QIS88283.1

QIS88283.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS RIGQPGGGNPLSAIPPSRSM

QIS88282.1
QIS88282.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGGLA
QIS88281.1

QIS88281.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS RIGQPGGGNPLSAIPPSRSM

QIS88280.1
QIS88280.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGGLA
QIS88279.1

QIS88279.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN TVTEQAIEDVWQLFETSIPKCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTTASAKVDMVNETSSCIAQDNCTGL EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNYCNTSVIQESCDKHYWDAIRFRYCAPPGYAL LRCNDTNYSGFMFKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYYNLTMKCRRPGNKTVL PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTNITMSAEVAELYRLELGDKYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLTAQSRTLLAGIVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLKDAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEWERKVD FLEENITALLEEAIQQEKNMYELQKLSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIVQMLAKLRQG YRPVFSSPPSYFQQTHIQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP

ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88278.1

QIS88278.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGNPLSAIPPSRSM

QIS88277.1

QIS88277.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88276.1

QIS88276.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQNTNI
TMSAEVAELYRLELGDYKLVETPIGLAPTVDKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDFFLEENITALLEEAIQQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPVLPTRREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL
QIS88275.1

QIS88275.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGNPLSAIPPSRSM

QIS88274.1

QIS88274.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88273.1

QIS88273.1 vpr protein [Simian immunodeficiency virus]

MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGNPLSAIPPSRSM

QIS88272.1

QIS88272.1 vpx protein, partial [Simian immunodeficiency virus]

QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88271.1

QIS88271.1 envelope glycoprotein [Simian immunodeficiency virus]

MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPREGDLTCNSTVTSLIANIDWIDGNQNTNI
TMSAEVAELYRLELGDYKLVETPIGLAPTVDKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQQLLDVVKRQQLLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDFFLEENITALLEEAIQQEKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVGVILLRIVYIVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRLLSRVYQILQP
ILQRLSATLQRIREVLRTELTYLQYGWSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIPRRIRQGLELTLL

QIS88270.1
 QIS88270.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPHLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGNPLSAIPPSRSM
 QIS88269.1
 QIS88269.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA
 QIS88268.1
 QIS88268.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDIAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLAQSRLLAG
 IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDFFLEENITALLEEAQIQKKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYIVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRITLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
 QIS88267.1
 QIS88267.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGNPLSAIPPSRSM
 QIS88266.1
 QIS88266.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA
 QIS88265.1
 QIS88265.1 envelope glycoprotein [Simian immunodeficiency virus]
 MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTQCLPDNGDYSEVALNVTESFDAWNN
 TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
 EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDIAIRFRYCAPPGYAL
 LRCNDTNYSGFMPKCSKVVSSTRMMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
 PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
 YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGKNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
 TMSAEVAELYRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGFLATAGSAMGAASLTTLAQSRLLAG
 IVQQQQQLLDVVKRQQELLRLTVWGTKNLQTRVTAIEKYLDQAQLNAWGCAFRQVCHTTVPWPNASLTPKWNNETWQEW
 ERKVDFFLEENITALLEEAQIQKKNMYELQKLNSWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYIVQMLAKLRQG
 YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRITLLSRVYQILQP
 ILQRLSATLQRIREVLRTELTYLQYGSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
 QIS88264.1
 QIS88264.1 vpr protein [Simian immunodeficiency virus]
 MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTLEGAGELIRILQRALFMHFRGGCIHS
 RIGQPGGNPLSAIPPSRSM
 QIS88263.1
 QIS88263.1 vpx protein, partial [Simian immunodeficiency virus]
 QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA
 QIS88262.1

QIS88262.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLKDAQLNAGWCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQKKNMYELQKLNWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTTELTYLQYGWSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88261.1

QIS88261.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88260.1

QIS88260.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

QIS88259.1

QIS88259.1 envelope glycoprotein [Simian immunodeficiency virus]
MGCLGNQLLIAILLLSVYGIYCTLYVTVFYGVPAWRNATIPLFCATKNRDTWGTTQCLPDNGDYSEVALNVTESFDAWNN
TVTEQAIEDVWQLFETSIKPCVKLSPLCITMRCNKSETDRWGLTKSITTTASTTSTASAKVDMVNETSSCIAQDNCTGL
EQEQMISCKFNMTGLKRDKKKEYNETWYSADLVCEQGNNTGNESRCYMNHCNTSVIQESCDKHYWDAIRFRYCAPPGYAL
LRCNDTNYSGFMPKCSKVVVSSCTRMETQTSTWFGFNGTRAENRTYIYWHGRDNRTIISLNKYNNLTMKCRRPGNKTVL
PVTIMSGLVFHSQPINDRPKQAWCWFGGKWKDAIKEVKQTIVKHPRYTGTNNTDKINLTAPGGGDPEVTFMWTNCRGEFL
YCKMNWFLNWVEDRNTANQKPKEQHKNRYVPCHIRQIINTWHKVGNVYLPPREGDLTCNSTVTSLIANIDWIDGNQTN
TMSAEVAELRLELGDYKLVEITPIGLAPTDVKRYTTGGTSRNRKGVFVLGFLGLATAGSAMGAASLTTLAQSRLLAG
IVQQQQQLLDVVKRQQLLRLLTVWGTKNLQTRVTAIEKYLKDAQLNAGWCAFRQVCHTTVPWPNASLTPKWNNETWQEW
ERKVDLFLEENITALLEEAIQKKNMYELQKLNWDVFGNWFDLASWIKYIQYGVYIVVGVILLRIVYIYVQMLAKLRQG
YRPVFSSPPSYFQQTHIQQDPALPTREGKEGDGEGGGNSSWPWQIEYIHFLIRQLIRLLTWLFSNCRTLLSRVYQILQP
ILQRLSATLQRIREVLRTTELTYLQYGWSYFHEAVQAVWSATETLAGAWGDLWETLRRGGRWILAIIPRRIRQGLELTLL
QIS88258.1

QIS88258.1 vpr protein [Simian immunodeficiency virus]
MEERPPENEGPQREPWDEWVVEVLEELKEEALKHFDPRLLTALGNHIYNRHGDTEGAGELIRILQRALFMHFRGGCIHS
RIGQPGGGNPLSAIPPSRSM

QIS88257.1

QIS88257.1 vpx protein, partial [Simian immunodeficiency virus]
QVWQRSWEYWHDEQGMSPSYVKYRYLCLIQKALFMHCKKGCRCLEGEHGAGGWRPGPPPPPPGLA

XP_009970171.1

XP_009970171.1 T-cell-specific surface glycoprotein CD28 isoform X1 [Tyto alba alba]

MLLGILVLCFIPTADV TENKILVAQHPLLIVANKTATLVCNYTYNGTGKEFRASLHKGTGSAVEVCFISWNTTKTSSNS
NKEFNCGQIHDKDKVIFNLWNMSADQTDIYFCKIEAMYPYVYNEKSNGTVIHVKETPIQTQEPQSAIPLWIMVSVTG
LAFYSMLITAVFINYWQSKKKKTYHQSDYMNMTPRHPYQKNKGYPYAPTRDYTAYRSWQP

XP_002187875.1

XP_002187875.1 T-cell-specific surface glycoprotein CD28 isoform X1 [Taeniopygia guttata]

MLLGILVVLFFIPTADV TENKILVAQHPLLVANQTATLVCNYTYNGTGKEFRASLQKGTDS SVEVCVISWNTTKISSNS
NKGFNCGQSYDKDKVIFNLWNMTNQTDIYFCKIEVMYPPPYVYNEKSNGTVIHVKETPTQIQEPQSAIPLWILATVTGI
LALYSTLITAVSINYWQKSKKMYRQSDYMNMTPRHPYPYQKNKGYPYAPTRDYTAYRSWQP

NP_001274339.1

NP_001274339.1 T-cell-specific surface glycoprotein CD28 precursor [Sus scrofa]
MILGLLLALNFFPSIQVTGNKILVKQSPILVVDNEVNL SCKYTYNLF SKEFRASLYKGADSAVEVCVNVNYSRLLQFK
PNTGFNCVKYGNETVTFYLRNLHVNQTDIYFCKIEVLYPPPYIDNEKSNGTIIHVKEKHCPAPRPPESSKIFWVLVVVN
GVVAFYSLVVTALFFYWMKSKRTRMLQSDYMNMTPRRLGPTRKHYPYAPARDFAAYS

XP_006194333.1

XP_006194333.1 T-cell-specific surface glycoprotein CD28 [Camelus ferus]
MTRRSGVSSAHLTLGLLREEGLEPWPTVSTMILRLLALNFFPSIQVTENKILVKQSPMLVVNNNEVNL SCKYTYNLF SK
EFRASLYKGADSAVEVCVVSNGYSYQLQFHSSTGFNCNGKLGNETVTFYLRDLVYNQTDIYFCKIEVMYPPPYIDNEKSN
GTIIHVKEKHLCPAPWSPPESSKPFWALVVVASILAFYSLLASVALCNCWLKSKRNRMLQSDYMNMTPRRPGPTRRHYQPY
APARDFAAYS

XP_015723742.1

XP_015723742.1 T-cell-specific surface glycoprotein CD28 [Coturnix japonica]
MLGILVVLCLIPAADV TENKILVAQRPLLVANRTATLVCNYTYNGTGKEFRASLHKGTDSAVEVCFISWNTKINSNSN
KEFNCGIHDKDKVIFNLWNMSASQTDIYFCKIEAMYPPPYIYNEKSNGTVIHVRETPVQTQEPESATSYWVMVTVTGLL
GFYSVLITAVFIIYRQKSKRNRYPYQSDYMNMTPRHPPHQKNKGYPYAPTREYTAYRSWQP

QHZ20485.1

QHZ20485.1 Sequence 111 from patent US 10501542

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRG IASFVCEYASPGKATEVRVTVLRQADSQ
VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLT IQGLRAMDTGLYICKVELMYPPPYL GIGNGTQIYVIDPEPCPDS
DFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPECEKQFQPYFIPIN

QHY89223.1

QHY89223.1 Sequence 87 from patent US 10479833

MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVGNYSSQLQVYS
KTGFNC DGKLGNESVTFYLRNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSP LFPGPSKPFWVLVVVG
GVLACYSLLVTVAFIIFWVRSKRSRLLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYS

QHY89214.1

QHY89214.1 Sequence 77 from patent US 10479833

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRG IASFVCEYASPGKATEVRVTVLRQADSQ
VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLT IQGLRAMDTGLYICKVELMYPPPYL GIGNGTQIYVIDPEPCPDS
DFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPECEKQFQPYFIPIN

QHY78057.1

QHY78057.1 Sequence 4 from patent US 10471098

MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVGNYSSQLQVYS
KTGFNC DGKLGNESVTFYLRNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSP LFPGPSKPFWVLVVVG
GVLACYSLLVTVAFIIFWVRSKRSRLLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYS

QHY12645.1

QHY12645.1 Sequence 75 from patent US 10457732

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRG IASFVCEYASPGKATEVRVTVLRQADSQ
VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLT IQGLRAMDTGLYICKVELMYPPPYL GIGNGTQIYVIDPEPCPDS
DFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPECEKQFQPYFIPIN

QHX48885.1

QHX48885.1 Sequence 12 from patent US 10415015

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRG IASFVCEYASPGKATEVRVTVLRQADSQ
VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLT IQGLRAMDTGLYICKVELMYPPPYL GIGNGTQIYVIDPEPCPDS

DFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPECEKQFQPYFIPIN
 QHX48884.1
 QHX48884.1 Sequence 11 from patent US 10415015
 MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVYGNYSQQLQVYS
 KTGFNC DGKLGNESVTFYLNLYVNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSPFLPGPSKPFVWL VVVG
 GVLACYSLLVTVAFIIFWVRSKRSRLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYRS
 QHX46549.1
 QHX46549.1 Sequence 16 from patent US 10414814
 VPLSLYS
 QHX46548.1
 QHX46548.1 Sequence 15 from patent US 10414814
 QDSTSDLIPAPPLSKVPLQQNFQDNQFHGKWWVGLAGNRILRDDQHPMNMATYIELKEDKSYNVTSVISSHKKCEYTI
 ATFPVPGSQPGFTLGNIKSYGDKTSYLVRVSTDYNNQYAVVFFKLAEDNAEFFAITIYGRTELASELKENFIRFSKSLG
 LPENHIVFPVPIDQCIDG
 QHX46547.1
 QHX46547.1 Sequence 14 from patent US 10414814
 MRPSGTAGAAALLALLAALCPASRADILLTQSPVILSVSPGERVSFSCRASQSIGTNIHWYQQRNGSPRLLIKYASESIS
 GIPSRFSGSGSGTDFTLINSVESEDIADYYCQQNNNWPTTFGAGTKLELKRTVAAPSVFIFPPSDEQLKSGTASVCLL
 NNFYPREAKVQWKVDNALQSGNSQESVTEQDSKSDSTYLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGA
 QHX46546.1
 QHX46546.1 Sequence 13 from patent US 10414814
 MRPSGTAGAAALLALLAALCPASRARKVCNGIGIGEFKDSLSINATNIHKFNCTISGDLHILPVAFRGDSFTHTPPLDP
 QELDILKTVEITGFLLIAAWPENRTDLHAFENLEIRGRTNMDGQFSLAVVSLNITSLGLRSLKEISDGDVVISGNKNL
 CYANTINWKKLFGTSGQKTKIISNRGENSCKATGQVCHALCSPEGCWGPEPKDCVSCRNVSRGRECSRGGSGGGSGGGS
 VPLSLYSGSTSGSGKSSESGSGAQVQLKQSGPGLVQPSQSLITCTVSGFSLTNYGVHVVWRQSPGKLEWLGVWSGGN
 TDYNTPTSRSLINKDNSKSQVFFKMNSLQSNDAIYYCARALTYDYEFAYWGQGLTVTVSAASTKGPSVFPLAPSSKS
 TSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSLGTQTYICNVNHKPSNTKVKDKR
 VEPKSCDKHTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREE
 QYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSREEMTKNQVSLTCLVKGFYP
 SDIAVEWESNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFCSCVMHEALHNHYTQKSLSLSPGK
 QHX46545.1
 QHX46545.1 Sequence 12 from patent US 10414814
 CSQFLRGQECVEECRVLQGLPREYVNARHCLPCHPECQPQNGSVTCFGPEADQCVACAHYKDPPFCVARCPSGVKPDLSY
 MPIWKFPDEEGACQPCPINGSRSGGTSGGGSVPVSGSGSGSTSGSGKSSESGSQASTHTCPPCPAPELLGGPSVFLFPPKP
 KDTLMISRTPEVTCVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKA
 LPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSFFLY
 SKLTVDKSRWQQGNVFCSCVMHEALHNHYTQKSLSLSPGK
 QHX46544.1
 QHX46544.1 Sequence 11 from patent US 10414814
 CSQFLRGQECVEECRVLQGLPREYVNARHCLPCHPECQPQNGSVTCFGPEADQCVACAHYKDPPFCVARCPSGVKPDLSY
 MPIWKFPDEEGACQPCPINGSRSGGTSGGGSVPLSLYSGSTSGSGKSSESGSQASTHTCPPCPAPELLGGPSVFLFPPKP
 KDTLMISRTPEVTCVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKA
 LPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSFFLY
 SKLTVDKSRWQQGNVFCSCVMHEALHNHYTQKSLSLSPGK
 QHX46543.1
 QHX46543.1 Sequence 10 from patent US 10414814
 MHVAQPAVLASSRGIA SFVCEYASPGKATEVRVTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQ
 GLRAMDTGLYICAVALMYPPPYLIGINGTQIYVIDPEPCPDSDGSRSGGTSGGGSVPLSLYSGSTSGSGKSSESGSQAS

THTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRV
VSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWE
SNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFCSCVMHEALHNHYTQKSLSLSPGK

QHX46542.1

QHX46542.1 Sequence 9 from patent US 10414814

HVAQPAVVLASSRGIA SFVCEYASPGKATEVRVTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQ
GLRAMDTGLYICKVALMYPPPYLGIGNGTQIYVIDPEPCPDSGSRSGGTSGGGSVPLSLYSGSTSGSGKSSEGGQAST
THTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRV
SVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWES
NGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFCSCVMHEALHNHYTQKSLSLSPGK

QHX46541.1

QHX46541.1 Sequence 8 from patent US 10414814

MHVAQPAVVLASSRGIA SFVCEYASPGKATEVRVTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQ
GLRAMDTGLYICKAVELMYPPPYLGIGNGTQIYVIDPEPCPDSGSRSGGTSGGGSVPLSLYSGSTSGSGKSSEGGQAS
THTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRV
VSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWE
SNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFCSCVMHEALHNHYTQKSLSLSPGK

QHX46540.1

QHX46540.1 Sequence 7 from patent US 10414814

MHVAQPAVVLASSRGIA SFVCEYASPGKATEVRVTVLRQADSQVTEVCAAHYMMGNELTFLDDSICTGTSSGNQVNLTIQ
GLRAMDTGLYICKVELMYPPPYLGIGNGTQIYVIDPEPCPDSGSRSGGTSGGGSVPLSLYSGSTSGSGKSSEGGQAS
THTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRV
VSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWE
SNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFCSCVMHEALHNHYTQKSLSLSPGK

QHX46539.1

QHX46539.1 Sequence 6 from patent US 10414814

MHVAQPAVVLASSRGIA SFVCEYASPGKATSVEVTVLRQADSQVTEVCAAHYMMGNELTFLDDSICTGTSSGNQVNLTIQ
GLRAMDTGLYICKVELMYPPPYLGIGNGTQIYVIDPEPCPDSGSRSGGTSGGGSVPLSLYSGSTSGSGKSSEGGQAS
THTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRV
VSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWE
SNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFCSCVMHEALHNHYTQKSLSLSPGK

QHX46538.1

QHX46538.1 Sequence 5 from patent US 10414814

MHVAQPAVVLASSRGIA SFVCEYASPGKATVRVTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQ
GLRAMDTGLYICKVELMYPPPYLGIGNGTQIYVIDPEPCPDSGSRSGGTSGGGSVPLSLYSGSTSGSGKSSEGGQAS
THTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRV
VSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWE
SNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFCSCVMHEALHNHYTQKSLSLSPGK

QHX46537.1

QHX46537.1 Sequence 4 from patent US 10414814

MHVAQPAVVLASSRGIA SFVCEYASPGKATKVRVTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQ
GLRAMDTGLYICKVELMYPPPYLGIGNGTQIYVIDPEPCPDSGSRSGGTSGGGSVPLSLYSGSTSGSGKSSEGGQAS
THTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRV
VSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWE
SNGQPENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFCSCVMHEALHNHYTQKSLSLSPGK

QHX46536.1

QHX46536.1 Sequence 3 from patent US 10414814

MHVAQPAVVLASSRGIA SFVCEYASPGKATSVRVTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQ

GLRAMDTGLYICKVELMYPPPYLIGINGTQIYVIDPEPCPDSGSRSGGTSGGGSVPLSLYSGSTSGSGKSSEGGQAS
THTCPPCPAPPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRV
VSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWE
SNGQPENNYKTTTPVLDSDGSFFLYSKLTVDKSRWQQGNVFCSCVMHEALHNHYTQKSLSLSPGK

QHX46535.1

QHX46535.1 Sequence 2 from patent US 10414814

MHVAQPAVVLASSRGIA SFVCEYASPGKATAVA VTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQ
GLRAMDTGLYICKVELMYPPPYLIGINGTQIYVIDPEPCPDSGSRSGGTSGGGSVPLSLYSGSTSGSGKSSEGGQAS
THTCPPCPAPPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRV
VSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWE
SNGQPENNYKTTTPVLDSDGSFFLYSKLTVDKSRWQQGNVFCSCVMHEALHNHYTQKSLSLSPGK

QHX46534.1

QHX46534.1 Sequence 1 from patent US 10414814

MHVAQPAVVLASSRGIA SFVCEYASPGKATEVRVT VLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQ
GLRAMDTGLYICKVELMYPPPYLIGINGTQIYVIDPEPCPDSGSRSGGTSGGGSVPLSLYSGSTSGSGKSSEGGQAS
THTCPPCPAPPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRV
VSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWE
SNGQPENNYKTTTPVLDSDGSFFLYSKLTVDKSRWQQGNVFCSCVMHEALHNHYTQKSLSLSPGK

XP_023075089.2

XP_023075089.2 cytotoxic T-lymphocyte protein 4 isoform X2 [Piliocolobus tephrosceles]

MACLGFQRHKARLNLATRTRPYTLLFSLLFIPVFSKAMHVAQPAVVLANSRGIA SFVCEYASPGKATEVRVT VLRQADSQ
VTEVCAATYMMGNELTFLDDSICTGTSSGNQMNLTIQGLRAMDTGLYICKVELMYPPPYMGINGTQIYVIAKEKKPSY
NRGLCENAPNRARM

XP_023075085.2

XP_023075085.2 cytotoxic T-lymphocyte protein 4 isoform X1 [Piliocolobus tephrosceles]

MACLGFQRHKARLNLATRTRPYTLLFSLLFIPVFSKAMHVAQPAVVLANSRGIA SFVCEYASPGKATEVRVT VLRQADSQ
VTEVCAATYMMGNELTFLDDSICTGTSSGNQMNLTIQGLRAMDTGLYICKVELMYPPPYMGINGTQIYVIDPEPCPDS
DFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPECEKQFQPYFIPIN

XP_023075079.1

XP_023075079.1 T-cell-specific surface glycoprotein CD28 isoform X2 [Piliocolobus tephrosceles]

MPCGLSALIMCLKGMVVVVAVDDGDSQALAGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVC
VVYGNYSQQLQVYSKTGFNCDGKLGNE SVTFYLQNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSPFLF
PGPSKPFWALVVVGVLACYSLLVTVAFSIFWMRSKR SLLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYRS

XP_023075074.1

XP_023075074.1 T-cell-specific surface glycoprotein CD28 isoform X1 [Piliocolobus tephrosceles]

MLRLLLALNLLPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVYGNYSQQLQVYS
KTGFNCDGKLGNE SVTFYLQNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSPFLFPGPSKPFWALVVVG
GVLACYSLLVTVAFSIFWMRSKR SLLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYRS

pdb|60IL|A

pdb|60IL|A Chain A, V-type immunoglobulin domain-containing suppressor of T-cell activation

FKVATPYSYLVCPEGQNVTLTCRLLGPVDKGHDVTFYK TWYRSSRGEVQTCSERRPIRQLTFQDLHLHHGGHQAAQTSHD
LAQRHGLESADHHGNFSITMRNLTLDSGLYCCLVVEIRHHHSEHRVHGAMELQVQTGKDAPSN CVVPSSSQESEQIT
AAHHHHHH

XP_006205268.1
 XP_006205268.1 T-cell-specific surface glycoprotein CD28 [Vicugna pacos]
 MTRRSGVSSAHLTLGLLREEGLEPWPTVSTMILRLLLALNFFPSIQVTENKILVKQSPMLVVNNNEVNLSCKYTYNLF
 SK EFRASLYKGADSAVEVCVVVSGNYSYQLQFHSSTGFNCNGKLGNETVTFYLRDLVYNQTDIYFCKIEVMYPPPYIDNEKSN
 GTIIHVKEKHLCPAPWSPESKPFWALVVVASILAFYSLLASVALCNCWLKSKRNRMLQSDYMNMTPRRPGPTRRHYQPY
 APARDFAAAYRS

XP_021779078.1
 XP_021779078.1 T-cell-specific surface glycoprotein CD28 isoform X2 [Papio anubis]
 MLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVVYGNYSQQLQVYSKTGFNC DGKLGNESVTFYLLQNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSPFLPGPSKPFWALVVVGVLACYSLLVTVAFSIFWMRSKRSRL
 LHSDYMNMTPRRPGPTRKHYPYAPPRDFAAAYRS

XP_021779077.1
 XP_021779077.1 cytotoxic T-lymphocyte protein 4 isoform X2 [Papio anubis]
 MACLGFRHKAQLNLATRTRPYTLLFSLLFIPVFSKAMHVAQPAVVLANSRGIA SFVCEYASPGKATEVRVTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYMGIGNGTQIYVIAEKKPSHNRGLRENAPNRARM

XP_021779076.1
 XP_021779076.1 cytotoxic T-lymphocyte protein 4 isoform X1 [Papio anubis]
 MHVAQPAVVLANSRGIA SFVCEYASPGKATEVRVTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYMGIGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPECEKQFPYFIPIN

XP_009181099.1
 XP_009181099.1 T-cell-specific surface glycoprotein CD28 isoform X1 [Papio anubis]
 MPCGLSALIMCLKGMVAVVVAVDDGDSQALAGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVYGNYSQQLQVYSKTGFNC DGKLGNESVTFYLLQNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSPFLPGPSKPFWALVVVGVLACYSLLVTVAFSIFWMRSKRSRL
 LHSDYMNMTPRRPGPTRKHYPYAPPRDFAAAYRS

pdb|6MVL|L
 pdb|6MVL|L Chain L, Antibody Fab fragment light chain
 EIVLTQSPGTLSPGERATLSCRASQSVSSSYLAWYQQKPGQAPRLLIYGASSRATGIPDRFSGSGSGTDFTLTISRLEPEDFAVYYCQYGSSPFTFGPGTKVDIKRTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

pdb|6MVL|H
 pdb|6MVL|H Chain H, Antibody Fab fragment heavy chain
 EVQLVESGGGLVQPGKSLRLSCAASGFTLEDYAMHWVRQAPGKGLEWVSGIDWNSENIGYADSVKGRFTISRDNAKNSLYLQMNSLRTEDTALYYCAKVPYGSGGWDAEDDWGQGTMTVTSSASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSLGTQTYICNVNHKPSNTKVDKRVKPSCKDT

pdb|6MVL|A
 pdb|6MVL|A Chain A, V-type immunoglobulin domain-containing suppressor of T-cell activation
 AFKVATPYSLYVCEPQGNVTLTCRLLGPVDKGHDVTFYKTYWRSSRGEVQTCSERRPIRQLTFQDLHLHHGGHQAQTSHDLAQRHGLSESADHHGNFSITMRNLTLDSGLYCCLVVEIRHHHSEHRVHGAMELQVQTGKDAPSNVVPSSSQDSEQITAAHHHHHH

XP_021387032.1
 XP_021387032.1 T-cell-specific surface glycoprotein CD28 [Lonchura striata domestica]
 MLLGILVVLFFIPTADV TENKILVAQHPLLIVANQTATLVCNYTYNGTGKEFRASLQKGTDSSEVCFISWNTTKISSNS

NKGFNCQGSHDKDKVIFNLWNMTNQTDIYFCKIEVMYPPPYVYNEKSNGTVIHVKETPTQIQEPQSAIPLWILATVTGI
LALYSMLITAVSINYWQKSKKHMYSQSDYMNMTPRHPYQKNKGYPYAPTRDYTAYRSWQP

XP_010990053.1

XP_010990053.1 T-cell-specific surface glycoprotein CD28 [Camelus dromedarius]
MTRRSVSSAHLTLGLLREEGLEPWPTVSTMILRLLALNFFPSIQVTENKILVKQSPMLVVNNNEVNLCKYTYNLF
EFRASLYKGADSAVEVCVVSNGNYSYQLQFHSSTGFNCNGKLGNETVTFYLRDLVYNQTDIYFCKIEVMYPPPYIDNEKSN
GTIIHVKEKHLCPAPWSPSSKPFWALVVASILAFYSLLASVALCNCWLKSKRNRMLQSDYMNMTPRRPGPTRRHYQPY
APARDFAAAYRS

QFP15717.1

QFP15717.1 Sequence 8 from patent US 10370452

MACLGFQRHKAQLNLATRTWPCTLLFLLFIPVFCKAMHVAQPAVVLASSRGIAFVCEYASPGKATEVRVTVLRQADSQ
VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYLGGIGNGTQIYVIDPEPCPDS
DFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPECEKQFQPYFIPIN

QFP15712.1

QFP15712.1 Sequence 3 from patent US 10370452

MLRLLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLCKYSYNLFSREFRASLHKGLDSAVEVCVVGNYSSQLQVYS
KTGFNCNCGKLGNESVTFYLNLYVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSPFPGPSKPFWVLVVG
GVLACYSLLVTVAFIIFWVRSKRSRLLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAAYRS

QF049234.1

QF049234.1 Sequence 54 from patent US 10350266

MACLGFQRHKAQLNLATRTWPCTLLFLLFIPVFCKAMHVAQPAVVLASSRGIAFVCEYASPGKATEVRVTVLRQADSQ
VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYLGGIGNGTQIYVIDPEPCPDS
DFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPECEKQFQPYFIPIN

QFN59968.1

QFN59968.1 Sequence 7 from patent US 10335486

MACLGFQRHKAQLNLATRTWPCTLLFLLFIPVFCKAMHVAQPAVVLASSRGIAFVCEYASPGKATEVRVTVLRQADSQ
VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYLGGIGNGTQIYVIAEKKPSY
NRGLCENAPNRARM

QFN59962.1

QFN59962.1 Sequence 1 from patent US 10335486

MACLGFQRHKAQLNLATRTWPCTLLFLLFIPVFCKAMHVAQPAVVLASSRGIAFVCEYASPGKATEVRVTVLRQADSQ
VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYLGGIGNGTQIYVIDPEPCPDS
DFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPECEKQFQPYFIPIN

QFN47358.1

QFN47358.1 Sequence 11 from patent US 10323077

MLRLLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLCKYSYNLFSREFRASLHKGLDSAVEVCVVGNYSSQLQVYS
KTGFNCNCGKLGNESVTFYLNLYVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSPFPGPSKPFWVLVVG
GVLACYSLLVTVAFIIFWVRSKRSRLLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAAYRS

XP_018877318.1

XP_018877318.1 T-cell-specific surface glycoprotein CD28 isoform X1 [Gorilla gorilla gorilla]

MPCGLSALIMCPKGMVAVVVAVDDGDSQALAGNKILVKQSPMLVAYDNAVNLCKYSYNLFSREFRASLHKGLDSAVEVC
VVYGNYSQQLQVYSKTGFNCNCGKLGNESVTFYLNLYVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSPFP
PGPSKPFWVLVVGVLACYSLLVTVAFIIFWVRSKRSRLLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAAYRS

XP_004033134.1

XP_004033134.1 cytotoxic T-lymphocyte protein 4 isoform X2 [Gorilla gorilla gorilla]

MACLGFQRHKAQLNLATRTWPCTLLFLLFIPVFCKAMHVAQPAVVLASSRGIAFVCEYASPGKATEVRVTVLRQADSQ

VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYLIGIGNGTQIYVIAKEKKPSY
NRGLCENAPNRARM
XP_004033133.1
XP_004033133.1 cytotoxic T-lymphocyte protein 4 isoform X1 [Gorilla gorilla
gorilla]
MACLGFQRHKAQLNLATRTWPCTLLFLLFIPVFCKAMHVAQPAVVLASSRGIAFVCEYASPGKATEVRVTVLRQADSQ
VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYLIGIGNGTQIYVIDPEPCPDS
DFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPECEKQFQPYFIPIN
XP_004033130.1
XP_004033130.1 T-cell-specific surface glycoprotein CD28 isoform X2 [Gorilla
gorilla gorilla]
MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVYGNYSQQLQVYS
KTGFNCDDGKLGNESVTFYLNLYVNQTDIYFCKIEVMPYPYLDNEKSNGTIIHVKGKHLCPSPFPGPSKPFVWLVVVG
GVLACYSLLVTVAFIIFWVRSKRSRLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYRS
XP_010350938.1
XP_010350938.1 cytotoxic T-lymphocyte protein 4 isoform X2 [Rhinopithecus
roxellana]
MACLGFQRHKARLNLATRTRPYTLLFSLLFIPVFSEAMHVAQPAVVLANSRGIAFVCEYASPGKATEVRVTVLRQADSQ
VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYMGIGNGTQIYVIAKEKKPSY
NRGLCENAPNRARM
XP_010350936.1
XP_010350936.1 cytotoxic T-lymphocyte protein 4 isoform X1 [Rhinopithecus
roxellana]
MACLGFQRHKARLNLATRTRPYTLLFSLLFIPVFSEAMHVAQPAVVLANSRGIAFVCEYASPGKATEVRVTVLRQADSQ
VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYMGIGNGTQIYVIDPEPCPDS
DFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPECEKQFQPYFIPIN
XP_030709970.1
XP_030709970.1 T-cell-specific surface glycoprotein CD28 [Globicephala melas]
MCPERSKSVVVAADDESGCSGASPAHLTLGLLREEGRKPWPTVSTMIFSLLLALNFFPSIQVAENKILVNQSPMLVVNNN
EVNLSCKYTYNLSKEFRASLYKGVDSAVEVCAVNGNHSSKSLQSTNKEFNCTVNLGNETVTFYLDLYVNQTDIYFCKIE
VLYPPPYIDNEKSNGTIIHVKEKHLCPAPRSPSSKPFWALVVVNGVLAFYSLLATVALSNCWMKSKNRNMLQSDYMNMT
PRRPGPTRKHYPYAPARDFAAYRS
SZF06839.1
SZF06839.1 unnamed protein product [Homo sapiens]
MACLGFQRHKAQLNLATRTWPCTLLFLLFIPVFCKAMHVAQPAVVLASSRGIAFVCEYASPGKATEVRVTVLRQADSQ
VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYLIGIGNGTQIYVIDPEPCPDS
DFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPECEKQFQPYFIPIN
XP_022423186.1
XP_022423186.1 T-cell-specific surface glycoprotein CD28 [Delphinapterus leucas]
MCPERSKSVVVAADDESGCSGASPAHLTLGLLREEGRKPWPTVSTMILSLLLALNFFPSIQVAENKILVNQSPMLVVNNN
EVNLSCKYTYNLSKEFRASLYKGVDSAVEVCAVNGNHSSKSLQSTNKEFNCTVNLGNETVTFYLDLYVNQTDIYFCKIE
VLYPPPYIDNEKSNGTIIHVKEKHLCPAPRSPSSKPFWALVVVNGVLAFYSLLATVALSNCWMKSKNRNMLQSDYMNMT
PRRPGPTRKHYPYAPARDFAAYRS
KAA0171501.1
KAA0171501.1 hypothetical protein FNF28_00711 [Cafeteria roenbergensis]
MANAIELCRVMEADPDFLGLETGTIEEAAQTLEQVHNVRPEPPDSDETAWAVYGEAEGSRVDLGAPAAVLAPAFVAWA
GSGAAITSCDWSPLDPLGILAGTSDGISSARSALMSVSASPADANYVLASSAELGAAMYSVLEAGRAVTRLRPNGPTCTR
AALFGSGCTFALGSTSGQLFLGSVGQSQRMLMQPGAVADGLAAVSDLRVFPTVGRRHDAQGGTAIVVALTDGTVLAVPELP

GPELKATTTPTGTGAPDPLGSAGQGLLLGA STRAAGSE GKAGGGKAKRGVCWRLHDL SRLVL AGSPNVASLVQRGVPEKQ
TKSKPPAPATRRRRSGRAAKSGRRGRRRRPALESSEEEQDEEQSDDEDDDDDDYESEGGAREALPEGGSDGEGKDPVAADS
AGDAASLVPSMLWRRSALAVAGGVGAGEGRTQVVAAGFGDRTVTTLWFLDPL

NP_037058.1

NP_037058.1 T-lymphocyte activation antigen CD80 [Rattus norvegicus]

MAYSCQLMQESPLLGFPRRLRFIHLFVLLLVGLFQISSGIVGQVSKSVREKALLSCDYKFCSEEQSIHRIYWQKHKMVL
VISGVPEVWPEYKNRTVYDIANNYSFSLGLILSDRGTYTCVVQRYEGESYVVKHLTTVELSVRADFPTPNITESGNPSA
DIKRITCFASGGFPKPRLSWLENGRELNGINTTISQDPESELYTISSQLDFNTTYDHFIDCFIEYGAHVSNFTWVKPP
EDPPDEKQTIPFAWAGSDAVKAIIFFAITVIAVIAAIAIIIFCITVKFRRCFRRRNEASRETNKNLYIGPVEAAAEQT
V

pdb|1H6E|P

pdb|1H6E|P Chain P, CYTOTOXIC T-LYMPHOCYTE PROTEIN 4

TTGVYVKMPPT

pdb|1H6E|A

pdb|1H6E|A Chain A, CLATHRIN COAT ASSEMBLY PROTEIN AP50

HHHHHHEQKLISEEDLEGIKYRRNELFLDVLESVNLLMSPQGQVLSAHVSGRVVMKSYLSGMPECKFGMNDKIVIEKQCK
GTADETSKSGKQSI AIDDC TFHQCVRLSKFDSERSISFIPPDGEFELMRYRTTKDIILPFRVIPLVREVGR TKLEV KVV
KSNFKPSLLAQKIEVRIPTPLNTSGVQVICMKGKAKYKASENAIVWKIKRMAGMKESQISAEIELLPTNDKKKWARPPIS
MNFEPFAPSGLKVRYLKVFEPKLNYSDDHVIKWVRYIGRS GIYETRC

QDB28163.1

QDB28163.1 Sequence 6 from patent US 10300112

MACLGFQRHKAQLNLATRTWPCTLLFLLFIPVFCKAMHVAQPAVVLASSRG IASFVCEYASPGKATEVRVTVLRQADSQ
VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLT IQGLRAMDTGLYICKVELMYPPPYL GIGNGTQIYVIDPEPCPDS
DFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPEPECEKQFQPYFIPIN

QDB11288.1

QDB11288.1 Sequence 149 from patent US 10287362

MACLGFQRHKAQLNLATRTWPCTLLFLLFIPVFCKAMHVAQPAVVLASSRG IASFVCEYASPGKATEVRVTVLRQADSQ
VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLT IQGLRAMDTGLYICKVELMYPPPYL GIGNGTQIYVIDPEPCPDS
DFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPEPECEKQFQPYFIPIN

QDB08099.1

QDB08099.1 Sequence 11 from patent US 10286113

MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVYGNYSQQLQVYS
KTGFNCDGKLGNESVTFYLNLYVNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSP LFPGPSKPFWVLVVVG
GVLACYSLLVTVAFIIFWVRSKRSRLLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYRS

QDA90687.1

QDA90687.1 Sequence 14 from patent US 10266592

MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVYGNYSQQLQVYS
KTGFNCDGKLGNESVTFYLNLYVNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSP LFPGPSKPFWVLVVVG
GVLACYSLLVTVAFIIFWVRSKRSRLLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYRS

XP_021029151.1

XP_021029151.1 cytotoxic T-lymphocyte protein 4 isoform X2 [Mus caroli]

MACLGLRRYKAQLQLPSRTWPFVALLTLFIPVFSEAIQVTQPSVVLASSHG VASFPC EYSPSHNTDEVRVTVLRQTNDQV
TEVCATTFTEKNTVGFLDYPFCSGTFNESRVNLT IQGLRAADTGLYLCKVELMYPPPYFVGMGNGTQIYVIAKEKKSSYN
RGLCENAPNRARM

XP_021029147.1

XP_021029147.1 cytotoxic T-lymphocyte protein 4 isoform X1 [Mus caroli]

MACLGLRRYKAQLQLPSRTWPFVALLTLFIPVFSEAIQVTQPSVVLASSHG VASFPC EYSPSHNTDEVRVTVLRQTNDQV
TEVCATTFTEKNTVGFLDYPFCSGTFNESRVNLT IQGLRAADTGLYLCKVELMYPPPYFVGMGNGTQIYVIDPEPCPDS

FLLWILVAVSLGLFFYSFLVTAVSLSKMLKKRSPLTTGVYVKMPPTPECEKQFQPYFIPIN
 XP_029081575.1
 XP_029081575.1 T-cell-specific surface glycoprotein CD28 [Monodon monoceros]
 MCPERSKSVVVAADDESGCSGASPAHLTLGLLREEGRKPWPTVSTMILSLLLALNFFPSIQVAENKILVNQSPMLVVNNN
 EVNLSCKYTYNLSKEFRASLYKGVDSAVEVCAVNGNHSLKSLQSTNKEFNCTVNLGNETVTFYQLDLYVNQTDIYFCKIE
 VLYPPPYIDNEKSNGTIIHVKEKHLCPAPRSPESKPFWALVVVNGVLAFYSLLATVALSNCWMKSKRNRMLQSDYMNMT
 PRRPGPTRKHYPYAPARDFAAAYRS
 NP_001292881.1
 NP_001292881.1 cytotoxic T-lymphocyte protein 4 precursor [Cercopithecus atys]
 MACLGFQRHKARLNLATRTRPYTLLFSLLFIPVFSKAMHVAQPAVVLANSRGIAFVCEYASPGKATEVRVTVLRQADSQ
 VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYMGIGNGTQIYVIDPEPCPDS
 DFLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPECEKQFQPYFIPIN
 NP_001292846.1
 NP_001292846.1 cytotoxic T-lymphocyte protein 4 precursor [Macaca nemestrina]
 MACLGFQRHKARLNLATRTRPYTLLFSLLFIPVFSKAMHVAQPAVVLANSRGIAFVCEYASPGKATEVRVTVLRQADSQ
 VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYMGIGNGTQIYVIDPEPCPDS
 DFLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPECEKQFQPYFIPIN
 XP_010175011.1
 XP_010175011.1 T-cell-specific surface glycoprotein CD28 [Antristomus
 carolinensis]
 MFLGILVLCFIPAADV TENKILVAQRPLLIVANKTATLVCNYTYNGTGKEFRASLHKGTDSAVEVCFISWNMTKISSSS
 NKEFNCGIHKDKVIFNLWNMSASQTDIYFCKIEAMYPYPYVYNEKSNGTVIHVKETPIQTQEPQSAIPLWIMVAVIGV
 LAFYSMVTMVFINYWQKSKKNKYHQSDYMNMTPRHPYQKNKGYPYAPTRDYTAIRSWQP
 XP_014966209.1
 XP_014966209.1 cytotoxic T-lymphocyte protein 4 isoform X2 [Macaca mulatta]
 MACLGFQRHKARLNLATRTRPYTLLFSLLFIPVFSKAMHVAQPAVVLANSRGIAFVCEYASPGKATEVRVTVLRQADSQ
 VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYMGIGNGTQIYVIAEKKPSH
 NRGLCENAPNRARM
 XP_014966208.1
 XP_014966208.1 cytotoxic T-lymphocyte protein 4 isoform X1 [Macaca mulatta]
 MHVAQPAVVLANSRGIAFVCEYASPGKATEVRVTVLRQADSQVTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQ
 GLRAMDTGLYICKVELMYPPPYMGIGNGTQIYVIDPEPCPDSDFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLT
 TGVYVKMPPTPECEKQFQPYFIPIN
 XP_014966207.1
 XP_014966207.1 T-cell-specific surface glycoprotein CD28 isoform X1 [Macaca
 mulatta]
 MPCGLSALIMCLKGMVAVVVAVDDGDSQALAGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVC
 VVYGNYSQQLQVYSKTGFNCDGKLGNESVTFYQLNLYVNQTDIYFCKIEVMYPYPYLDNEKSNGTIIHVKGKHLCPSPFLF
 PGPSKPFWALVVVGVLACYSLLVTVAFCIFWMSKRSRLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAAYRS
 XP_028621569.1
 XP_028621569.1 cytotoxic T-lymphocyte protein 4 isoform X2 [Grammomys surdaster]
 MACLGVQRSKAVLQLSSRIWPFVALLGLFIPIFCEAIQVNQPSVVLASSHGVAFPCEYSSSHNTDEVTVLRQTNDQ
 VTEVCATTFTAKNTVGLDDPFCSGTFNESRVNLTIQGLRAADTGLYFCKVELMYPPPYFVGMGNGTQIYVIAEKKSSY
 NRGLCENAPNRARM
 XP_028621568.1
 XP_028621568.1 cytotoxic T-lymphocyte protein 4 isoform X1 [Grammomys surdaster]
 MACLGVQRSKAVLQLSSRIWPFVALLGLFIPIFCEAIQVNQPSVVLASSHGVAFPCEYSSSHNTDEVTVLRQTNDQ
 VTEVCATTFTAKNTVGLDDPFCSGTFNESRVNLTIQGLRAADTGLYFCKVELMYPPPYFVGMGNGTQIYVIDPEPCPDS

DFLLWILAAVSSGLFFYSFLVTAVSLSKMLKKRSPLTTGVYVKMPPTPEPECEKQFQPYFIPIN
 QCB09643.1
 QCB09643.1 Sequence 137 from patent US 10233214
 MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVYGNYSQQLQVYS
 KTGFNCDGKLGNESVTFYLNLYVNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSPFLPGPSKPFVWLVVVG
 GVLACYSLLVTVAFIIFWVRSKRSRLLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYRS
 VFV37133.1
 VFV37133.1 t-cell-specific surface glycoprotein cd28 [*Lynx pardinus*]
 MTETLRLWQVHLQLPSHFGLLGEEGLEPWPTVSTMILRLLLALNFFPSIQVTENKILVKQLPRLVVYNNEVNLSCKYTHN
 LFSKEFRASLYKGVDSAVEVCVVNGNYSHQPQFYSSTGFDGKLGNETVTFYLRNLFVNQTDIYFCKIEVMYPPPYIDN
 EKSNGTIIHVKEKHLCPAQLSPESSKPFWALVVVGILGFYSLLATVALGACWMKTKRSRILQSDYMNMTPRRPGPTRRH
 YQPYAPARDFAAYRS
 BBJ06441.1
 BBJ06441.1 EBNA1 protein, partial [Human gammaherpesvirus 4]
 EYHQEGGPDGEPDMPGVIQGPADDPGEGPSTGPRGQGDGGRKKGGWFGKHRGQGGSNQKFENIADGLRTLLARCHVE
 RTTDEGTWVAGVFVYGGSKTSLYNLRRGIALAIPQCRLTPLSRLPFGMAPGPGPQPGPLRESIVCYFIVFLQTHIFAEGL
 KDAIKDLVMPKPAPTCNIKATVCSFDDG
 TEA39819.1
 TEA39819.1 hypothetical protein DBR06_SOUSAS4610054 [*Sousa chinensis*]
 MCPERSKSVVVAADDESGCSGASPAHLTLGLLGEEGRKPWPTVSTMILSLLLALNFFPSIQVAENKILVNQSPMLVVNNN
 EVNLSCKYTYNLSKEFRASLYKGVDSAVECAVNGNHSKSLQSTNKEFNCTVNLGNETVTFYLQDLYVNQTDIYFCKIE
 VLYPPPYIDNEKSNGTIIHVKEKHLCPAPRSPESSKPFWALVVVNGVLAFYSLLATVALSNCWMKSKRNRMLQSDYMNMT
 PRRPGPTRKHYPYAPARDFAAYRS
 XP_007113471.1
 XP_007113471.1 T-cell-specific surface glycoprotein CD28 [*Physeter catodon*]
 MTSQVAQVRLQLTSHLGFSGRGGSPGPPFSTMILRLLLALNFFPSIQVAENKILVNQSPMLVVNNNEVNLSCKYTYNLF
 SKEFRASLYKGVDSAVECAVNGNHSKSLQSTNKEFNCTVNLGNETVTFYLQDLYVNQTDIYFCKIEVLYPPPYIDNEKS
 NGTIIHVKEKHLCPAPRSPESSKPFWALVVVNGVLTIFYSLATVALSNCWMKSKRNRRLQSDYMNMTPRRPGPTRKHYP
 YAPARDFAAYRS
 QBE40271.1
 QBE40271.1 Sequence 2 from patent US 10196445
 MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVYGNYSQQLQVYS
 KTGFNCDGKLGNESVTFYLNLYVNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSPFLPGPSKPFVWLVVVG
 GVLACYSLLVTVAFIIFWVRSKRSRLLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYRS
 QBE40270.1
 QBE40270.1 Sequence 1 from patent US 10196445
 MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRGIAFVCEYASPGKATEVRVTVLRQADSQ
 VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYLIGIGNGTQIYVIDPEPCPDS
 DFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPEPECEKQFQPYFIPIN
 QBD00431.1
 QBD00431.1 Sequence 54 from patent US 10166273
 MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRGIAFVCEYASPGKATEVRVTVLRQADSQ
 VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYLIGIGNGTQIYVIDPEPCPDS
 DFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPEPECEKQFQPYFIPIN
 QBC77531.1
 QBC77531.1 Sequence 5 from patent US 10155800
 MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRGIAFVCEYASPGKATEVRVTVLRQADSQ
 VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYLIGIGNGTQIYVIDPEPCPDS

DFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPECEKQFQPYFIPIN
 XP_028008836.1
 XP_028008836.1 T-cell-specific surface glycoprotein CD28 [*Eptesicus fuscus*]
 MILRLLLALNFFPSIQVAENKILVKQSPMLVVYNNVNLSCKYTYNLFKSKEFRASLYKGADSAVEVCVVGNGYSHQLQFR
 SKTGFDGDKLGNLTVTFYLVNLFVNQTDIYFCKIEVMYPPPYIDNEKSNGTIIHVKENHHCPAHRTPESSKPFWALVVA
 VGVLLALYSLLVTVALFTYWMKSKRNRVLQSDYLNMTPRRLGPTRRHYHPYAPSRDFAAYRS
 XP_007190638.1
 XP_007190638.1 T-cell-specific surface glycoprotein CD28 [*Balaenoptera
acutorostrata scammoni*]
 MCPERSKSVVVAADDESGCSGASPAHLTLGLLREEGREPWPTVSTMILRLVLALNFFPSIQVAENKILVNQSPMLVVNNN
 EVNLSCKYTYNLFKSKEFRASLYKGVDSCAVECAVNGNHSKSLQSTNKEFNCTVNLGNLTVTFYLDLYVNQTDIYFCKIE
 VLYPPPYIDNEKSNGTIIHVKEKHLCPAPRSPSSKPFWALVVVNGVLAFYSLLATVALSNCWMSKRNRLQSDYMNMT
 PRRPGPTRKHYPYVPARDFAAYRS
 XP_027967973.1
 XP_027967973.1 T-cell-specific surface glycoprotein CD28 isoform X2 [*Eumetopias
jubatus*]
 MILRLLLALNFFPSIQVTENKILVKQLPRLVVYNNEVNLSCKYTHNLFKSKEFRASLYKGVDSCAVEVCVVGNGYSHQPQFY
 SSTGFDGDKLGNLTVTFYLRKLFVNQTDIYFCKIEVMYPPPYIDNEKSNGTIIHVKEKHLCPAQPTPESSKPFWLVVV
 GGVLFVYSLLVTVALCACWMKNKRSRILQSDYMNMTPRRPGPTRRHYQPYAPARDFAAYRS
 XP_027967972.1
 XP_027967972.1 T-cell-specific surface glycoprotein CD28 isoform X1 [*Eumetopias
jubatus*]
 MASSNVIDFSKALHFPWRALLFLREAQKAGRWLAFNKNSSAKQENKILVKQLPRLVVYNNEVNLSCKYTHNLFKSKEFRAS
 LYKGVDSCAVEVCVVGNGYSHQPQFYSSSTGFDGDKLGNLTVTFYLRKLFVNQTDIYFCKIEVMYPPPYIDNEKSNGTIIH
 VKEKHLCPAQPTPESSKPFWLVVVGGVLFVYSLLVTVALCACWMKNKRSRILQSDYMNMTPRRPGPTRRHYQPYAPARD
 FAAYRS
 XP_027967971.1
 XP_027967971.1 T-cell-specific surface glycoprotein CD28 isoform X1 [*Eumetopias
jubatus*]
 MASSNVIDFSKALHFPWRALLFLREAQKAGRWLAFNKNSSAKQENKILVKQLPRLVVYNNEVNLSCKYTHNLFKSKEFRAS
 LYKGVDSCAVEVCVVGNGYSHQPQFYSSSTGFDGDKLGNLTVTFYLRKLFVNQTDIYFCKIEVMYPPPYIDNEKSNGTIIH
 VKEKHLCPAQPTPESSKPFWLVVVGGVLFVYSLLVTVALCACWMKNKRSRILQSDYMNMTPRRPGPTRRHYQPYAPARD
 FAAYRS
 XP_027819684.1
 XP_027819684.1 cytotoxic T-lymphocyte protein 4 isoform X1 [*Ovis aries*]
 MACSGFQSHGTWRTSRTWPCTALFFLLFIPVFSKGMNVTQPPVVLASSRGVASFTCEYESSGKADEVVTVLRKAGIQVT
 EVCAGTYMVEDELTFLLDSSCIGTSRGKNVNLTIQGLRAMDTGLYVCKVELMYPPPYMGEENGNTQIYVIAKEKKPSYYR
 GLRENAPNRARM
 pdb|5E5M|H
 pdb|5E5M|H Chain H, CTLA-4 nanobody
 MAQVQLVESGGGLAQPGGSLRLSCAASGSTISSVAVGWYRQTPGNQREWVATSSSTSTTATYADSVKGRFTISRDNKNT
 IYLMNSLKPEDTAVYYCKTGLTNWGRGTQVTVSSGGLPETGGHHHHH
 pdb|5E5M|G
 pdb|5E5M|G Chain G, Cytotoxic T-lymphocyte protein 4
 IQVTQPSVVLASSHGVSFPCEYSPSHNTDEVVRVTVLRQTNDQMTEVCATTFTEKNTVGFLDYPFCSGTFNESRVNLTIQ
 GLRAVDTGILYLCVELMYPPPYFVGMGNGTQIYVIDP
 pdb|5E5M|F
 pdb|5E5M|F Chain F, CTLA-4 nanobody

MAQVQLVESGGGLAQPGGSLRLSCAASGSTISSVAVGWYRQTPGNQREWVATSSSTSSTATYADSVKGRFTISRDNAKNT
IYLQMNSLKPEDTAVYYCKTGLTNWGRGTQVTVSSGGLPETGGHHHHHH
pdb|5E5M|E
pdb|5E5M|E Chain E, Cytotoxic T-lymphocyte protein 4
IQVTQPSVVLASSHGVASFPCEYSPSHNTDEVRVTVLRQTNDQMTEVCATTFTEKNTVGFLDYPFCSGTFNESRVNLTIQ
GLRAVDGTGLYLCKVELMYPPPYFVGMGNGTQIYVIDP
pdb|5E5M|D
pdb|5E5M|D Chain D, CTLA-4 nanobody
MAQVQLVESGGGLAQPGGSLRLSCAASGSTISSVAVGWYRQTPGNQREWVATSSSTSSTATYADSVKGRFTISRDNAKNT
IYLQMNSLKPEDTAVYYCKTGLTNWGRGTQVTVSSGGLPETGGHHHHHH
pdb|5E5M|C
pdb|5E5M|C Chain C, Cytotoxic T-lymphocyte protein 4
IQVTQPSVVLASSHGVASFPCEYSPSHNTDEVRVTVLRQTNDQMTEVCATTFTEKNTVGFLDYPFCSGTFNESRVNLTIQ
GLRAVDGTGLYLCKVELMYPPPYFVGMGNGTQIYVIDP
pdb|5E5M|B
pdb|5E5M|B Chain B, CTLA-4 nanobody
MAQVQLVESGGGLAQPGGSLRLSCAASGSTISSVAVGWYRQTPGNQREWVATSSSTSSTATYADSVKGRFTISRDNAKNT
IYLQMNSLKPEDTAVYYCKTGLTNWGRGTQVTVSSGGLPETGGHHHHHH
pdb|5E5M|A
pdb|5E5M|A Chain A, Cytotoxic T-lymphocyte protein 4
IQVTQPSVVLASSHGVASFPCEYSPSHNTDEVRVTVLRQTNDQMTEVCATTFTEKNTVGFLDYPFCSGTFNESRVNLTIQ
GLRAVDGTGLYLCKVELMYPPPYFVGMGNGTQIYVIDP
pdb|5E03|A
pdb|5E03|A Chain A, CTLA-4 nanobody
MAQVQLVESGGGLAQPGGSLRLSCAASGSTISSVAVGWYRQTPGNQREWVATSSSTSSTATYADSVKGRFTISRDNAKNT
IYLQMNSLKPEDTAVYYCKTGLTNWGRGTQVTVSSGGLPETGGHHHHHH
XP_006153139.2
XP_006153139.2 T-cell-specific surface glycoprotein CD28 isoform X1 [Tupaia
chinensis]
MMFGLLLALHFFLSIQVTENKILVTQLPMLVANNNVNLCKYTYDLFSKEFRASLYKGVDSAMEVCCVSGNYSHQLQFH
SNTGFHCDGKLSNETVTFSLWNLYVNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKEKNNCSGPQLIEYSKPFWALTVA
SGILAFYGLLVTVLFAFYWMKNKNNRLLQSDYMNMTPRRPGPTRKHYQPYAPARDFAAAYS
XP_005442995.1
XP_005442995.1 T-cell-specific surface glycoprotein CD28 [Falco cherrug]
MLLGILVVLCFIPTADV TENKILVAQHPFLTVANKTATLVCNYTYNGTGKEFRASLHKGTNSAVEVCFISWNTTKISSNS
NKEFNCEGIHDKDKVIFNLWNMNANQTDIYFCKIEAMYPPPYVYNEKSNGTVIHVKETPIQTQEPQSEMSLWIMVAVAGV
LTFYSMLITTVFINHWWQSKSKNMYHQSDYMNMTPRHPYQKNKGYPYAPTRDYTAYRSWQP
XP_005237074.1
XP_005237074.1 T-cell-specific surface glycoprotein CD28 [Falco peregrinus]
MLLGILVVLCFIPTADV TENKILVAQHPFLTVANKTATLVCNYTYNGTGKEFRASLHKGTNSAVEVCFISWNTTKISSNS
NKEFNCEGIHDKDKVIFNLWNMNANQTDIYFCKIEAMYPPPYVYNEKSNGTVIHVKETPIQTQEPQSEMSLWIMVAVAGV
LTFYSMLITTVFINHWWQSKSKNMYHQSDYMNMTPRHPYQKNKGYPYAPTRDYTAYRSWQP
XP_012952396.1
XP_012952396.1 T-cell-specific surface glycoprotein CD28 [Anas platyrhynchos]
MLLGILVVLCFIPAADV TENKILVAQHPLLVANKTANLVCNYSYNGTGKEFRASLHKGTNSAVEVCFISWNKTKSSNS
NKEFNCGFTFYEDKVIFNLWNMNANQTDIYFCKIEAMYPPPYVYNEKSNGTVIHVKETPVQTQEPQSAISYWMVAVTGL
LAFYSILITAIFISYWQSKSKNRYHQSDYMNMTPRHPYQKNKGYPYAPTRDYTAYRSWQP
AZL38889.1

AZL38889.1 Sequence 87 from patent US 10144779

MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLCKKSYNLFSSREFRASLHKGLDSAVEVCVVYGNYSQQLQVYS
KTGFNCDGKLGNESVTFYLNLYVNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSPFPGPSKPFVWLVVVG
GVLACYSLLVTVAFIIFWVRSKRSRLLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYRS

AZL38880.1

AZL38880.1 Sequence 77 from patent US 10144779

MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCKAMHVAQPAVVLASSRGIAFVCEYASPGKATEVRVTVLRQADSQ
VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYLIGIGNGTQIYVIDPEPCPDS
DFLLWILAAVSSGLFFYSFLLTAVSLKMLKKRSPLTTGVYVKMPPTPECEKQFQPYFIPIN

AZK23407.1

AZK23407.1 Sequence 2 from patent US 10124023

MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLCKKSYNLFSSREFRASLHKGLDSAVEVCVVYGNYSQQLQVYS
KTGFNCDGKLGNESVTFYLNLYVNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSPFPGPSKPFVWLVVVG
GVLACYSLLVTVAFIIFWVRSKRSRLLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYRS

XP_026979293.1

XP_026979293.1 T-cell-specific surface glycoprotein CD28 [Lagenorhynchus obliquidens]

MCPERSKSVVVAADDESGCSGASPAHLTLGLLREEGRKPWPTVSTMIFSLLLALNFFPSIQVAENKILVNQSPMLVVNNN
EVNLSCKYTYNLFSSKEFRASLYKGVDSAVEVCAVNGNHSKSLQSTNKEFNCTVNLGNETVTFYLDLYVNQTDIYFCKIE
VLYPPPYIDNEKSNGTIIHVKEKHLCPAPRSPESSKPFWALVVVNGVLAFYSLLATVALSNCWMKSKNRNMLQSDYMNMT
PRRPGPTRKHYPYAPARDFAAYRS

XP_014929637.1

XP_014929637.1 T-cell-specific surface glycoprotein CD28 [Acinonyx jubatus]

MTETLRLWQVHLQLPSHFGLLGEGLPWPVSTMILRLLLALNFFPSIQVTENKILVKQLPRLVVYNNNEVNLCKYTHN
LFSKEFRASLYKGVDSAVEVCVVNGNYSHQPQFYSSTGFDGKLGNETVTFYLRNLFVNQTDIYFCKIEVMYPPPYIDN
EKSNGTIIHVKEKHLCPAQLSPESSKPFWALVVVGILGFYSLLATVALGACWMKTKRSRILQSDYMNMTPRRPGPTRRH
YQPYAPARDFAAYRS

RMC18477.1

RMC18477.1 hypothetical protein DUI87_04366 [Hirundo rustica rustica]

MLLGILVVLCFIPTADVNTENKILVAQHPLLVANQTATLVCNYTYNGTGKEFRASLHKGTDSSEVEVCFISWNTTKISSNS
NKEFNCGQNHDKDKVIFNIWMNANQTDIYFCKIEVMYPPPYVYNEKSNGTVIHVKETPTQIQEPQSAIPLWILASVIGI
LALYSMLITAVFINYWQKSKKNIYHQSDYMNMTARPPYQKNKGYPYAPTRDYTAYRSWQP

XP_026709069.1

XP_026709069.1 T-cell-specific surface glycoprotein CD28 [Athene cunicularia]

MLPGILVVLCFIPAADVTENKILVAQRPLLVANKTATLVCNYTYNGTGKEFRASLHKGTDSAVEVCFISWNMTKISSNS
NKEFNCGIHDKDKVIFNLWMNANQTDIYFCKIEAMYPYPPYVYNEKSNGTVIHVKETPIQTQEPQSAVPLWIMVAVTGV
LAFYSMLITAVFINYWQKSKKSMYHQSDYMNMTPRHPPYQKNKGYPYAPTRDYTAYRSWQP

RLW01096.1

RLW01096.1 hypothetical protein DV515_00008331 [Erythrura gouldiae]

MLLGILVVLFFIPTADVNTENKILVAQHPLLVANQTATLVCNYTYNGTGKEFRASLHKGTDSSEVEVCFISWNTTKISSNS
NKGFNCGQSNDDKDKVIFNLWMNMTNQTDIYFCKIEVMYPPPYVYNEKSNGTVIHVKETPIQIQEPQSAIPLWILATVTGI
LALYSMLITAVFINYWQKSKKHMVYHQSDYMNMTPRHPPYQKNKGYPYAPTRDYTAYRSWQP

NP_001277851.1

NP_001277851.1 programmed cell death protein 1 precursor [Bubalus bubalis]

MGTPRALWPLVWAVLQLGCWPGWLEASSRPWSALTFSAPARLVVPEGANATFTCSFSSKPERFVLNWRKSPSNQMDKLA
AFPEDRSQPSRDRFRVTPPNGQEFHMSIVAAQRNDSGVYFCGAIYLPRTQINESHSAELVVTEAVLEPTEPPSPQP
RPEGQMQLVIGVTSVLLGVLLLLPLIWLAAVFLRATRGGCARRSQDQPPKEGSPSPVAVTVDYGELDFQWREKTPEPA
APCVPEQTEYATIVFPGRRASADSPQGPWPLRTEDGHCSWPL

NP_001277791.1
NP_001277791.1 cytotoxic T-lymphocyte protein 4 precursor [Bubalus bubalis]
MACSGFQSHGTWRTSRTWPCTALFFLLFIPVFSKGMNVTQPPVVLASSRGVASFSEYESSGKADEVRTVLREAGSQVT
EVCAGTYMVEDELTFLLDDSTCIGTSRGNKVNLTIQGLRAMDTGLYVCKVELMYPPPYVVGIGNGTQIYVIDPEPCPDSDF
LLWILAAVSSGLFFYSFLITAVSLSKMLKKRSPLTTGVYVKMPPTPECEKQFQPYFIPIN

NP_001277846.1
NP_001277846.1 programmed cell death 1 ligand 1 precursor [Bubalus bubalis]
MRIYSVLTFMAYCCLLKAFTITVSKDLYVVEYGSNTLECRFPVDKQLNLLVLVYVWEMEDKKIIQFVNGKEDPNVQHSS
YHGRAQLLKDQLFLGKAALQITDVKLQDAGVYCCCLISYGGADYKRITLKVNPYRKIYHTISVDPVTSEHELTCQAEQYP
EADVITWSSDHQVLNGKTSITSSKKEEKLFNVTSTLRINTTADKIFYCTFRRLGHEENNTAELVIPEPYLDPKKRNHLV
TLGALFLFLHVTAVVFLKRDVRMMDVEKCGTRDMNSKQQNATQFEET

XP_005484198.1
XP_005484198.1 T-cell-specific surface glycoprotein CD28 [Zonotrichia albicollis]
MLLGILVVLFFIPTADV TENKILVAQHPLLVSNQTATLVCNYTYNGTGKEFRASLHKGTDSSVEVCFISWNVNIRSN
TKEFNCGDHDKDKVIFNLWNMNANQTDIYFCKIEVMYPPPYVYNEKSNGTVIHVKETPIQIQEPQSTIPLWILATVTGI
LALYSMLITAGFFNYWQKSKRLYHQSDYMNMTPRPPYKNKGYPYAPTRDYTAIRSWQP

AYI37471.1
AYI37471.1 Sequence 41 from patent US 10046047
MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVGNYSSQLQVYS
KTGFNCDGKLGNESVTFYLQNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSPFPGPSKPFWVLVVG
GVLACYSLLVTVAFIIFWVRSKRSRLLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYRS

AYI07650.1
AYI07650.1 Sequence 176 from patent US 10023626
MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCAMHVAQPAVVLASSRGVASFVCEYASPGKATEVRVTVLRQADSQ
VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYLGLIGNGTQIYVIDPEPCPDS
DFLLWILAAVSSGLFFYSFLLTAVSLSKMLKKRSPLTTGVYVKMPPTPECEKQFQPYFIPIN

AYI07649.1
AYI07649.1 Sequence 175 from patent US 10023626
MACLGFQRHKAQLNLATRTWPCTLLFFLLFIPVFCAMHVAQPAVVLASSRGVASFVCEYASPGKATEVRVTVLRQADSQ
VTEVCAATYMMGNELTFLDDSICTGTSSGNQVNLTIQGLRAMDTGLYICKVELMYPPPYLGLIGNGTQIYVIAEKKPSY
NRGLCENAPNRARM

AYI07607.1
AYI07607.1 Sequence 133 from patent US 10023626
MPCGLSALIMCPKGMVAVVVAVDDGDSQALAGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVC
VVGNYSSQLQVYSKTGFNCDGKLGNESVTFYLQNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSPFP
PGPSKPFWVLVVGVLACYSLLVTVAFIIFWVRSKRSRLLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYRS

AYI07604.1
AYI07604.1 Sequence 130 from patent US 10023626
MLRLLLALNLFPSIQVTGNKILVKQSPMLVAYDNAVNLSCKYSYNLFSREFRASLHKGLDSAVEVCVVGNYSSQLQVYS
KTGFNCDGKLGNESVTFYLQNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTIIHVKGKHLCPSPFPGPSKPFWVLVVG
GVLACYSLLVTVAFIIFWVRSKRSRLLHSDYMNMTPRRPGPTRKHYPYAPPRDFAAYRS

XP_026250393.1
XP_026250393.1 T-cell-specific surface glycoprotein CD28 [Urocyon parryii]
MIFFPSLENKILVKQSPRLEVYNNEVNLSCKYTYNLSKEFRASLYKGVDSAVEVCVVGNGFNHQLQFYSHGTGFNCDGKL
GNETVTFYLRNLVYNQTDIYFCKIEVMYPPPYLDNEKSNGTVIHVKENNCPGVSPSPKPFWTLVVLGVLGIYSLLS
TMLLCYLWTKRQRTRLLQSDYMNMTPRRPGPTRKHYPYAPARDFAAYRP

XP_025957658.1

```
XP_025957658.1 T-cell-specific surface glycoprotein CD28 [Dromaius
novaehollandiae]
MLLGILVALCFLPAAHATENKILVAQHPLLTVENKTATLVCNYTYNGTGKEFRASLHKGTDSAAEVCVFSWNMTKISSNS
NKEFNCKGIHDKDKVIFKLNMTANQTDIYFCKIEVMYPPYVYNEKSNGTVIHVTETPIQIQEPQSASSYWIMVAVTGV
LAFYSTLITAVFINYWQKSKEKMYHQSDYMNMTPRHPYQKNKGYPYAPTRDYTAYRSWQP
```

```
[19]: handle = Entrez.esearch(db="nucore", term= "CTLA-4", rettype = 'gb', retmode =
      ↪ 'xml')
      record = Entrez.read(handle)
      record["IdList"]
      record["Count"]
```

```
[19]: '3030'
```

```
[166]: # extract genbank name and seq
      CTLA4_id=record["IdList"]
      handle = Entrez.efetch(db="nucore", id=', '.join(CTLA4_id), rettype="gb",
      ↪ retmode='txt')
      out = open("/Users/zunqiuwang/Desktop/CTLA-4 gb.gb", 'w')
      out.write(handle.read())

      out1 = open("/Users/zunqiuwang/Desktop/CTLA-4 name+seq.txt", 'w')
      for gb_record in SeqIO.parse(open("/Users/zunqiuwang/Desktop/CTLA-4 gb.gb",
      ↪ 'r'), 'gb'):
          out1.write("Name %s, %i features, %s" % (gb_record.name, len(gb_record.
      ↪ features), gb_record.seq))
```

```
[6]: #esearch CLTA-4 journals
      handle = Entrez.esearch(db="pubmed", term='CTLA-4', retmax=1000)
      result = Entrez.read(handle)
      clta4journalid = result['IdList']
```

```
[13]: #efetch CLTA-4 journals
      handle = Entrez.efetch(db="pubmed", id=', '.join(clta4journalid),
      ↪ rettype='Abstract', retmode='txt')
      out1 = open("/Users/zunqiuwang/Desktop/CTLA-4 journals.txt", 'w')
      out1.write(handle.read())
```

```
[13]: 2645264
```

```
[ ]: #afteresearch, efetch and write to file
      file = "/Users/zunqiuwang/Desktop/CTLA-4 gb.txt"
      with open (file, 'w') as f:
          f.write(handle.read())
          f.close()
```

```
[26]: CTLA4_record = SeqIO.parse("/Users/zunqiuwang/Desktop/CTLA-4 gb.gbk", 'gb')

all_species = [seq_record.annotations["source"] for seq_record in SeqIO.parse("/
↳Users/zunqiuwang/Desktop/CTLA-4 gb.gbk", "gb")]
print(all_species)
```

```
['Homo sapiens (human)', 'Homo sapiens (human)', 'Homo sapiens (human)', 'Homo
sapiens (human)', 'Homo sapiens (human)', 'Homo sapiens (human)', 'Homo sapiens
(human)', 'Homo sapiens (human)', 'Homo sapiens (human)', 'Homo sapiens
(human)', 'Homo sapiens (human)', 'Homo sapiens (human)', 'Homo sapiens
(human)', 'Homo sapiens (human)', 'Homo sapiens (human)', 'Homo sapiens
(human)', 'Homo sapiens (human)', 'Mus musculus (house mouse)', 'Homo sapiens
(human)', 'Homo sapiens (human)']
```

```
[20]: CTLA4_id=record["IdList"]
handle = Entrez.efetch(db="nucleotide", id=', '.join(CTLA4_id), rettype="gb",
↳retmode='text')
out = open("/Users/zunqiuwang/Desktop/CTLA-4 gb.txt", 'w')
out.write(handle.read())
```

[20]: 332519

```
[102]: #list record
list_CTLA4_record = list(SeqIO.parse("/Users/zunqiuwang/Desktop/CTLA-4 gb.txt",
↳'gb'))
print(list_CTLA4_record)
```

```
[SeqRecord(seq=Seq('GTGAGTCACCAAGGAAGGCAGCGGCAGCTCCACTCAGCCAGTACCCAGATACGC...CCA
'), id='NM_001253850.2', name='NM_001253850', description='Homo sapiens V-set
domain containing T cell activation inhibitor 1 (VTCN1), transcript variant 3,
mRNA', dbxrefs=[]), SeqRecord(seq=Seq('CTGGTAATCTGTGGCGTAACAAGACCTCCAGGTGATTCTCT
GTATTAGCAGCCG...CCA'), id='NM_001253849.2', name='NM_001253849',
description='Homo sapiens V-set domain containing T cell activation inhibitor 1
(VTCN1), transcript variant 2, mRNA', dbxrefs=[]), SeqRecord(seq=Seq('GTGAGTCACC
AAGGAAGGCAGCGGCAGCTCCACTCAGCCAGTACCCAGATACGC...CCA'), id='NR_045604.2',
name='NR_045604', description='Homo sapiens V-set domain containing T cell
activation inhibitor 1 (VTCN1), transcript variant 5, non-coding RNA',
dbxrefs=[]), SeqRecord(seq=Seq('GTGAGTCACCAAGGAAGGCAGCGGCAGCTCCACTCAGCCAGTACCCAG
ATACGC...CCA'), id='NR_045603.2', name='NR_045603', description='Homo sapiens
V-set domain containing T cell activation inhibitor 1 (VTCN1), transcript
variant 4, non-coding RNA', dbxrefs=[]), SeqRecord(seq=Seq('GCTGAAAATGGTTTCCTAGG
ACTTTGCAAACGGATCTGCCTAAGTGTGGTGCA...AAA'), id='NM_001005366.2',
name='NM_001005366', description='Homo sapiens lysine demethylase 2B (KDM2B),
transcript variant 2, mRNA', dbxrefs=[]), SeqRecord(seq=Seq('GTACGTGTGTGTGTCCACA
TCTTTGAGTGCCGGGAGTTTAAAAGTTAGGCAGTC...AAA'), id='NM_032590.5', name='NM_032590',
description='Homo sapiens lysine demethylase 2B (KDM2B), transcript variant 1,
mRNA', dbxrefs=[]), SeqRecord(seq=Seq('GTGAGTCACCAAGGAAGGCAGCGGCAGCTCCACTCAGCCAG
```

TACCCAGATACGC...CCA'), id='NM_024626.4', name='NM_024626', description='Homo sapiens V-set domain containing T cell activation inhibitor 1 (VTCN1), transcript variant 1, mRNA', dbxrefs=[]), SeqRecord(seq=Seq('AGTTATTTCACAGATGCCA CTGGGGTAGGTAAACTGACCCAACCTCTGCAGCACT...CAA'), id='NM_001085357.2', name='NM_001085357', description='Homo sapiens B and T lymphocyte associated (BTLA), transcript variant 2, mRNA', dbxrefs=[]), SeqRecord(seq=Seq('AGTTATTTCAC AGATGCCACTGGGGTAGGTAAACTGACCCAACCTCTGCAGCACT...CAA'), id='NM_181780.4', name='NM_181780', description='Homo sapiens B and T lymphocyte associated (BTLA), transcript variant 1, mRNA', dbxrefs=[]), SeqRecord(seq=Seq('AGTCATTGCCG AGGAAGGCTTGCACAGGGTGAAAGCTTTGCTTCTCTGCTGCTG...TCA'), id='NM_001206925.2', name='NM_001206925', description='Homo sapiens CD86 molecule (CD86), transcript variant 5, mRNA', dbxrefs=[]), SeqRecord(seq=Seq('CTGCGCGCTCGGGCTGGCTCGGCGGGCTGCG GCGGGCGGGCAGGCGGGCAGGCCG...AAA'), id='NM_001287046.2', name='NM_001287046', description='Homo sapiens SH3 domain containing GRB2 like, endophilin B2 (SH3GLB2), transcript variant 3, mRNA', dbxrefs=[]), SeqRecord(seq=Seq('ACACTTCG GGTTCCTCGGGAGGAGGGCTGGAACCCTAGCCCATCGTCAGGAC...GAA'), id='NM_001243078.2', name='NM_001243078', description='Homo sapiens CD28 molecule (CD28), transcript variant 3, mRNA', dbxrefs=[]), SeqRecord(seq=Seq('AGTCATTGCCGAGGAAGGCTTGCACAGGGT GAAAGCTTTGCTTCTCTGCTGCTG...TCA'), id='NM_001206924.2', name='NM_001206924', description='Homo sapiens CD86 molecule (CD86), transcript variant 4, mRNA', dbxrefs=[]), SeqRecord(seq=Seq('AGAAGTTATTTGGAACCAAGCAAGAGCACTGTCCCTGGCTGTGGTGTT GTTTCT...TCA'), id='NM_176892.2', name='NM_176892', description='Homo sapiens CD86 molecule (CD86), transcript variant 3, mRNA', dbxrefs=[]), SeqRecord(seq=Seq('AGAAGTTATTTGGAACCAAGCAAGAGCACTGTCCCTGGCTGTGGTGTTGTTTCT...TCA'), id='NM_006889.5', name='NM_006889', description='Homo sapiens CD86 molecule (CD86), transcript variant 2, mRNA', dbxrefs=[]), SeqRecord(seq=Seq('CTGCGCGCTCG GGCTGGCTCGGCGCTGCGGCGGGCGGGCAGGCGGGCAGGCCG...AAA'), id='NM_001287045.2', name='NM_001287045', description='Homo sapiens SH3 domain containing GRB2 like, endophilin B2 (SH3GLB2), transcript variant 1, mRNA', dbxrefs=[]), SeqRecord(seq=Seq('CTGCGCGCTCGGGCTGGCTCGGCGGCTGCGGCGGGCGGGCAGGCGGGCAGGCCG...AAA'), id='NM_020145.4', name='NM_020145', description='Homo sapiens SH3 domain containing GRB2 like, endophilin B2 (SH3GLB2), transcript variant 2, mRNA', dbxrefs=[]), SeqRecord(seq=Seq('AGCGGGTCTCCTGCCGCCAAAGCCTCAAGAACCCAGATTTCAGCGCC CCAAGC...TTC'), id='NM_015790.3', name='NM_015790', description='Mus musculus icos ligand (Icosl), mRNA', dbxrefs=[]), SeqRecord(seq=Seq('GTGGGCTCTTGAAACCCGAG CATGGCACAGCACGGGGCGATGGGCGCGTTTCGG...TGA'), id='NM_148902.2', name='NM_148902', description='Homo sapiens TNF receptor superfamily member 18 (TNFRSF18), transcript variant 3, mRNA', dbxrefs=[]), SeqRecord(seq=Seq('ACACTTCGGGTTCCTCGGG GAGGAGGGGCTGGAACCCTAGCCCATCGTCAGGAC...GAA'), id='NM_001243077.2', name='NM_001243077', description='Homo sapiens CD28 molecule (CD28), transcript variant 2, mRNA', dbxrefs=[])]

```
[128]: #parse journals from seqIO record
import re
output = open("/Users/zunqiuwang/Desktop/CTLA-4 journal list with seq.txt", 'w')
seq_records = SeqIO.parse("/Users/zunqiuwang/Desktop/CTLA-4 gb.txt", 'gb')
seq = seq_record.seq
```

```

for seq_record in seq_records:
    for i in range(len(seq_record.annotations['references'])):
        title = seq_record.annotations['references'][i].title
        journal = seq_record.annotations['references'][i].journal
        seq = seq_record.seq
        print(title + '\n' + journal + '\n' + str(seq) + '\n')
        output.write(title + '\n' + journal + '\n' + str(seq) + '\n')

```

[Knockdown of B7-H4/VTCN1 promotes apoptosis and autophagy of Huh7 cells by inhibiting phosphorylation of JNK]

Xi Bao Yu Fen Zi Mian Yi Xue Za Zhi 36 (7), 603-608 (2020)

GTGAGTCACCAAGGAAGGCAGCGGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
GTATTTTCAGCCTTCAGCATGCCGGAAGTGAATGTGGACTATAATGCCAGCTCAGAGACCTTGCGGTGTGAGGCTCCCCGA
TGGTTCCCCCAGCCACAGTGGTCTGGGCATCCCAAGTTGACCAGGGAGCCAACTTCTCGGAAGTCTCCAATACCAGCTT
TGAGCTGAACTCTGAGAATGTGACCATGAAGTTGTGTCTGTGCTCTACAATGTTACGATCAACAACACATACTCCTGTA
TGATTGAAAATGACATTGCCAAAGCAACAGGGGATATCAAAGTGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAG
CTGCTAAACTCAAAGGCTTCTCTGTGTGTCTCTTCTTTCTTTGCCATCAGCTGGGCACTTCTGCCTCTCAGCCCTTACCT
GATGCTAAAATAATGTGCCTCGGCCACAAAAAGCATGCAAAGTCATTGTTACAACAGGGATCTACAGAACTATTTACC
ACCAGATATGACCTAGTTTTATATTTCTGGGAGGAAATGAATTCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAG
AAACAAAAAGAAGCCAAAAGCAGAAGGCTCCAATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAA
AATAATTCATGTGAACTAGACAAGTGTGTTAAGAGTGATAAGTAAAATGCACGTGGAGACAAGTGCATCCCCAGATCTCA
GGGACCTCCCCCTGCCTGTACCTGGGGAGTGAGAGGACAGGATAGTGCATGTTCTTTGTCTCTGAATTTTTAGTTATAT
GTGCTGTAATGTTGCTCTGAGGAAGCCCCCTGGAAAGTCTATCCCAACATATCCACATCTTATATTCCACAAATTAAGCTG
TAGTATGTACCCTAAGACGCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAAATG
ATTCATTTTTATGATGCTTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCA
TAATTTTAGCATAAACAGAGCAGTCGGCGACACCGATTATATAAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGC
GGGTTTTATTTCTCAGATGATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTTTCACCTTGTCTATATGGCATTATGTCAT
CACAAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGACAGCTAAGACCTCAGTTTCAATAGCATCTAGAGCAGTGGGA
CTCAGCTGGGGTGATTTGCCCCCATCTCCGGGGAATGTCTGAAGACAATTTTGGTTACCTCAATGAGGGAGTGGAGG
AGGATACAGTGCTACTACCAACTAGTGGATAGAGGCCAGGGATGCTGCTCAACCTCCTACCATGTACAGGACGTCTCCCC
ATTACAACCTACCAATCCGAAGTGTCAACTGTGTCAGGGCTAAGAAACCCTGGTTTTGAGTAGAAAAGGGCCTGGAAAGA
GGGGAGCCAACAAATCTGTCTGCTTCCTCACATTAGTCATTGGCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGC
ACAGAGAGCCGAACTCTATCGGGCACCAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTG
ATGGGATTATCTTCAGCTTGTTGAGCTTCTAAGTTTCTTTCCCTTCATTCTACCTTGCAAGCCAAGTTCTGTAAGAGAAA
TGCCTGAGTTCTAGCTCAGGTTTTCTTACTCTGAATTTAGATCTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAA
CAAACATATACCTTCCATGAAGCACACAGACTTTTGAAAGCAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAAT
GAAGCTTTGAAGGAAAAGAATACTTTGTTTCCAGCCCCCTTCCCACTCTTCATGTGTTAACCCTGCCTTCCTGGACC
TTGGAGCCACGGTGACTGTATTACATGTTGTTATAGAAAAGTATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAAT
ATACATTTCTACACCA

B7-H4 is a potential prognostic biomarker of prostate cancer

Exp Mol Pathol 114, 104406 (2020)

GTGAGTCACCAAGGAAGGCAGCGGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
GTATTTTCAGCCTTCAGCATGCCGGAAGTGAATGTGGACTATAATGCCAGCTCAGAGACCTTGCGGTGTGAGGCTCCCCGA
TGGTTCCCCCAGCCACAGTGGTCTGGGCATCCCAAGTTGACCAGGGAGCCAACTTCTCGGAAGTCTCCAATACCAGCTT

TGAGCTGAACTCTGAGAATGTGACCATGAAGGTTGTGTCTGTGCTCTACAATGTTACGATCAACAACACATACTCCTGTA
 TGATTGAAAATGACATTGCCAAAGCAACAGGGGATATCAAAGTGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAG
 CTGCTAAACTCAAAGGCTTCTCTGTGTGTCTCTCTTTCTTTGCCATCAGCTGGGCACTTCTGCCTCTCAGCCCTTACCT
 GATGCTAAAATAATGTGCCTCGGCCACAAAAAGCATGCAAAGTCATTGTTACAACAGGGATCTACAGAACTATTTACC
 ACCAGATATGACCTAGTTTTATATTTCTGGGAGGAAATGAATTCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAG
 AAACAAAAAGAAGCCAAAAGCAGAAGGCTCCAATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAA
 AATAATTCATGTGAACTAGACAAGTGTGTTAAGAGTGATAAGTAAAATGCACGTGGAGACAAGTGCATCCCCAGATCTCA
 GGGACCTCCCCCTGCCTGTACCTGGGGAGTGAGAGGACAGGATAGTGCATGTTCTTTGTCTCTGAATTTTTAGTTATAT
 GTGCTGTAATGTTGCTCTGAGGAAGCCCCCTGGAAAGTCTATCCCAACATATCCACATCTTATATTCCACAAATTAAGCTG
 TAGTATGTACCCTAAGACGCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATG
 ATTCACTTTTTATGATGCTTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCA
 TAATTTTAGCATAAACAGAGCAGTCGGCGACACCGATTTTATAAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGC
 GGGTTTTATTTCTCAGATGATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTTTCACCTTGTCTATATGGCATTATGTCAT
 CACAAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGGACAGCTAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGA
 CTCAGCTGGGGTGATTTGCCCCCATCTCCGGGGAATGTCTGAAGACAATTTTGGTTACCTCAATGAGGGAGTGGAGG
 AGGATACAGTGCTACTACCAACTAGTGGATAGAGGCCAGGGATGCTGCTCAACCTCCTACCATGTACAGGACGTCTCCCC
 ATTACAACCTACCCAATCCGAAGTGTCAACTGTGTCAGGGCTAAGAAACCCTGGTTTTGAGTAGAAAAGGGCCTGGAAAGA
 GGGGAGCCAACAAATCTGTCTGCTTCTCACATTAGTCATTGGCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGC
 ACAGAGAGCCGAACTCTATCGGGCACCAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTG
 ATGGGATTATCTTCAGCTTGTTGAGCTTCTAAGTTTCTTTCCCTTCACTTACCTGCAAGCCAAGTTCTGTAAGAGAAA
 TGCCTGAGTTCTAGCTCAGGTTTTCTTACTCTGAATTTAGATCTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAA
 CAAACATATACCTTCCATGAAGCACACACAGACTTTTGAAAGCAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAAT
 GAAGCTTTGAAGGAAAAGAATACTTTGTTTCCAGCCCCCTTCCCACTCTTCATGTGTTAACCCTGCCTTCTGGACC
 TTGGAGCCACGGTGAAGTATTACATGTTGTTATAGAAAAGTGAATTTAGAGTTCTGATCGTTCAAGAGAATGATTAAAT
 ATACATTTCTACACCA

B7H4 expression in tumor cells impairs CD8 T cell responses and tumor immunity
 Cancer Immunol Immunother 69 (2), 163-174 (2020)

GTGAGTCACCAAGGAAGGCAGCGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
 CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
 GTATTTTCAGCCTTCAGCATGCCGGAAGTGAATGTGGAATAATGCCAGCTCAGAGACCTTGCGGTGTGAGGCTCCCCGA
 TGGTTCCCCCAGCCACAGTGGTCTGGGCATCCCAAGTTGACCAGGGAGCCAACCTTCTCGGAAGTCTCCAATACCAGCTT
 TGAGCTGAACTCTGAGAATGTGACCATGAAGGTTGTGTCTGTGCTCTACAATGTTACGATCAACAACACATACTCCTGTA
 TGATTGAAAATGACATTGCCAAAGCAACAGGGGATATCAAAGTGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAG
 CTGCTAAACTCAAAGGCTTCTCTGTGTGTCTCTCTTTCTTTGCCATCAGCTGGGCACTTCTGCCTCTCAGCCCTTACCT
 GATGCTAAAATAATGTGCCTCGGCCACAAAAAGCATGCAAAGTCATTGTTACAACAGGGATCTACAGAACTATTTACC
 ACCAGATATGACCTAGTTTTATATTTCTGGGAGGAAATGAATTCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAG
 AAACAAAAAGAAGCCAAAAGCAGAAGGCTCCAATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAA
 AATAATTCATGTGAACTAGACAAGTGTGTTAAGAGTGATAAGTAAAATGCACGTGGAGACAAGTGCATCCCCAGATCTCA
 GGGACCTCCCCCTGCCTGTACCTGGGGAGTGAGAGGACAGGATAGTGCATGTTCTTTGTCTCTGAATTTTTAGTTATAT
 GTGCTGTAATGTTGCTCTGAGGAAGCCCCCTGGAAAGTCTATCCCAACATATCCACATCTTATATTCCACAAATTAAGCTG
 TAGTATGTACCCTAAGACGCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATG
 ATTCACTTTTTATGATGCTTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCA
 TAATTTTAGCATAAACAGAGCAGTCGGCGACACCGATTTTATAAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGC
 GGGTTTTATTTCTCAGATGATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTTTCACCTTGTCTATATGGCATTATGTCAT
 CACAAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGGACAGCTAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGA
 CTCAGCTGGGGTGATTTGCCCCCATCTCCGGGGAATGTCTGAAGACAATTTTGGTTACCTCAATGAGGGAGTGGAGG
 AGGATACAGTGCTACTACCAACTAGTGGATAGAGGCCAGGGATGCTGCTCAACCTCCTACCATGTACAGGACGTCTCCCC

ATTACAACCTACCCAATCCGAAGTGTCAACTGTGTCAGGGCTAAGAAACCCTGGTTTTGAGTAGAAAAGGGCCTGGAAAGA
 GGGGAGCCAACAAATCTGTCTGCTTCCCTCACATTAGTCATTGGCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGC
 ACAGAGAGCCAGAACTCTATCGGGCACCAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTG
 ATGGGATTATCTTCAGCTTGTTGAGCTTCTAAGTTTCTTTCCCTTCATTCTACCCTGCAAGCCAAGTTCTGTAAGAGAAA
 TGCCTGAGTTCTAGCTCAGGTTTTCTTACTCTGAATTTAGATCTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAA
 CAAACATATACCTTCCATGAAGCACACACAGACTTTTGAAAGCAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAAT
 GAAGCTTTGAAGGAAAAGAATACTTTGTTTCCAGCCCCCTTCCCACACTCTTCATGTGTTAACCCTGCCTTCCTGGACC
 TTGGAGCCACGGTGACTGTATTACATGTTGTTATAGAAAAGTATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAAT
 ATACATTTCTACACCA

B7-H4, a promising target for immunotherapy
 Cell Immunol 347, 104008 (2020)

GTGAGTCACCAAGGAAGGCAGCGGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
 CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
 GTATTTTCAGCCTTCAGCATGCCGGAAGTGAATGTGGACTATAATGCCAGCTCAGAGACCTTGCGGTGTGAGGCTCCCCGA
 TGGTTCCCCCAGCCACAGTGGTCTGGGCATCCCAAGTTGACCAGGGAGCCAACCTTCTCGGAAGTCTCCAATACCAGCTT
 TGAGCTGAACCTCTGAGAATGTGACCATGAAGTTGTGTCTGTGCTCTACAATGTTACGATCAACAACACATACTCCTGTA
 TGATTGAAAATGACATTGCCAAAGCAACAGGGGATATCAAAGTGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAG
 CTGCTAAACTCAAAGGCTTCTCTGTGTGTCTCTTCTTTCTTGGCATCAGCTGGGCACTTCTGCCTCTCAGCCCTTACCT
 GATGCTAAAATAATGTGCCTCGGCCACAAAAAGCATGCAAAGTCATTGTTACAACAGGGATCTACAGAACTATTTTACC
 ACCAGATATGACCTAGTTTTATATTTCTGGGAGGAAATGAATTCATATCTAGAAGTCTGGAGTGAGCAAAACAAGAGCAAG
 AAACAAAAAGAAGCCAAAAGCAGAAGGCTCCAATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAA
 AATAATTCATGTGAAGTAGACAAGTGTGTTAAGAGTGATAAGTAAAATGCACGTGGAGACAAGTGCATCCCCAGATCTCA
 GGGACCTCCCCCTGCCTGTACCTGGGGAGTGAGAGGACAGGATAGTGCATGTTCTTTGTCTCTGAATTTTTAGTTATAT
 GTGCTGTAATGTTGCTCTGAGGAAGCCCCCTGGAAGTCTATCCCAACATATCCACATCTTATATTCCACAAATTAAGCTG
 TAGTATGTACCCTAAGACGCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATG
 ATTCATTTTTATGATGCTTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCA
 TAATTTTAGCATAAACAGAGCAGTCGGCGACACCGATTTTATAAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGC
 GGGTTTTATTTCTCAGATGATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTTTCACCTTGTCTATATGGCATTATGTCAT
 CACAAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGGACAGCTAAGACCTCAGTTTCAATAGCATCTAGAGCAGTGGGA
 CTCAGCTGGGGTGATTTGCCCCCCTCTCCGGGGAATGTCTGAAGACAATTTTGGTTACCTCAATGAGGGAGTGGAGG
 AGGATACAGTGCTACTACCAACTAGTGGATAGAGGCCAGGGATGCTGCTCAACCTCCTACCATGTACAGGACGTCTCCCC
 ATTACAACCTACCCAATCCGAAGTGTCAACTGTGTCAGGGCTAAGAAACCCTGGTTTTGAGTAGAAAAGGGCCTGGAAAGA
 GGGGAGCCAACAAATCTGTCTGCTTCCCTCACATTAGTCATTGGCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGC
 ACAGAGAGCCAGAACTCTATCGGGCACCAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTG
 ATGGGATTATCTTCAGCTTGTTGAGCTTCTAAGTTTCTTTCCCTTCATTCTACCCTGCAAGCCAAGTTCTGTAAGAGAAA
 TGCCTGAGTTCTAGCTCAGGTTTTCTTACTCTGAATTTAGATCTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAA
 CAAACATATACCTTCCATGAAGCACACACAGACTTTTGAAAGCAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAAT
 GAAGCTTTGAAGGAAAAGAATACTTTGTTTCCAGCCCCCTTCCCACACTCTTCATGTGTTAACCCTGCCTTCCTGGACC
 TTGGAGCCACGGTGACTGTATTACATGTTGTTATAGAAAAGTATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAAT
 ATACATTTCTACACCA

Expression of co-inhibitory molecules B7-H4 and B7-H1 in Epstein-Barr virus
 positive diffuse large B-cell lymphoma and their roles in tumor invasion
 Pathol Res Pract 215 (12), 152684 (2019)

GTGAGTCACCAAGGAAGGCAGCGGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
 CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
 GTATTTTCAGCCTTCAGCATGCCGGAAGTGAATGTGGACTATAATGCCAGCTCAGAGACCTTGCGGTGTGAGGCTCCCCGA

TGGTTCCCCCAGCCACAGTGGTCTGGGCATCCCAAGTTGACCAGGGAGCCAACTTCTCGGAAGTCTCCAATACCAGCTT
 TGAGCTGAACTCTGAGAATGTGACCATGAAGTTGTGTCTGTGCTCTACAATGTTACGATCAACAACACATACTCCTGTA
 TGATTGAAAATGACATTGCCAAAGCAACAGGGGATATCAAAGTGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAG
 CTGCTAAACTCAAAGGCTTCTCTGTGTGTCTCTTCTTTCTTTGCCATCAGCTGGGCACTTCTGCCTCTCAGCCCTTACCT
 GATGCTAAAATAATGTGCCTCGGCCACAAAAAGCATGCAAAGTCATTGTTACAACAGGGATCTACAGAACTATTTTACC
 ACCAGATATGACCTAGTTTTATATTTCTGGGAGGAAATGAATTCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAG
 AAACAAAAAGAAGCCAAAAGCAGAAGGCTCCAATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAA
 AATAATTCATGTGAACTAGACAAGTGTGTTAAGAGTGATAAGTAAAATGCACGTGGAGACAAGTGCATCCCCAGATCTCA
 GGGACCTCCCCCTGCCTGTACCTGGGGAGTGAGAGGACAGGATAGTGCATGTTCTTTGTCTCTGAATTTTTAGTTATAT
 GTGCTGTAATGTTGCTCTGAGGAAGCCCCCTGAAAGTCTATCCCAACATATCCACATCTTATATTCCACAAATTAAGCTG
 TAGTATGTACCCTAAGACGCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATG
 ATTCACTTTTTATGATGCTTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCA
 TAATTTTAGCATAAACAGAGCAGTCGGCGACACCGATTATATAAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGC
 GGGTTTATTTCTCAGATGATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTTTACCTTGTCTATATGGCATTATGTCAT
 CACAAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGACAGCTAAGACCTCAGTTTCAATAGCATCTAGAGCAGTGGGA
 CTCAGCTGGGGTGATTTGCCCCCATCTCCGGGGAATGTCTGAAGACAATTTTGGTTACCTCAATGAGGGAGTGGAGG
 AGGATACAGTGCTACTACCAACTAGTGGATAGAGGCCAGGGATGCTGCTCAACCTCCTACCATGTACAGGACGTCTCCCC
 ATTACAACCTACCAATCCGAAGTGTCAACTGTGTCAGGGCTAAGAAACCCTGGTTTTGAGTAGAAAAGGGCCTGGAAAGA
 GGGGAGCCAAACAAATCTGTCTGCTTCCTCACATTAGTCATTGGCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGC
 ACAGAGAGCCAGAACTCTATCGGGCACCAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTG
 ATGGGATTATCTTCAGCTTGTTGAGCTTCTAAGTTTCTTTCCCTTCACTTACCTGCAAGCCAAGTTCTGTAAGAGAAA
 TGCCTGAGTCTAGCTCAGGTTTTCTTACTCTGAATTTAGATCTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAA
 CAAACATATACCTTCCATGAAGCACACAGACTTTTGAAAGCAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAAT
 GAAGCTTTGAAGGAAAAGAATACTTTGTTTCCAGCCCCCTTCCCACTCTTCATGTGTTAACCCTGCCTTCCTGGACC
 TTGGAGCCACGGTGACTGTATTACATGTTGTTATAGAAAACCTGATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAAT
 ATACATTTCTACACCA

The secreted protein discovery initiative (SPDI), a large-scale effort to
 identify novel human secreted and transmembrane proteins: a bioinformatics
 assessment

Genome Res 13 (10), 2265-2270 (2003)

GTGAGTCACCAAGGAAGGCAGCGGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
 CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
 GTATTTTCAGCCTTCAGCATGCCGGAAGTGAATGTGGAATAATGCCAGCTCAGAGACCTTGCGGTGTGAGGCTCCCCGA
 TGGTTCCCCCAGCCACAGTGGTCTGGGCATCCCAAGTTGACCAGGGAGCCAACTTCTCGGAAGTCTCCAATACCAGCTT
 TGAGCTGAACTCTGAGAATGTGACCATGAAGTTGTGTCTGTGCTCTACAATGTTACGATCAACAACACATACTCCTGTA
 TGATTGAAAATGACATTGCCAAAGCAACAGGGGATATCAAAGTGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAG
 CTGCTAAACTCAAAGGCTTCTCTGTGTGTCTCTTCTTTCTTTGCCATCAGCTGGGCACTTCTGCCTCTCAGCCCTTACCT
 GATGCTAAAATAATGTGCCTCGGCCACAAAAAGCATGCAAAGTCATTGTTACAACAGGGATCTACAGAACTATTTTACC
 ACCAGATATGACCTAGTTTTATATTTCTGGGAGGAAATGAATTCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAG
 AAACAAAAAGAAGCCAAAAGCAGAAGGCTCCAATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAA
 AATAATTCATGTGAACTAGACAAGTGTGTTAAGAGTGATAAGTAAAATGCACGTGGAGACAAGTGCATCCCCAGATCTCA
 GGGACCTCCCCCTGCCTGTACCTGGGGAGTGAGAGGACAGGATAGTGCATGTTCTTTGTCTCTGAATTTTTAGTTATAT
 GTGCTGTAATGTTGCTCTGAGGAAGCCCCCTGAAAGTCTATCCCAACATATCCACATCTTATATTCCACAAATTAAGCTG
 TAGTATGTACCCTAAGACGCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATG
 ATTCACTTTTTATGATGCTTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCA
 TAATTTTAGCATAAACAGAGCAGTCGGCGACACCGATTATATAAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGC
 GGGTTTATTTCTCAGATGATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTTTACCTTGTCTATATGGCATTATGTCAT

CACAAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGAGACAGCTAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGA
CTCAGCTGGGGTGATTTGCGCCCCCATCTCCGGGGAATGTCTGAAGACAATTTTGGTTACCTCAATGAGGGAGTGGAGG
AGGATACAGTGCTACTACCAACTAGTGGATAGAGGCCAGGGATGCTGCTCAACCTCCTACCATGTACAGGACGTCTCCCC
ATTACAACCTACCAATCCGAAGTGTCAACTGTGTCAGGGCTAAGAAACCCTGGTTTTGAGTAGAAAAGGGCCTGGAAAGA
GGGGAGCCAACAAATCTGTCTGCTTCCTCACATTAGTCATTGGCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGC
ACAGAGAGCCAGAAGCTCTATCGGGCACCAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTG
ATGGGATTATCTTCAGCTTGTTGAGCTTCTAAGTTTCTTTCCCTTCATTCTACCCTGCAAGCCAAGTTCTGTAAGAGAAA
TGCCTGAGTTCTAGCTCAGGTTTTCTTACTCTGAATTTAGATCTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAA
CAAACATATACCTTCCATGAAGCACACACAGACTTTTGAAAGCAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAAT
GAAGCTTTGAAGGAAAAGAATACTTTGTTTCCAGCCCCCTTCCCACACTCTTCATGTGTTAACCCTGCCTTCCTGGACC
TTGGAGCCACGGTGACTGTATTACATGTTGTTATAGAAAAGTGAATTTAGAGTTCTGATCGTTCAAGAGAATGATTAAT
ATACATTTCTACACCA

B7x: a widely expressed B7 family member that inhibits T cell activation
Proc Natl Acad Sci U S A 100 (18), 10388-10392 (2003)

GTGAGTCACCAAGGAAGGCAGCGGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
GTATTTTCAGCCTTCAGCATGCCGGAAGTGAATGTGGACTATAATGCCAGCTCAGAGACCTTGCGGTGTGAGGCTCCCCGA
TGTTTCCCCAGCCCACAGTGGTCTGGGCATCCCAAGTTGACCAGGGAGCCAATTCTCGGAAGTCTCCAATACCAGCTT
TGAGCTGAAGTCTGAGAATGTGACCATGAAGTTGTGTCTGTGCTCTACAATGTTACGATCAACAACACATACTCCTGTA
TGATTGAAAATGACATTGCCAAAGCAACAGGGGATATCAAAGTGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAG
CTGCTAAACTCAAAGGCTTCTCTGTGTGTCTCTCTTTCTTTGCCATCAGCTGGGCACTTCTGCCTCTCAGCCCTTACCT
GATGCTAAAATAATGTGCCTCGGCCACAAAAAGCATGCAAAGTCATTGTTACAACAGGGATCTACAGAAGTATTTTACC
ACCAGATATGACCTAGTTTTATATTTCTGGGAGGAAATGAATTCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAG
AAACAAAAAGAAGCCAAAAGCAGAAGGCTCCAATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAA
AATAATTCATGTGAAGTAGACAAGTGTGTTAAGAGTGATAAGTAAAATGCACGTGGAGACAAGTGCATCCCCAGATCTCA
GGGACCTCCCCCTGCCTGTACCTGGGGAGTGAGAGGACAGGATAGTGCATGTTCTTTGTCTCTGAATTTTTAGTTATAT
GTGCTGTAATGTTGCTCTGAGGAAGCCCCCTGGAAAGTCTATCCCAACATATCCACATCTTATATTCCACAAATTAAGCTG
TAGTATGTACCCTAAGACGCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATG
ATTCATTTTTATGATGCTTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCA
TAATTTTAGCATAAACAGAGCAGTCGGCGACACCGATTTTATAAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGC
GGGTTTTATTTCTCAGATGATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTTTTACCTTGTCTATATGGCATTATGTCAT
CACAAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGAGACAGCTAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGA
CTCAGCTGGGGTGATTTGCGCCCCCATCTCCGGGGAATGTCTGAAGACAATTTTGGTTACCTCAATGAGGGAGTGGAGG
AGGATACAGTGCTACTACCAACTAGTGGATAGAGGCCAGGGATGCTGCTCAACCTCCTACCATGTACAGGACGTCTCCCC
ATTACAACCTACCAATCCGAAGTGTCAACTGTGTCAGGGCTAAGAAACCCTGGTTTTGAGTAGAAAAGGGCCTGGAAAGA
GGGGAGCCAACAAATCTGTCTGCTTCCTCACATTAGTCATTGGCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGC
ACAGAGAGCCAGAAGCTCTATCGGGCACCAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTG
ATGGGATTATCTTCAGCTTGTTGAGCTTCTAAGTTTCTTTCCCTTCATTCTACCCTGCAAGCCAAGTTCTGTAAGAGAAA
TGCCTGAGTTCTAGCTCAGGTTTTCTTACTCTGAATTTAGATCTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAA
CAAACATATACCTTCCATGAAGCACACACAGACTTTTGAAAGCAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAAT
GAAGCTTTGAAGGAAAAGAATACTTTGTTTCCAGCCCCCTTCCCACACTCTTCATGTGTTAACCCTGCCTTCCTGGACC
TTGGAGCCACGGTGACTGTATTACATGTTGTTATAGAAAAGTGAATTTAGAGTTCTGATCGTTCAAGAGAATGATTAAT
ATACATTTCTACACCA

BTLA is a lymphocyte inhibitory receptor with similarities to CTLA-4 and PD-1
Nat Immunol 4 (7), 670-679 (2003)

GTGAGTCACCAAGGAAGGCAGCGGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC

CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
 GTATTTTCAGCCTTCAGCATGCCGGAAGTGAATGTGGACTATAATGCCAGCTCAGAGACCTTGCGGTGTGAGGCTCCCCGA
 TGGTTCCCCCAGCCCACAGTGGTCTGGGCATCCCAAGTTGACCAGGGAGCCAACTTCTCGGAAGTCTCCAATACCAGCTT
 TGAGCTGAACTCTGAGAATGTGACCATGAAGTTGTGTCTGTGCTCTACAATGTTACGATCAACAACACATACTCCTGTA
 TGATTGAAAATGACATTGCCAAAGCAACAGGGGATATCAAAGTGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAG
 CTGCTAAACTCAAAGGCTTCTCTGTGTGTCTCTTCTTTCTTTGCCATCAGCTGGGCACTTCTGCCTCTCAGCCCTTACCT
 GATGCTAAAATAATGTGCCTCGGCCACAAAAAGCATGCAAAGTCATTGTTACAACAGGGATCTACAGAACTATTTACC
 ACCAGATATGACCTAGTTTTATATTTCTGGGAGGAAATGAATTCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAG
 AAACAAAAAGAAGCCAAAAGCAGAAGGCTCCAATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAA
 AATAATTCATGTGAACTAGACAAGTGTGTTAAGAGTGATAAGTAAAATGCACGTGGAGACAAGTGCATCCCCAGATCTCA
 GGGACCTCCCCCTGCCTGTACCTGGGGAGTGAGAGGACAGGATAGTGCATGTTCTTTGTCTCTGAATTTTTAGTTATAT
 GTGCTGTAATGTTGCTCTGAGGAAGCCCCCTGGAAAGTCTATCCCAACATATCCACATCTTATATTCCACAAATTAAGCTG
 TAGTATGTACCCTAAGACGCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATG
 ATTCACTTTTTATGATGCTTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCA
 TAATTTTAGCATAAACAGAGCAGTCGGCGACACCGATTTTATAAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGC
 GGGTTTTATTTCTCAGATGATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTTTACCTTGTCTATATGGCATTATGTCAT
 CACAAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGACAGCTAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGA
 CTCAGCTGGGGTGATTTGCCCCCATCTCCGGGGGAATGTCTGAAGACAATTTTGGTTACCTCAATGAGGGAGTGGAGG
 AGGATACAGTGCTACTACCAACTAGTGGATAGAGGCCAGGGATGCTGCTCAACCTCCTACCATGTACAGGACGTCTCCCC
 ATTACAACTACCCAATCCGAAGTGTCAACTGTGTGACGGCTAAGAAACCCTGGTTTTGAGTAGAAAAGGGCCTGGAAAGA
 GGGGAGCCAAACAAATCTGTCTGCTTCTCACATTAGTCATTGGCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGC
 ACAGAGAGCCAGAACTCTATCGGGCACCAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTG
 ATGGGATTATCTTCAGCTTGTTGAGCTTCTAAGTTTCTTTCCCTTCATTCTACCCTGCAAGCCAAGTTCTGTAAGAGAAA
 TGCCTGAGTTCTAGCTCAGGTTTTCTTACTCTGAATTTAGATCTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAA
 CAAACATATACCTTCCATGAAGCACACACAGACTTTTGAAAGCAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAAT
 GAAGCTTTGAAGGAAAAGAATACTTTGTTTCCAGCCCCCTTCCCACACTCTTCATGTGTTAACCCTGCCTTCTGGACC
 TTGGAGCCACGGTGACTGTATTACATGTTGTTATAGAAAAGTGAATTTAGAGTTCTGATCGTTCAAGAGAATGATTAAAT
 ATACATTTCTACACCA

B7S1, a novel B7 family member that negatively regulates T cell activation
 Immunity 18 (6), 863-873 (2003)

GTGAGTCACCAAGGAAGGCAGCGGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
 CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
 GTATTTTCAGCCTTCAGCATGCCGGAAGTGAATGTGGACTATAATGCCAGCTCAGAGACCTTGCGGTGTGAGGCTCCCCGA
 TGGTTCCCCCAGCCCACAGTGGTCTGGGCATCCCAAGTTGACCAGGGAGCCAACTTCTCGGAAGTCTCCAATACCAGCTT
 TGAGCTGAACTCTGAGAATGTGACCATGAAGTTGTGTCTGTGCTCTACAATGTTACGATCAACAACACATACTCCTGTA
 TGATTGAAAATGACATTGCCAAAGCAACAGGGGATATCAAAGTGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAG
 CTGCTAAACTCAAAGGCTTCTCTGTGTGTCTCTTCTTTCTTTGCCATCAGCTGGGCACTTCTGCCTCTCAGCCCTTACCT
 GATGCTAAAATAATGTGCCTCGGCCACAAAAAGCATGCAAAGTCATTGTTACAACAGGGATCTACAGAACTATTTACC
 ACCAGATATGACCTAGTTTTATATTTCTGGGAGGAAATGAATTCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAG
 AAACAAAAAGAAGCCAAAAGCAGAAGGCTCCAATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAA
 AATAATTCATGTGAACTAGACAAGTGTGTTAAGAGTGATAAGTAAAATGCACGTGGAGACAAGTGCATCCCCAGATCTCA
 GGGACCTCCCCCTGCCTGTACCTGGGGAGTGAGAGGACAGGATAGTGCATGTTCTTTGTCTCTGAATTTTTAGTTATAT
 GTGCTGTAATGTTGCTCTGAGGAAGCCCCCTGGAAAGTCTATCCCAACATATCCACATCTTATATTCCACAAATTAAGCTG
 TAGTATGTACCCTAAGACGCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATG
 ATTCACTTTTTATGATGCTTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCA
 TAATTTTAGCATAAACAGAGCAGTCGGCGACACCGATTTTATAAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGC
 GGGTTTTATTTCTCAGATGATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTTTACCTTGTCTATATGGCATTATGTCAT

CACAAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGGACAGCTAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGA
 CTCAGCTGGGGTGATTTGCGCCCCCATCTCCGGGGAATGTCTGAAGACAATTTTGGTTACCTCAATGAGGGAGTGGAGG
 AGGATACAGTGCTACTACCAACTAGTGGATAGAGGCCAGGGATGCTGCTCAACCTCCTACCATGTACAGGACGTCTCCCC
 ATTACAACTACCCAATCCGAAGTGTCAACTGTGTCAGGGCTAAGAAACCCTGGTTTTGAGTAGAAAAGGGCCTGGAAAGA
 GGGGAGCCAACAAATCTGTCTGCTTCCTCACATTAGTCATTGGCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGC
 ACAGAGAGCCAGAACTCTATCGGGCACCAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTG
 ATGGGATTATCTTCAGCTTGTTGAGCTTCTAAGTTTCTTTCCCTTCATTCTACCCTGCAAGCCAAGTTCTGTAAGAGAAA
 TGCCTGAGTTCTAGCTCAGGTTTTCTTACTCTGAATTTAGATCTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAA
 CAAACATATACCTTCCATGAAGCACACACAGACTTTTGAAAGCAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAAT
 GAAGCTTTGAAGGAAAAGAATACTTTGTTTCCAGCCCCCTTCCCACACTCTTCATGTGTTAACCCTGCCTTCCTGGACC
 TTGGAGCCACGGTGACTGTATTACATGTTGTTATAGAAAACCTGATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAT
 ATACATTTCTACACCA

B7-H4, a molecule of the B7 family, negatively regulates T cell immunity
 Immunity 18 (6), 849-861 (2003)

GTGAGTCACCAAGGAAGGCAGCGGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
 CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
 GTATTTTCAGCCTTCAGCATGCCGGAAGTGAATGTGGACTATAATGCCAGCTCAGAGACCTTGCGGTGTGAGGCTCCCCGA
 TGGTTCCCCCAGCCACAGTGGTCTGGGCATCCCAAGTTGACCAGGGAGCCAATTCTCGGAAGTCTCCAATACCAGCTT
 TGAGCTGAACCTCTGAGAATGTGACCATGAAGTTGTGTCTGTGCTCTACAATGTTACGATCAACAACACATACTCCTGTA
 TGATTGAAAATGACATTGCCAAAGCAACAGGGGATATCAAAGTGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAG
 CTGCTAAACTCAAAGGCTTCTCTGTGTGTCTCTCTTTCTTTGCCATCAGCTGGGCACTTCTGCCTCTCAGCCCTTACCT
 GATGCTAAAATAATGTGCCTCGGCCACAAAAAGCATGCAAAGTCATTGTTACAACAGGGATCTACAGAATATTTTACC
 ACCAGATATGACCTAGTTTTATATTTCTGGGAGGAAATGAATTCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAG
 AAACAAAAAGAAGCCAAAAGCAGAAGGCTCCAATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAA
 AATAATTCATGTGAAGTAGACAAGTGTGTTAAGAGTGATAAGTAAAATGCACGTGGAGACAAGTGCATCCCCAGATCTCA
 GGGACCTCCCCCTGCCTGTACCTGGGGAGTGAGAGGACAGGATAGTGCATGTTCTTTGTCTCTGAATTTTTAGTTATAT
 GTGCTGTAATGTTGCTCTGAGGAAGCCCCCTGGAAGTCTATCCCAACATATCCACATCTTATATTCCACAAATTAAGCTG
 TAGTATGTACCCTAAGACGCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATG
 ATTCATTTTTATGATGCTTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCA
 TAATTTTAGCATAAACAGAGCAGTCGGCGACACCGATTTTATAAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGC
 GGGTTTTATTTCTCAGATGATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTTTTACCTTGTCTATATGGCATTATGTCAT
 CACAAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGGACAGCTAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGA
 CTCAGCTGGGGTGATTTGCGCCCCCATCTCCGGGGAATGTCTGAAGACAATTTTGGTTACCTCAATGAGGGAGTGGAGG
 AGGATACAGTGCTACTACCAACTAGTGGATAGAGGCCAGGGATGCTGCTCAACCTCCTACCATGTACAGGACGTCTCCCC
 ATTACAACTACCCAATCCGAAGTGTCAACTGTGTCAGGGCTAAGAAACCCTGGTTTTGAGTAGAAAAGGGCCTGGAAAGA
 GGGGAGCCAACAAATCTGTCTGCTTCCTCACATTAGTCATTGGCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGC
 ACAGAGAGCCAGAACTCTATCGGGCACCAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTG
 ATGGGATTATCTTCAGCTTGTTGAGCTTCTAAGTTTCTTTCCCTTCATTCTACCCTGCAAGCCAAGTTCTGTAAGAGAAA
 TGCCTGAGTTCTAGCTCAGGTTTTCTTACTCTGAATTTAGATCTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAA
 CAAACATATACCTTCCATGAAGCACACACAGACTTTTGAAAGCAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAAT
 GAAGCTTTGAAGGAAAAGAATACTTTGTTTCCAGCCCCCTTCCCACACTCTTCATGTGTTAACCCTGCCTTCCTGGACC
 TTGGAGCCACGGTGACTGTATTACATGTTGTTATAGAAAACCTGATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAT
 ATACATTTCTACACCA

[Knockdown of B7-H4/VTCN1 promotes apoptosis and autophagy of Huh7 cells by
 inhibiting phosphorylation of JNK]

Xi Bao Yu Fen Zi Mian Yi Xue Za Zhi 36 (7), 603-608 (2020)

CTGGTAATCTGTGGCGTAACAAGACCTCCAGGTGATTCTCTGTATTAGCAGCCGCTCTGTGCTCCCTGATTCTCCAGAA
AAGCACAAGGATTTAATCCAGATAGATATAAATTTACCTGGGATCATTATCATTCCACATTCTTCTTTAAGAAATGTG
CTAAAGAGCCACAGATGGGTCTTGATGAAAACAAAGGAAAAGCCATGAAGTTTCTACAGCATAATTAGCATCATCATTAT
TCTGGCTGGAGCAATTGCACTCATCATTGGCTTTGGTATTTTCAAGGAGACACTCCATCACAGTCACTACTGTGCGCTCAG
CTGGGAACATTGGGGAGGATGGAATCCTGAGCTGCACTTTTGAACCTGACATCAAACCTTTCTGATATCGTGATACAATGG
CTGAAGGAAGTGTTTTAGGCTTGGTCCATGAGTTCAAAGAAGGCAAAGATGAGCTGTGCGGAGCAGGATGAAATGTTTCA
AGGCCGGACAGCAGTGTGTTGCTGATCAAGTGATAGTTGGCAATGCCTCTTTGCGGCTGAAAAACGTGCAACTCACAGATG
CTGGCACCTACAAATGTTATATCATCACTTCTAAAGGCAAGGGGAATGCTAACCTTGAGTATAAACTGGAGCCTTCAGC
ATGCCGGAAGTGAATGTGGACTATAATGCCAGCTCAGAGACCTTGCGGTGTGAGGCTCCCCGATGGTTCCCCCAGCCCAC
AGTGGTCTGGGCATCCCAAGTTGACCAGGGAGCCAACTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGA
ATGTGACCATGAAGGTTGTGTCTGTGCTCTACAATGTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATT
GCCAAAGCAACAGGGGATATCAAAGTGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAGCTGCTAACTCAAAGGC
TTCTCTGTGTCTCTTTCTTTCTTTGCCATCAGCTGGGCACTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTG
CCTCGGCCACAAAAAAGCATGCAAAGTCATTGTTACAACAGGGATCTACAGAACTATTTACCACCAGATATGACCTAGT
TTTATATTTCTGGGAGGAAATGAATTCATATCTAGAAGTCTGGAGTGAGCAACAAGAGCAAGAAACAAAAAGAAGCCAA
AAGCAGAAGGCTCCAATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAATAATTCATGTGAACT
AGACAAGTGTGTTAAGAGTGATAAGTAAATGACCGTGAGACAAGTGATCCCCAGATCTCAGGGACCTCCCCCTGCCT
GTCACCTGGGGAGTGAGAGGACAGGATAGTGATGTTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTC
TGAGGAAGCCCCTGGAAGTCTATCCCAACATATCCACATCTTATATTCACAAATTAAGCTGTAGTATGTACCCTAAGA
CGCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATGATTCACTTTTTATGATG
CTTCCAAAGGTGCCTTGCTTCTCTTCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACA
GAGCAGTCGGCGACACCGATTTTTATAAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGCGGGTTTTATTTCTCAGAT
GATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTTTACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTT
CTCCTTTCCATCCTGCGTGACAGCTAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTT
CGCCCCCATCTCCGGGGGAATGTCTGAAGACAATTTTGGTTACCTCAATGAGGGAGTGAGGAGGATACAGTGCTACTA
CCAAGTAGTGATAGAGGCCAGGGATGCTGCTCAACCTCCTACCATGTACAGGACGTCTCCCCATTACAACCTACCCAATC
CGAAGTGCAACTGTGTCAGGGCTAAGAAACCCTGGTTTTGAGTAGAAAAGGGCTGGAAGAGGGGAGCCAACAAATCT
GTCTGCTTCCTCACATTAGTCATTGGCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTC
TATCGGGCACCAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGC
TTGTTGAGCTTCTAAGTTTTCTTTCCCTTCATTCTACCCTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTC
AGGTTTTCTTACTCTGAATTTAGATCTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCA
TGAAGCACACAGACTTTTGAAGCAAGGACAATGACTGCTTGAATTGAGGCCCTTGAGGAATGAAGCTTTGAAGGAAAA
GAATACTTTGTTTCCAGCCCCCTTCCCACACTCTTCATGTGTTAACCCTGCCTTCTGAGACCTTGGAGCCACGGTGACT
GTATTACATGTTGTTATAGAAAAGTATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTACACCA

B7-H4 is a potential prognostic biomarker of prostate cancer

Exp Mol Pathol 114, 104406 (2020)

CTGGTAATCTGTGGCGTAACAAGACCTCCAGGTGATTCTCTGTATTAGCAGCCGCTCTGTGCTCCCTGATTCTCCAGAA
AAGCACAAGGATTTAATCCAGATAGATATAAATTTACCTGGGATCATTATCATTCCACATTCTTCTTTAAGAAATGTG
CTAAAGAGCCACAGATGGGTCTTGATGAAAACAAAGGAAAAGCCATGAAGTTTCTACAGCATAATTAGCATCATCATTAT
TCTGGCTGGAGCAATTGCACTCATCATTGGCTTTGGTATTTTCAAGGAGACACTCCATCACAGTCACTACTGTGCGCTCAG
CTGGGAACATTGGGGAGGATGGAATCCTGAGCTGCACTTTTGAACCTGACATCAAACCTTTCTGATATCGTGATACAATGG
CTGAAGGAAGTGTTTTAGGCTTGGTCCATGAGTTCAAAGAAGGCAAAGATGAGCTGTGCGGAGCAGGATGAAATGTTTCA
AGGCCGGACAGCAGTGTGTTGCTGATCAAGTGATAGTTGGCAATGCCTCTTTGCGGCTGAAAAACGTGCAACTCACAGATG
CTGGCACCTACAAATGTTATATCATCACTTCTAAAGGCAAGGGGAATGCTAACCTTGAGTATAAACTGGAGCCTTCAGC
ATGCCGGAAGTGAATGTGGACTATAATGCCAGCTCAGAGACCTTGCGGTGTGAGGCTCCCCGATGGTTCCCCCAGCCCAC
AGTGGTCTGGGCATCCCAAGTTGACCAGGGAGCCAACTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGA
ATGTGACCATGAAGGTTGTGTCTGTGCTCTACAATGTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATT

GCCAAAGCAACAGGGGATATCAAAGTGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAGCTGCTAAACTCAAAGGC
 TTCTCTGTGTCTCTTTCTTTTCCATCAGCTGGGCACCTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTG
 CCTCGGCCACAAAAAGCATGCAAAGTCATTGTTACAACAGGGATCTACAGAACTATTTACCACCAGATATGACCTAGT
 TTTATATTTCTGGGAGGAAATGAATTCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAGAAACAAAAAGAAGCCAA
 AAGCAGAAGGCTCCAATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAAATAATTCATGTGAACT
 AGACAAGTGTGTTAAGAGTGATAAGTAAATGCACGTGGAGACAAGTGCATCCCCAGATCTCAGGGACCTCCCCCTGCCT
 GTCACCTGGGGAGTGAGAGGACAGGATAGTGCATGTTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTC
 TGAGGAAGCCCCTGGAAAGTCTATCCCAACATATCCACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGA
 CGCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATGATTCACTTTTTATGATG
 CTTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACA
 GAGCAGTCGGCGACACCGATTTTATAAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGCGGGTTTTATTTCTCAGAT
 GATGTTTCATCCGTGAATGGTCCAGGAAGGACCTTTCACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTT
 CTCCTTTCCATCCTGCGTGGACAGCTAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTT
 CGCCCCCATCTCCGGGGGAATGTCTGAAGACAATTTTGGTTACCTCAATGAGGGAGTGGAGGAGGATACAGTGCTACTA
 CCAACTAGTGGATAGAGGCCAGGGATGCTGCTCAACCTCCTACCATGTACAGGACGTCTCCCCATTACAACCTACCCAATC
 CGAAGTGTCAACTGTGTGAGGGCTAAGAAACCCTGGTTTTGAGTAGAAAAGGGCTGGAAAGAGGGGAGCCAACAAATCT
 GTCTGCTTCTCACATTAGTCATTGGCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTC
 TATCGGGCACCAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGC
 TTGTTGAGCTTCTAAGTTTTCTTTCCCTTCACTTACCTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTC
 AGGTTTTCTTACTCTGAATTTAGATCTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCA
 TGAAGCACACAGACTTTTGAAGCAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAA
 GAATACTTTGTTTCCAGCCCCCTTCCCACACTCTTCATGTGTTAACCCTGCCTTCTGGACCTTGGAGCCACGGTGACT
 GTATTACATGTTGTTATAGAAAAGTATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTACACCA

B7H4 expression in tumor cells impairs CD8 T cell responses and tumor immunity
 Cancer Immunol Immunother 69 (2), 163-174 (2020)

CTGGTAATCTGTGGCGTAACAAGACCTCCAGGTGATTCTCTGTATTAGCAGCCGCTCTGTGCTCCCTGATTCTCCAGAA
 AAGCACAAGGATTTAATCCAGATAGATATAAATTTACCTGGGATCATTATCATTCCACATTCTTCTTTAAGAAATGTG
 CTAAAGAGCCACAGATGGGTCTTGATGAAAACAAAGGAAAAAGCCATGAAGTTTCTACAGCATAATTAGCATCATCATTAT
 TCTGGCTGGAGCAATTGCACTCATCATTGGCTTTGGTATTTTACGGGAGACACTCCATCACAGTCACTACTGTGCCTCAG
 CTGGGAACATTGGGGAGGATGGAATCCTGAGCTGCACTTTTGAACCTGACATCAAACTTTCTGATATCGTGATACAATGG
 CTGAAGGAAGGTGTTTTAGGCTTGGTCCATGAGTTCAAAGAAGGCAAAGATGAGCTGTGCGAGCAGGATGAAATGTTTCA
 AGGCCGACAGCAGTGTGTTGCTGATCAAGTGATAGTTGGCAATGCCTCTTTGCGGCTGAAAAACGTGCAACTCACAGATG
 CTGGCACCTACAAATGTTATATCATCACTTCTAAAGGCAAGGGGAATGCTAACCTTGAGTATAAACTGGAGCCTTCAGC
 ATGCCGGAAGTGAATGTGGACTATAATGCCAGCTCAGAGACCTTGCGGTGTGAGGCTCCCCGATGGTTCCCCCAGCCCAC
 AGTGCTGTGGGCATCCCAAGTTGACCAGGGAGCCAACTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGA
 ATGTGACCATGAAGGTTGTGTCTGTGCTCTACAATGTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATT
 GCCAAAGCAACAGGGGATATCAAAGTGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAGCTGCTAAACTCAAAGGC
 TTCTCTGTGTGTCTCTTTCTTTTCCATCAGCTGGGCACCTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTG
 CCTCGGCCACAAAAAGCATGCAAAGTCATTGTTACAACAGGGATCTACAGAACTATTTACCACCAGATATGACCTAGT
 TTTATATTTCTGGGAGGAAATGAATTCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAGAAACAAAAAGAAGCCAA
 AAGCAGAAGGCTCCAATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAAATAATTCATGTGAACT
 AGACAAGTGTGTTAAGAGTGATAAGTAAATGCACGTGGAGACAAGTGCATCCCCAGATCTCAGGGACCTCCCCCTGCCT
 GTCACCTGGGGAGTGAGAGGACAGGATAGTGCATGTTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTC
 TGAGGAAGCCCCTGGAAAGTCTATCCCAACATATCCACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGA
 CGCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATGATTCACTTTTTATGATG
 CTTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACA
 GAGCAGTCGGCGACACCGATTTTATAAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGCGGGTTTTATTTCTCAGAT

GATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTTTACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTT
CTCCTTTCCATCCTGCGTGGACAGCTAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTT
CGCCCCCATCTCCGGGGGAATGTCTGAAGACAATTTTGGTTACCTCAATGAGGGAGTGGAGGAGGATACAGTGCTACTA
CCAAGTGTCAACTGTGTGTCAGGGCTAAGAAACCCTGGTTTTGAGTAGAAAAGGGCCTGGAAAGAGGGGAGCCAACAAATCT
GTCTGCTTCCTCACCATTAGTCATTGGCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTC
TATCGGGCACCAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGC
TTGTTGAGCTTCTAAGTTTCTTTCCCTTCATTCTACCCTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTC
AGGTTTTCTTACTCTGAATTTAGATCTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCA
TGAAGCACACACAGACTTTTGAAGCAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAA
GAATACTTTGTTTCCAGCCCCCTTCCCACACTCTTCATGTGTTAACCCTGCCTTCTGGACCTTGGAGCCACGGTGACT
GTATTACATGTTGTTATAGAAAACCTGATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAATATACATTTCTACACCA

B7-H4, a promising target for immunotherapy

Cell Immunol 347, 104008 (2020)

CTGGTAATCTGTGGCGTAACAAGACCTCCAGGTGATTCTCTGTATTAGCAGCCGCTCTGTGCTCCCTGATTCTCCAGAA
AAGCACAAGGATTTAATCCAGATAGATATAAATTTACCTGGGATCATTATCATTCCACATTCTTCTTTAAGAAATGTG
CTAAAGAGCCACAGATGGGTCTTGATGAAAACAAAGGAAAAGCCATGAAGTTTCTACAGCATAATTAGCATCATCATTAT
TCTGGCTGGAGCAATTGCACTCATCATTGGCTTTGGTATTTACAGGAGACACTCCATCACAGTCACTACTGTCGCCCTCAG
CTGGGAACATTGGGGAGGATGGAATCCTGAGCTGCACTTTTGAACCTGACATCAAACCTTTCTGATATCGTGATACAATGG
CTGAAGGAAGGTGTTTTAGGCTTGGTCCATGAGTTCAAAGAAGGCAAAGATGAGCTGTGCGGAGCAGGATGAAATGTTTCA
AGGCCCGACAGCAGTGTGTTGCTGATCAAGTGATAGTTGGCAATGCCTCTTTGCGGCTGAAAAACGTGCAACTCACAGATG
CTGGCACCTACAAATGTTATATCATCACTTCTAAAGGCAAGGGGAATGCTAACCTTGAGTATAAACTGGAGCCTTCAGC
ATGCCGGAAGTGAATGTGGACTATAATGCCAGCTCAGAGACCTTGCGGTGTGAGGCTCCCCGATGGTTCCCCCAGCCCAC
AGTGGTCTGGGCATCCCAAGTTGACCAGGGAGCCAACCTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGA
ATGTGACCATGAAGGTTGTGTCTGTGCTCTACAATGTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATT
GCCAAAGCAACAGGGGATATCAAAGTGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAGCTGCTAACTCAAAGGC
TTCTCTGTGTCTCTTCTTTCTTTGCCATCAGCTGGGCACTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTG
CCTCGGCCACAAAAAAGCATGCAAAGTCATTGTTACAACAGGGATCTACAGAACTATTTTACCACCAGATATGACCTAGT
TTTATATTTCTGGGAGGAAATGAATTCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAGAAACAAAAAGAAGCCAA
AAGCAGAAGGCTCCAATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAATAATTCATGTGAACT
AGACAAGTGTGTTAAGAGTGATAAGTAAAATGCACGTGGAGACAAGTGCATCCCCAGATCTCAGGGACCTCCCCCTGCCT
GTCACCTGGGGAGTGAGAGGACAGGATAGTGCATGTTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTC
TGAGGAAGCCCCTGGAAAGTCTATCCCAACATATCCACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGA
CGCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATGATTCACTTTTTATGATG
CTTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACA
GAGCAGTCGGCGACACCGATTTTTATAAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGCGGGTTTTATTTCTCAGAT
GATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTTTACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTT
CTCCTTTCCATCCTGCGTGGACAGCTAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTT
CGCCCCCATCTCCGGGGGAATGTCTGAAGACAATTTTGGTTACCTCAATGAGGGAGTGGAGGAGGATACAGTGCTACTA
CCAAGTGTCAACTGTGTGTCAGGGCTAAGAAACCCTGGTTTTGAGTAGAAAAGGGCCTGGAAAGAGGGGAGCCAACAAATCT
GTCTGCTTCCTCACCATTAGTCATTGGCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTC
TATCGGGCACCAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGC
TTGTTGAGCTTCTAAGTTTCTTTCCCTTCATTCTACCCTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTC
AGGTTTTCTTACTCTGAATTTAGATCTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCA
TGAAGCACACACAGACTTTTGAAGCAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAA
GAATACTTTGTTTCCAGCCCCCTTCCCACACTCTTCATGTGTTAACCCTGCCTTCTGGACCTTGGAGCCACGGTGACT

GTATTACATGTTGTTATAGAAAAGTATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTACACCA

Expression of co-inhibitory molecules B7-H4 and B7-H1 in Epstein-Barr virus positive diffuse large B-cell lymphoma and their roles in tumor invasion
Pathol Res Pract 215 (12), 152684 (2019)

CTGGTAATCTGTGGCGTAACAAGACCTCCAGGTGATTCTCTGTATTAGCAGCCGCTCTGTGCTCCCTGATTCCCTCCAGAA
AAGCACAAGGATTTAATCCAGATAGATATAAATTTACCTGGGATCATTATCATTCCACATTCTTCTTTAAGAAATGTG
CTAAAGAGCCACAGATGGGTCTTGATGAAAACAAAGGAAAAGCCATGAAGTTTCTACAGCATAATTAGCATCATCATTAT
TCTGGCTGGAGCAATTGCACTCATCATTGGCTTTGGTATTTTCAGGGAGACACTCCATCACAGTCACTACTGTGCGCTCAG
CTGGGAACATTGGGGAGGATGGAATCCTGAGCTGCACTTTTGAACCTGACATCAAACCTTTCTGATATCGTGATACAATGG
CTGAAGGAAGGTGTTTTAGGCTTGGTCCATGAGTTCAAAGAAGGCAAAGATGAGCTGTCGGAGCAGGATGAAATGTTTCAG
AGGCCGGACAGCAGTGTGCTGATCAAGTGATAGTTGGCAATGCCTCTTTGCGGCTGAAAAACGTGCAACTCACAGATG
CTGGCACCTACAAATGTTATATCATCACTTCTAAAGGCAAGGGGAATGCTAACCTTGAGTATAAACTGGAGCCTTCAGC
ATGCCGGAAGTGAATGTGGACTATAATGCCAGCTCAGAGACCTTGCGGTGTGAGGCTCCCCGATGGTTCCCCCAGCCCAC
AGTGGTCTGGGCATCCCAAGTTGACCAGGGAGCCAACTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGA
ATGTGACCATGAAGGTTGTGTCTGTGCTCTACAATGTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATT
GCCAAAGCAACAGGGGATATCAAAGTGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAGCTGCTAAACTCAAAGGC
TTCTCTGTGTCTCTTCTTTCTTTGCCATCAGCTGGGCACCTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTG
CCTCGGCCACAAAAAGCATGCAAAGTCATTGTTACAACAGGGATCTACAGAACTATTTACCACCAGATATGACCTAGT
TTTATATTTCTGGGAGGAAATGAATTCATATCTAGAAGTCTGGAGTGAGCAACAAGAGCAAGAAACAAAAAGAAGCCAA
AAGCAGAAGGCTCCAATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAAATAATTCATGTGAAC
AGACAAGTGTGTTAAGAGTGATAAGTAAATGCACGTGGAGACAAGTGCATCCCCAGATCTCAGGGACCTCCCCCTGCCT
GTCACCTGGGGAGTGAGAGGACAGGATAGTGCATGTTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTC
TGAGGAAGCCCTGGAAAGTCTATCCCAACATATCCACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGA
CGCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATGATTCACTTTTTATGATG
CTTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAAACA
GAGCAGTCGGCGACACCGATTTTATAAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGCGGGTTTTATTTCTCAGAT
GATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTTTACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTT
CTCCTTTCCATCCTGCGTGGACAGCTAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTT
CGCCCCCATCTCCGGGGGAATGTCTGAAGACAATTTTGGTTACCTCAATGAGGGAGTGGAGGAGGATACAGTGCTACTA
CCAAGTGTCAACTGTGTGCTAGGGCTAAGAAACCCTGGTTTTGAGTAGAAAAGGGCCTGGAAAGAGGGGAGCCAACAAATCT
GTCTGCTTCTCACATTAGTCATTGGCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTC
TATCGGGCACCAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGC
TTGTTGAGCTTCTAAGTTTCTTTCCCTTCATTCTACCCTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTC
AGGTTTTCTTACTCTGAATTTAGATCTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCA
TGAAGCACACAGAGACTTTTGAAAGCAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAA
GAATACTTTGTTCCAGCCCCCTTCCACACTCTTCATGTGTTAACCCTGCCTTCTGGACCTTGGAGCCACGGTGACT
GTATTACATGTTGTTATAGAAAAGTATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTACACCA

The secreted protein discovery initiative (SPDI), a large-scale effort to identify novel human secreted and transmembrane proteins: a bioinformatics assessment

Genome Res 13 (10), 2265-2270 (2003)

CTGGTAATCTGTGGCGTAACAAGACCTCCAGGTGATTCTCTGTATTAGCAGCCGCTCTGTGCTCCCTGATTCCCTCCAGAA
AAGCACAAGGATTTAATCCAGATAGATATAAATTTACCTGGGATCATTATCATTCCACATTCTTCTTTAAGAAATGTG
CTAAAGAGCCACAGATGGGTCTTGATGAAAACAAAGGAAAAGCCATGAAGTTTCTACAGCATAATTAGCATCATCATTAT
TCTGGCTGGAGCAATTGCACTCATCATTGGCTTTGGTATTTTCAGGGAGACACTCCATCACAGTCACTACTGTGCGCTCAG

CTGGGAACATTGGGGAGGATGGAATCCTGAGCTGCACTTTTGAACCTGACATCAAACCTTTCTGATATCGTGATACAATGG
CTGAAGGAAGGTGTTTTAGGCTTGGTCCATGAGTTCAAAGAAGGCAAAGATGAGCTGTCGGAGCAGGATGAAATGTTTCAG
AGGCCGGACAGCAGTGTGTTGCTGATCAAGTGATAGTTGGCAATGCCTCTTTGCGGCTGAAAAACGTGCAACTCACAGATG
CTGGCACCTACAAATGTTATATCATCACTTCTAAAGGCAAGGGGAATGCTAACCTTGAGTATAAACTGGAGCCTTCAGC
ATGCCGGAAGTGAATGTGGACTATAATGCCAGCTCAGAGACCTTGCGGTGTGAGGCTCCCCGATGGTTCCCCCAGCCCAC
AGTGGTCTGGGCATCCCAAGTTGACCAGGGAGCCAACCTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGA
ATGTGACCATGAAGGTTGTGTCTGTGCTCTACAATGTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATT
GCCAAAGCAACAGGGGATATCAAAGTGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAGCTGCTAAACTCAAAGGC
TTCTCTGTGTCTCTTCTTTCTTTGCCATCAGCTGGGCACCTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTG
CCTCGGCCACAAAAAAGCATGCAAAGTCATTGTTACAACAGGGATCTACAGAACTATTTCAACCACCAGATATGACCTAGT
TTTATATTTCTGGGAGGAAATGAATTCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAGAAACAAAAAGAAGCCAA
AAGCAGAAGGCTCCAATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAATAATTCATGTGAACT
AGACAAGTGTGTTAAGAGTGATAAGTAAATGACCGTGAGACAAGTGATCCCCAGATCTCAGGGACCTCCCCCTGCCT
GTCACCTGGGGAGTGAGAGGACAGGATAGTGCATGTTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTC
TGAGGAAGCCCCTGGAAGTCTATCCCAACATATCCACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGA
CGCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTATGTAATGGGTCAAATGATTCACTTTTTATGATG
CTTCCAAAGGTGCCTTGCTTCTCTTCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACA
GAGCAGTCGGCGACACCGATTTTATAAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGCGGGTTTTATTTCTCAGAT
GATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTTTCACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTT
CTCCTTTCCATCCTGCGTGAGACAGCTAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTT
CGCCCCCATCTCCGGGGGAATGTCTGAAGACAATTTTGGTTACCTCAATGAGGGAGTGAGGAGGATACAGTGCTACTA
CCAAGTGTCAACTGTGTGCTAGGGCTAAGAAACCCTGGTTTTGAGTAGAAAAGGGCTGAAAGAGGGGAGCCAACAAATCT
GTCTGCTTCCTCACATTAGTCATTGGCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTC
TATCGGGCACCAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGC
TTGTTGAGCTTCTAAGTTTCTTTCCCTTCATTCTACCCTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTC
AGGTTTTCTTACTCTGAATTTAGATCTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCA
TGAAGCACACAGACTTTTGAAGCAAGGACAATGACTGCTTGAATTGAGGCCCTTGAGGAATGAAGCTTTGAAGGAAAA
GAATACTTTGTTTCCAGCCCCCTTCCCACACTCTTCATGTGTTAACCCTGCCTTCTGAGCCTTGGAGCCACGGTGACT
GTATTACATGTTGTTATAGAAAAGTATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTACACCA

B7x: a widely expressed B7 family member that inhibits T cell activation
Proc Natl Acad Sci U S A 100 (18), 10388-10392 (2003)

CTGGTAATCTGTGGCGTAACAAGACCTCCAGGTGATTCTCTGTATTAGCAGCCGCTCTGTGCTCCCTGATTCTCCAGAA
AAGCACAAGGATTTAATCCAGATAGATATAAATTTACCTGGGATCATTATCATTCCACATTCTTCTTTAAGAAATGTG
CTAAAGAGCCACAGATGGGTCTTGATGAAAACAAAGGAAAAGCCATGAAGTTTCTACAGCATAATTAGCATCATCATTAT
TCTGGCTGGAGCAATTGCACTCATCATTGGCTTTGGTATTTTACAGGGAGACACTCCATCACAGTCACTACTGTGCTCAG
CTGGGAACATTGGGGAGGATGGAATCCTGAGCTGCACTTTTGAACCTGACATCAAACCTTTCTGATATCGTGATACAATGG
CTGAAGGAAGGTGTTTTAGGCTTGGTCCATGAGTTCAAAGAAGGCAAAGATGAGCTGTCGGAGCAGGATGAAATGTTTCAG
AGGCCGGACAGCAGTGTGTTGCTGATCAAGTGATAGTTGGCAATGCCTCTTTGCGGCTGAAAAACGTGCAACTCACAGATG
CTGGCACCTACAAATGTTATATCATCACTTCTAAAGGCAAGGGGAATGCTAACCTTGAGTATAAACTGGAGCCTTCAGC
ATGCCGGAAGTGAATGTGGACTATAATGCCAGCTCAGAGACCTTGCGGTGTGAGGCTCCCCGATGGTTCCCCCAGCCCAC
AGTGGTCTGGGCATCCCAAGTTGACCAGGGAGCCAACCTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGA
ATGTGACCATGAAGGTTGTGTCTGTGCTCTACAATGTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATT
GCCAAAGCAACAGGGGATATCAAAGTGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAGCTGCTAAACTCAAAGGC
TTCTCTGTGTGTCTCTTCTTTCTTTGCCATCAGCTGGGCACCTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTG
CCTCGGCCACAAAAAAGCATGCAAAGTCATTGTTACAACAGGGATCTACAGAACTATTTCAACCACCAGATATGACCTAGT
TTTATATTTCTGGGAGGAAATGAATTCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAGAAACAAAAAGAAGCCAA

AAGCAGAAGGCTCCAATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAAATAATTCATGTGAACT
 AGACAAGTGTGTTAAGAGTGATAAGTAAAATGCACGTGGAGACAAGTGCATCCCCAGATCTCAGGGACCTCCCCCTGCCT
 GTCACCTGGGGAGTGAGAGGACAGGATAGTGCATGTTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTC
 TGAGGAAGCCCCTGGAAAGTCTATCCCAACATATCCACATCTTATATCCACAAATTAAGCTGTAGTATGTACCCTAAGA
 CGCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATGATTCACTTTTTATGATG
 CTTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAAACA
 GAGCAGTCGGCGACACCGATTTTTATAAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGCGGGTTTTATTTCTCAGAT
 GATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTTTCACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTT
 CTCCTTTCCATCTCGTGGACAGCTAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTT
 CGCCCCCATCTCCGGGGGAATGTCTGAAGACAATTTTGGTTACCTCAATGAGGGAGTGGAGGAGGATACAGTGCTACTA
 CCAACTAGTGGATAGAGGCCAGGGATGCTGCTCAACCTCCTACCATGTACAGGACGTCTCCCCATTACAACTACCCAATC
 CGAAGTGTCAACTGTGTCAGGGCTAAGAAACCTGGTTTTGAGTAGAAAAGGGCTGGAAAGAGGGGAGCCAACAAATCT
 GTCTGCTTCCTCACATTAGTCATTGGCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAATC
 TATCGGGCACCAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGC
 TTGTTGAGCTTCTAAGTTTCTTTCCCTTCATTCTACCTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTC
 AGGTTTTCTTACTCTGAATTTAGATCTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCA
 TGAAGCACACACAGACTTTTGAAGCAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAA
 GAATACTTTGTTTCCAGCCCCCTTCCCACACTCTTCATGTGTTAACCCTGCCTTCCTGGACCTTGGAGCCACGGTGACT
 GTATTACATGTTGTTATAGAAAATGATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAATATACATTTCTACACCA

BTLA is a lymphocyte inhibitory receptor with similarities to CTLA-4 and PD-1
 Nat Immunol 4 (7), 670-679 (2003)

CTGGTAATCTGTGGCGTAACAAGACCTCCAGGTGATTCTCTGTATTAGCAGCCGCTCTGTGCTCCCTGATTCTCCAGAA
 AAGCACAAGGATTTAATCCAGATAGATATAAATTTACCTGGGATCATTTATCATTCCACATTCTTCTTTAAGAAATGTG
 CTAAAGAGCCACAGATGGGTCTTGATGAAAACAAAGGAAAAGCCATGAAGTTTCTACAGCATAATTAGCATCATCATTAT
 TCTGGCTGGAGCAATTGCACTCATCATTGGCTTTGGTATTTTCAAGGAGACACTCCATCACAGTCACTACTGTGCTCAG
 CTGGGAACATTGGGGAGGATGGAATCCTGAGCTGCACTTTTGAACCTGACATCAAATTTCTGATATCGTGATACAATGG
 CTGAAGGAAGTGTTTTAGGCTTGGTCCATGAGTTCAAAGAAGGCAAAGATGAGCTGTGCGGAGCAGGATGAAATGTTTCA
 AGGCCGACAGCAGTGTTTTGCTGATCAAGTGATAGTTGGCAATGCCTCTTTGCGGCTGAAAAACGTGCAACTCACAGATG
 CTGGCACCTACAAATGTTATATCATCATTCTAAAGGCAAGGGGAATGCTAACCTTGAGTATAAACTGGAGCCTTCAGC
 ATGCCGGAAGTGAATGTGGACTATAATGCCAGCTCAGAGACCTTGCGGTGTGAGGCTCCCCGATGGTTCCCCCAGCCCAC
 AGTGGTCTGGGCATCCCAAGTTGACCAGGGAGCCAATTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGA
 ATGTGACCATGAAGGTTGTGTCTGTGCTCTACAATGTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATT
 GCCAAAGCAACAGGGGATATCAAAGTGACAGAATCGGAGATCAAAGGCGGAGTCACCTACAGCTGCTAACTCAAAGGC
 TTCTCTGTGTCTCTTCTTTCTTTGCCATCAGCTGGGCACTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTG
 CCTCGGCCACAAAAAAGCATGCAAAGTCATTGTTACAACAGGGATCTACAGAACTATTTACCACCAGATATGACCTAGT
 TTTATATTTCTGGGAGGAAATGAATTCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAGAAACAAAAAGAAGCCAA
 AAGCAGAAGGCTCCAATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAAATAATTCATGTGAACT
 AGACAAGTGTGTTAAGAGTGATAAGTAAAATGCACGTGGAGACAAGTGCATCCCCAGATCTCAGGGACCTCCCCCTGCCT
 GTCACCTGGGGAGTGAGAGGACAGGATAGTGCATGTTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTC
 TGAGGAAGCCCCTGGAAAGTCTATCCCAACATATCCACATCTTATATTCACAAATTAAGCTGTAGTATGTACCCTAAGA
 CGCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATGATTCACTTTTTATGATG
 CTTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAAACA
 GAGCAGTCGGCGACACCGATTTTTATAAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGCGGGTTTTATTTCTCAGAT
 GATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTTTCACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTT
 CTCCTTTCCATCTCGTGGACAGCTAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTT
 CGCCCCCATCTCCGGGGGAATGTCTGAAGACAATTTTGGTTACCTCAATGAGGGAGTGGAGGAGGATACAGTGCTACTA
 CCAACTAGTGGATAGAGGCCAGGGATGCTGCTCAACCTCCTACCATGTACAGGACGTCTCCCCATTACAACTACCCAATC

CGAAGTGTCAACTGTGTCAGGGCTAAGAAACCCTGGTTTTGAGTAGAAAAGGGCCTGGAAAGAGGGGAGCCAACAAATCT
 GTCTGCTTCCTCACATTAGTCATTGGCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTC
 TATCGGGCACCAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGC
 TTGTTGAGCTTCTAAGTTTCTTTCCCTTCATTCTACCCTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTC
 AGGTTTTCTTACTCTGAATTTAGATCTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCA
 TGAAGCACACAGAGACTTTTGAAAGCAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAA
 GAATACTTTGTTTCCAGCCCCCTTCCCACACTCTTCATGTGTTAACCCTGCCTTCTGGACCTTGGAGCCACGGTGACT
 GTATTACATGTTGTTATAGAAAACCTGATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTACACCA

B7S1, a novel B7 family member that negatively regulates T cell activation
 Immunity 18 (6), 863-873 (2003)

CTGGTAATCTGTGGCGTAACAAGACCTCCAGGTGATTCTCTGTATTAGCAGCCGCTCTGTGCTCCCTGATTCCTCCAGAA
 AAGCACAAGGATTTAATCCAGATAGATATAAAATTTACCTGGGATCATTATCATTCCACATTCTTCTTTAAGAAATGTG
 CTAAAGAGCCACAGATGGGTCTTGATGAAAACAAAGGAAAAGCCATGAAGTTTCTACAGCATAATTAGCATCATCATTAT
 TCTGGCTGGAGCAATTGCACTCATCATTGGCTTTGGTATTTTCAAGGAGACACTCCATCACAGTCACTACTGTGCCTCAG
 CTGGGAACATTGGGGAGGATGGAATCCTGAGCTGCACCTTTGAACCTGACATCAAATTTCTGATATCGTGATACAATGG
 CTGAAGGAAGGTGTTTTAGGCTTGGTCCATGAGTTCAAAGAAGGCAAAGATGAGCTGTGCGAGCAGGATGAAATGTTTCAG
 AGGCCGACAGCAGTGTGTTGCTGATCAAGTGATAGTTGGCAATGCCTCTTTGCGGCTGAAAAACGTGCAACTCACAGATG
 CTGGCACCTACAAATGTTATATCATCACTTCTAAAGGCAAGGGGAATGCTAACCTTGAGTATAAACTGGAGCCTTCAGC
 ATGCCGGAAGTGAATGTGGACTATAATGCCAGCTCAGAGACCTTGCGGTGTGAGGCTCCCCGATGGTTCCCCCAGCCCAC
 AGTGGTCTGGGCATCCCAAGTTGACCAGGGAGCCAACTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGA
 ATGTGACCATGAAGGTTGTGTCTGTGCTCTACAATGTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATT
 GCCAAAGCAACAGGGATATCAAAGTGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAGCTGCTAACTCAAAGGC
 TTCTCTGTGTCTCTTCTTTCTTTGCCATCAGCTGGGCACCTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTG
 CCTCGGCCACAAAAAAGCATGCAAAGTCATTGTTACAACAGGGATCTACAGAACTATTTACCACCAGATATGACCTAGT
 TTTATATTTCTGGGAGGAAATGAATTCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAGAAACAAAAAGAAGCCAA
 AAGCAGAAGGTCCAATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAATAATTATGTGAACT
 AGACAAGTGTGTTAAGAGTGATAAGTAAATGCACGTGGAGACAAGTGCATCCCCAGATCTCAGGGACCTCCCCCTGCCT
 GTCACCTGGGGAGTGAGAGGACAGGATAGTGCATGTTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTC
 TGAGGAAGCCCCTGGAAAGTCTATCCCAACATATCCACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGA
 CGCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATGATTCACTTTTTATGATG
 CTTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACA
 GAGCAGTCGGCGACACCGATTTTTATAAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGCGGGTTTTATTTCTCAGAT
 GATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTTTCACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTT
 CTCCTTTCCATCCTGCGTGGACAGCTAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTT
 CGCCCCCATCTCCGGGGGAATGTCTGAAGACAATTTTGGTTACCTCAATGAGGGAGTGAGGAGGATACAGTGCTACTA
 CCAACTAGTGGATAGAGGCCAGGGATGCTGCTCAACCTCCTACCATGTACAGGACGTCTCCCCATTACAACCTACCCAATC
 CGAAGTGTCAACTGTGTCAGGGCTAAGAAACCCTGGTTTTGAGTAGAAAAGGGCCTGGAAAGAGGGGAGCCAACAAATCT
 GTCTGCTTCCTCACATTAGTCATTGGCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTC
 TATCGGGCACCAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGC
 TTGTTGAGCTTCTAAGTTTCTTTCCCTTCATTCTACCCTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTC
 AGGTTTTCTTACTCTGAATTTAGATCTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCA
 TGAAGCACACAGAGACTTTTGAAAGCAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAA
 GAATACTTTGTTTCCAGCCCCCTTCCCACACTCTTCATGTGTTAACCCTGCCTTCTGGACCTTGGAGCCACGGTGACT
 GTATTACATGTTGTTATAGAAAACCTGATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTACACCA

B7-H4, a molecule of the B7 family, negatively regulates T cell immunity
 Immunity 18 (6), 849-861 (2003)

CTGGTAATCTGTGGCGTAACAAGACCTCCAGGTGATTCTCTGTATTAGCAGCCGCTCTGTGCTCCCTGATTCTCCAGAA
AAGCACAAGGATTTAATCCAGATAGATATAAAATTCACCTGGGATCATTATCATTCCACATTCTTCTTTAAGAAATGTG
CTAAAGAGCCACAGATGGGTCTTGATGAAAACAAAGGAAAAGCCATGAAGTTTCTACAGCATAATTAGCATCATCATTAT
TCTGGCTGGAGCAATTGCACTCATCATTGGCTTTGGTATTTTCAAGGAGACACTCCATCACAGTCACTACTGTCCCTCAG
CTGGGAACATTGGGGAGGATGGAATCCTGAGCTGCACTTTTGAACCTGACATCAAACCTTTCTGATATCGTGATACAATGG
CTGAAGGAAGTGTTTTAGGCTTGGTCCATGAGTTCAAAGAAGGCAAAGATGAGCTGTCCGAGCAGGATGAAATGTTTCAAG
AGGCCGGACAGCAGTGTGTTGCTGATCAAGTGATAGTTGGCAATGCCTCTTTGCGGCTGAAAAACGTGCAACTCACAGATG
CTGGCACCTACAAATGTTATATCATCACTTCTAAAGGCAAGGGGAATGCTAACCTTGAGTATAAACTGGAGCCTTCAGC
ATGCCGGAAGTGAATGTGGACTATAATGCCAGCTCAGAGACCTTGCGGTGTGAGGCTCCCCGATGGTTCCCCCAGCCCAC
AGTGGTCTGGGCATCCCAAGTTGACCAGGGAGCCAACTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGA
ATGTGACCATGAAGGTTGTGTCTGTGCTCTACAATGTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATT
GCCAAAGCAACAGGGGATATCAAAGTGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAGCTGCTAACTCAAAGGC
TTCTCTGTGTCTCTTCTTTCTTTGCCATCAGCTGGGCACTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTG
CCTCGGCCACAAAAAAGCATGCAAAGTCATTGTTACAACAGGGATCTACAGAACTATTTACCACCAGATATGACCTAGT
TTTATATTTCTGGGAGGAAATGAATTCATATCTAGAAGTCTGGAGTGAGCAAAACAAGAGCAAGAAACAAAAAGAAGCCAA
AAGCAGAAGGCTCCAATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAATAATTCATGTGAACT
AGACAAGTGTGTTAAGAGTGATAAGTAAATGACCGTGAGACAAGTGCATCCCCAGATCTCAGGGACCTCCCCCTGCCT
GTCACCTGGGGAGTGAGAGGACAGGATAGTGCATGTTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTC
TGAGGAAGCCCCTGGAAAGTCTATCCCAACATATCCACATCTTATATTCACAAAATAAGCTGTAGTATGTACCCTAAGA
CGCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATGATTCACTTTTTATGATG
CTTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACA
GAGCAGTCGGCGACACCGATTTTTATAAATAAACTGAGCACCTTCTTTTTAAACAAAACAAATGCGGGTTTTATTTCTCAGAT
GATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTTTCACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTT
CTCCTTTCCATCCTGCGTGAGACAGCTAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTT
CGCCCCCATCTCCGGGGGAATGTCTGAAGACAATTTTGGTTACCTCAATGAGGGAGTGAGAGGAGATACAGTGCTACTA
CCAAGTAGTGATAGAGGCCAGGGATGCTGCTCAACCTCCTACCATGTACAGGACGTCTCCCCATTACAACCTACCCAATC
CGAAGTGCAACTGTGTGTCAGGGCTAAGAAACCTGGTTTTGAGTAGAAAAGGGCTGGAAAGAGGGGAGCCAACAAATCT
GTCTGCTTCCTCACAATTAGTCATTGGCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTC
TATCGGGCACCAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGC
TTGTTGAGCTTCTAAGTTTTCTTTCCCTTCATTCTACCCTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTC
AGGTTTTCTTACTCTGAATTTAGATCTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCA
TGAAGCACACACAGACTTTTGAAGCAAGGACAATGACTGCTTGAATTGAGGCCCTTGAGGAATGAAGCTTTGAAGGAAAA
GAATACTTTGTTTCCAGCCCCCTTCCACACTCTTCATGTGTTAACCCTGCCTTCTGGACCTTGGAGCCACGGTGACT
GTATTACATGTTGTTATAGAAAAGTATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTACACCA

[Knockdown of B7-H4/VTCN1 promotes apoptosis and autophagy of Huh7 cells by inhibiting phosphorylation of JNK]

Xi Bao Yu Fen Zi Mian Yi Xue Za Zhi 36 (7), 603-608 (2020)

GTGAGTCACCAAGGAAGGCAGCGGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
GTATTTCAAGGAGACACTCCATCACAGTCACTACTGTGCGCTCAGCTGGGAACATTGGGGAGGATGGAATCCTGAGCTGC
ACTTTTGAACCTGACATCAAACCTTTCTGATATCGTGATACAATGGCTGAAGGAAGGTGTTTTAGGCTTGGTCCATGAGTT
CAAAGAAGGCAAAGATGAGCTGTGCGAGCAGGATGAAATGTTGAGAGCCGGACAGCAGTGTGCTGATCAAGTGATAG
TTGGCAATGCCTCTTTGCGGCTGAAAAACGTCCAACCTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGAA
TGTGACCATGAAGGTTGTGTCTGTGCTCTACAATGTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATTG
CCAAAGCAACAGGGGATATCAAAGTGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAGCTGCTAACTCAAAGGCT
TCTCTGTGTGTCTCTTCTTTTCCATCAGCTGGGCACTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTGC
CTCGGCCACAAAAAAGCATGCAAAGTCATTGTTACAACAGGGATCTACAGAACTATTTACCACCAGATATGACCTAGTT

TTATATTTCTGGGAGGAAATGAATTCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAGAAACAAAAAGAAGCCAAA
 AGCAGAAGGCTCCAATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAAATAATTCATGTGAACTA
 GACAAGTGTGTTAAGAGTGATAAGTAAATGCACGTGGAGACAAGTGCATCCCCAGATCTCAGGGACCTCCCCCTGCCTG
 TCACCTGGGGAGTGAGAGGACAGGATAGTGCATGTTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTCT
 GAGGAAGCCCCTGAAAGTCTATCCCAACATATCCACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGAC
 GCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTGTAGTAATGGGTCAAATGATTCACTTTTTATGATGC
 TTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACAG
 AGCAGTCGGCGACACCGATTTTATAAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGCGGGTTTATTTCTCAGATG
 ATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTTTCACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTTC
 TCCTTTCCATCCTGCGTGGACAGCTAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTTC
 GCCCCCATCTCCGGGGGAATGTCTGAAGACAATTTGGTTACCTCAATGAGGGAGTGGAGGAGGATACAGTGCTACTAC
 CAACTAGTGGATAGAGGCCAGGGATGCTGCTCAACCTCCTACCATGTACAGGACGTCTCCCCATTACAACCTACCCAATCC
 GAAGTGTCAACTGTGTCAGGGCTAAGAAACCTGGTTTTGAGTAGAAAAGGGCCTGGAAAGAGGGGAGCCAACAAATCTG
 TCTGCTTCCTCACATTAGTCATTGGCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTCT
 ATCGGGCACCAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGCT
 TGTGAGCTTCTAAGTTTCTTTCCCTTCATTCTACCCTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTCA
 GGTTCCTTACTCTGAATTTAGATCTCCAGACCTGCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCAT
 GAAGCACACACAGACTTTTGAAAGCAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAAG
 AATACTTTGTTCCAGCCCCCTTCCACACTCTTCATGTGTTAACCACTGCCTTCCTGGACCTTGAGGCCACGGTGACTG
 TATTACATGTTGTTATAGAAAAGTGAATTTAGAGTTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTACACCA

B7-H4 is a potential prognostic biomarker of prostate cancer

Exp Mol Pathol 114, 104406 (2020)

GTGAGTCACCAAGGAAGGCAGCGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
 CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
 GTATTTTCAGGGAGACACTCCATCACAGTCACTACTGTGCCTCAGCTGGGAACATTGGGGAGGATGGAATCCTGAGCTGC
 ACTTTTGAACCTGACATCAAACCTTCTGATATCGTGATACAATGGCTGAAGGAAGGTGTTTTAGGCTTGGTCCATGAGTT
 CAAAGAAGGCAAGATGAGCTGTGCGAGCAGGATGAAATGTTGAGAGCCGGACAGCAGTGTGCTGATCAAGTGATAG
 TTGGCAATGCCTCTTTGCGGCTGAAAAACGTCCAACCTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGAA
 TGTGACCATGAAGGTTGTGTCTGTGCTCTACAATGTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATTG
 CCAAAGCAACAGGGGATATCAAAGTGACAGAATCGGAGATCAAAGGCGGAGTCACCTACAGCTGCTAAACTCAAAGGCT
 TCTCTGTGTGTCTCTTTCTTTGCCATCAGCTGGGCACTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTGC
 CTCGGCCACAAAAAGCATGCAAAGTCATTGTTACAACAGGGATCTACAGAACTATTTACCACCAGATATGACCTAGTT
 TTATATTTCTGGGAGGAAATGAATTCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAGAAACAAAAAGAAGCCAAA
 AGCAGAAGGCTCCAATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAAATAATTCATGTGAACTA
 GACAAGTGTGTTAAGAGTGATAAGTAAATGCACGTGGAGACAAGTGCATCCCCAGATCTCAGGGACCTCCCCCTGCCTG
 TCACCTGGGGAGTGAGAGGACAGGATAGTGCATGTTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTCT
 GAGGAAGCCCCTGAAAGTCTATCCCAACATATCCACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGAC
 GCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTGTAGTAATGGGTCAAATGATTCACTTTTTATGATGC
 TTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACAG
 AGCAGTCGGCGACACCGATTTTATAAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGCGGGTTTATTTCTCAGATG
 ATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTTTCACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTTC
 TCCTTTCCATCCTGCGTGGACAGCTAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTTC
 GCCCCCATCTCCGGGGGAATGTCTGAAGACAATTTGGTTACCTCAATGAGGGAGTGGAGGAGGATACAGTGCTACTAC
 CAACTAGTGGATAGAGGCCAGGGATGCTGCTCAACCTCCTACCATGTACAGGACGTCTCCCCATTACAACCTACCCAATCC
 GAAGTGTCAACTGTGTCAGGGCTAAGAAACCTGGTTTTGAGTAGAAAAGGGCCTGGAAAGAGGGGAGCCAACAAATCTG
 TCTGCTTCCTCACATTAGTCATTGGCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTCT
 ATCGGGCACCAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGCT

TGTTGAGCTTCTAAGTTTCTTTCCCTTCATTCTACCCTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTCA
GGTTTTCTTACTCTGAATTTAGATCTCCAGACCTGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCAT
GAAGCACACACAGACTTTTGAAGCAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAAG
AATACTTTGTTTCCAGCCCCCTTCCCACACTCTTCATGTGTAACTGACCTTCCCTGGACCTTGAGCCACGGTGACTG
TATTACATGTTGTTATAGAAAAGTATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAATATACATTTCCCTACACCA

B7H4 expression in tumor cells impairs CD8 T cell responses and tumor immunity
Cancer Immunol Immunother 69 (2), 163-174 (2020)

GTGAGTCACCAAGGAAGGCAGCGGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
GTATTTTCAGGGAGACACTCCATCACAGTCACTACTGTGCGCTCAGCTGGGAACATTGGGGAGGATGGAATCCTGAGCTGC
ACTTTTGAACCTGACATCAAACCTTTCTGATATCGTGATACAATGGCTGAAGGAAGGTGTTTTAGGCTTGGTCCATGAGTT
CAAAGAAGGCAAGATGAGCTGTGCGAGCAGGATGAAATGTTGAGAGGCCGGACAGCAGTGTTTGCTGATCAAGTGATAG
TTGGCAATGCCTCTTTGCGGCTGAAAAACGTCCAACCTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGAA
TGTGACCATGAAGGTTGTGTCTGTGCTCTACAATGTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATTG
CCAAAGCAACAGGGGATATCAAAGTGACAGAATCGGAGATCAAAGGCGGAGTCACTACAGCTGCTAACTCAAAGGCT
TCTCTGTGTCTCTTCTTTCTTTGCCATCAGCTGGGCACTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTGC
CTCGGCCACAAAAAGCATGCAAAGTCATTGTTACAACAGGGATCTACAGAACTATTTCAACCACCAGATATGACCTAGTT
TTATATTTCTGGGAGGAAATGAATTCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAGAAAACAAAAAGAGCCAAA
AGCAGAAGGCTCCAATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAATAATTCATGTGAACTA
GACAAGTGTGTTAAGAGTGATAAGTAAATGCACGTGGAGACAAGTGCATCCCCAGATCTCAGGGACCTCCCCCTGCCTG
TCACCTGGGGAGTGAGAGGACAGGATAGTGCATGTTCTTTGTCTCTGAATTTTAGTTATATGTGCTGTAATGTTGCTCT
GAGGAAGCCCTGGAAGTCTATCCCAACATATCCACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGAC
GCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATGATTCACCTTTTTATGATGC
TTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACAG
AGCAGTCGCGGACACCGATTTTATAAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGCGGGTTTATTTCTCAGATG
ATGTTTCATCCGTGAATGGTCCAGGAAGGACCTTTCACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTTC
TCCTTTCCATCCTGCGTGGACAGCTAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTTC
GCCCCCATCTCCGGGGGAATGTCTGAAGACAATTTTGTTTACCTCAATGAGGGAGTGGAGGAGGATACAGTGCTACTAC
CAACTAGTGGATAGAGGCCAGGGATGCTGCTCAACCTCCTACCATGTACAGGACGCTCTCCCCATTACAACCTACCCAATCC
GAAGTGTCAACTGTGTCAGGGCTAAGAAACCTGGTTTTGAGTAGAAAAGGGCCTGGAAGAGGGGAGCCAACAAATCTG
TCTGCTTCCCTCACATTAGTCATTGGCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTCT
ATCGGGCACCAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGCT
TGTTGAGCTTCTAAGTTTCTTTCCCTTCATTCTACCCTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTCA
GGTTTTCTTACTCTGAATTTAGATCTCCAGACCTGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCAT
GAAGCACACACAGACTTTTGAAGCAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAAG
AATACTTTGTTTCCAGCCCCCTTCCCACACTCTTCATGTGTAACTGACCTTCCCTGGACCTTGAGCCACGGTGACTG
TATTACATGTTGTTATAGAAAAGTATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAATATACATTTCCCTACACCA

B7-H4, a promising target for immunotherapy
Cell Immunol 347, 104008 (2020)

GTGAGTCACCAAGGAAGGCAGCGGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
GTATTTTCAGGGAGACACTCCATCACAGTCACTACTGTGCGCTCAGCTGGGAACATTGGGGAGGATGGAATCCTGAGCTGC
ACTTTTGAACCTGACATCAAACCTTTCTGATATCGTGATACAATGGCTGAAGGAAGGTGTTTTAGGCTTGGTCCATGAGTT
CAAAGAAGGCAAGATGAGCTGTGCGAGCAGGATGAAATGTTGAGAGGCCGGACAGCAGTGTTTGCTGATCAAGTGATAG
TTGGCAATGCCTCTTTGCGGCTGAAAAACGTCCAACCTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGAA
TGTGACCATGAAGGTTGTGTCTGTGCTCTACAATGTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATTG

CCAAAGCAACAGGGGATATCAAAGTGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAGCTGCTAAACTCAAAGGCT
TCTCTGTGTCTCTTCTTTTCCATCAGCTGGGCACTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTGC
CTCGGCCACAAAAAGCATGCAAAGTCATTGTTACAACAGGGATCTACAGAACTATTTACCACCAGATATGACCTAGTT
TTATATTTCTGGGAGGAAATGAATTCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAGAAACAAAAAGAAGCCAAA
AGCAGAAGGCTCCAATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAATAATTCATGTGAACTA
GACAAGTGTGTTAAGAGTGATAAGTAAATGCACGTGGAGACAAGTGCATCCCAGATCTCAGGGACCTCCCCCTGCCTG
TCACCTGGGGAGTGAGAGGACAGGATAGTGCATGTTCTTTGTCTCTGAATTTTATGTTATATGTGCTGTAATGTTGCTCT
GAGGAAGCCCCCTGAAAGTCTATCCCAACATATCCACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGAC
GCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATGATTCACTTTTTATGATGC
TTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACAG
AGCAGTCGGCGACACCGATTTTATAAATAAACTGAGCACCTTCTTTTAAACAAACAAATGCGGGTTTATTTCTCAGATG
ATGTTTCATCCGTGAATGGTCCAGGAAGGACCTTTCACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTTC
TCCTTTCCATCCTGCGTGGACAGCTAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTTC
GCCCCCATCTCCGGGGGAATGTCTGAAGACAATTTTGTTACCTCAATGAGGGAGTGGAGGAGGATACAGTGCTACTAC
CAACTAGTGGATAGAGGCCAGGGATGCTGCTCAACCTCCTACCATGTACAGGACGCTCTCCCCATTACAACCTACCCAATCC
GAAGTGTCAACTGTGTGAGGGCTAAGAAACCTGGTTTTGAGTAGAAAAGGGCCTGGAAAGAGGGGAGCCAACAAATCTG
TCTGCTTCTCAGATTAGTCATTGGCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTCT
ATCGGGCACCAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGCT
TGTTGAGCTTCAAGTTTCTTTCCCTTCATTCTACCCTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTCA
GGTTTTCTTACTCTGAATTTAGATCTCCAGACCTGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCAT
GAAGCACACACAGACTTTTGAAAGCAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAAG
AATACTTTGTTTCCAGCCCCCTTCCACACTCTTCATGTGTTAACCCTGCCTTCTTGGACCTTGAGGCCACGGTGACTG
TATTACATGTTGTTATAGAAAAGTATTTTAGAGTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTACACCA

Expression of co-inhibitory molecules B7-H4 and B7-H1 in Epstein-Barr virus
positive diffuse large B-cell lymphoma and their roles in tumor invasion
Pathol Res Pract 215 (12), 152684 (2019)

GTGAGTCACCAAGGAAGGCAGCGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
GTATTTTCAGGGAGACACTCCATCACAGTCACTACTGTGCCTCAGCTGGGAACATTGGGGAGGATGGAATCCTGAGCTGC
ACTTTTGAACCTGACATCAAACCTTTCTGATATCGTGATAACAATGGCTGAAGGAAGGTGTTTTAGGCTTGGTCCATGAGTT
CAAAGAAGGCAAGATGAGCTGTGCGAGCAGGATGAAATGTTGAGAGGCCGGACAGCAGTGTGTTGCTGATCAAGTGATAG
TTGGCAATGCCTCTTTGCGGCTGAAAAACGTCCAACCTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGAA
TGTGACCATGAAGGTTGTGTCTGTGCTCTACAATGTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATTG
CCAAAGCAACAGGGGATATCAAAGTGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAGCTGCTAAACTCAAAGGCT
TCTCTGTGTCTCTTCTTTTCCATCAGCTGGGCACTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTGC
CTCGGCCACAAAAAGCATGCAAAGTCATTGTTACAACAGGGATCTACAGAACTATTTACCACCAGATATGACCTAGTT
TTATATTTCTGGGAGGAAATGAATTCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAGAAACAAAAAGAAGCCAAA
AGCAGAAGGCTCCAATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAATAATTCATGTGAACTA
GACAAGTGTGTTAAGAGTGATAAGTAAATGCACGTGGAGACAAGTGCATCCCAGATCTCAGGGACCTCCCCCTGCCTG
TCACCTGGGGAGTGAGAGGACAGGATAGTGCATGTTCTTTGTCTCTGAATTTTATGTTATATGTGCTGTAATGTTGCTCT
GAGGAAGCCCCCTGAAAGTCTATCCCAACATATCCACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGAC
GCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATGATTCACTTTTTATGATGC
TTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACAG
AGCAGTCGGCGACACCGATTTTATAAATAAACTGAGCACCTTCTTTTAAACAAACAAATGCGGGTTTATTTCTCAGATG
ATGTTTCATCCGTGAATGGTCCAGGAAGGACCTTTCACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTTC
TCCTTTCCATCCTGCGTGGACAGCTAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTTC
GCCCCCATCTCCGGGGGAATGTCTGAAGACAATTTTGTTACCTCAATGAGGGAGTGGAGGAGGATACAGTGCTACTAC

CAACTAGTGGATAGAGGCCAGGGATGCTGCTCAACCTCCTACCATGTACAGGACGTCTCCCCATTACAACCTACCCAATCC
GAAGTGTCAACTGTGTTCAGGGCTAAGAAACCCCTGGTTTTGAGTAGAAAAGGGCCTGGAAAGAGGGGAGCCAACAAATCTG
TCTGCTTCCTCACATTAGTCATTGGCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTCT
ATCGGGCACCAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGCT
TGTTGAGCTTCTAAGTTTCTTTCCCTTCATTCTACCCTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTCA
GGTTTTCTTACTCTGAATTTAGATCTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCAT
GAAGCACACACAGACTTTTGAAGCAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAAG
AATACTTTGTTTCCAGCCCCCTTCCACACTCTTCATGTGTAAACCACTGCCTTCCTGGACCTTGAGGCCACGGTGACTG
TATTACATGTTGTTATAGAAAAGTATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTACACCA

The secreted protein discovery initiative (SPDI), a large-scale effort to
identify novel human secreted and transmembrane proteins: a bioinformatics
assessment

Genome Res 13 (10), 2265-2270 (2003)

GTGAGTCACCAAGGAAGGCAGCGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
GTATTTCCAGGGAGACACTCCATCACAGTCACTACTGTGCGCTCAGCTGGGAACATTGGGGAGGATGGAATCCTGAGCTGC
ACTTTTGAACCTGACATCAAACCTTTCTGATATCGTGATAACAATGGCTGAAGGAAGGTGTTTTAGGCTTGGTCCATGAGTT
CAAAGAAGGCAGGATGAGCTGTGCGAGCAGGATGAAATGTTGAGAGCCGGACAGCAGTGTGCTGATCAAGTGATAG
TTGGCAATGCCTCTTTGCGGCTGAAAAACGTCCAACCTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGAA
TGTGACCATGAAGGTTGTGTCTGTGCTCTACAATGTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATTG
CCAAAGCAACAGGGGATATCAAAGTGACAGAAATCGGAGATCAAAGGCGGAGTCACCTACAGCTGCTAAACTCAAAGGCT
TCTCTGTGTGTCTCTTCTTTTCCATCAGCTGGGCACTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTGC
CTCGGCCACAAAAAGCATGCAAAGTCATTGTTACAACAGGGATCTACAGAACTATTTACCACCAGATATGACCTAGTT
TTATATTTCTGGGAGGAAATGAATTCATATCTAGAAGTCTGGAGTGAGCAACAAGAGCAAGAAACAAAAAGAAGCCAAA
AGCAGAAGGCTCCAATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAATAATTCATGTGAACTA
GACAAGTGTGTTAAGAGTGATAAGTAAATGCACGTGGAGACAAGTGCATCCCCAGATCTCAGGGACCTCCCCCTGCCTG
TCACCTGGGGAGTGAGAGGACAGGATAGTGCATGTTCTTTGTCTCTGAATTTTATGTTATATGTGCTGTAATGTTGCTCT
GAGGAAGCCCCCTGAAAGTCTATCCCAACATATCCACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGAC
GCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTATGTAATGGGTCAAATGATTCACCTTTTTATGATGC
TTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACAG
AGCAGTCGCGGACACCGATTTTATAAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGCGGGTTTATTTCTCAGATG
ATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTTTCACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTTC
TCCTTTCCATCCTGCGTGGACAGCTAAGACCTCAGTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTTC
GCCCCCATCTCCGGGGGAATGTCTGAAGACAATTTTGTTACCTCAATGAGGGAGTGGAGGAGGATACAGTGCTACTAC
CAACTAGTGGATAGAGGCCAGGGATGCTGCTCAACCTCCTACCATGTACAGGACGTCTCCCCATTACAACCTACCCAATCC
GAAGTGTCAACTGTGTTCAGGGCTAAGAAACCCCTGGTTTTGAGTAGAAAAGGGCCTGGAAAGAGGGGAGCCAACAAATCTG
TCTGCTTCCTCACATTAGTCATTGGCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTCT
ATCGGGCACCAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGCT
TGTTGAGCTTCTAAGTTTCTTTCCCTTCATTCTACCCTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTCA
GGTTTTCTTACTCTGAATTTAGATCTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCAT
GAAGCACACACAGACTTTTGAAGCAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAAG
AATACTTTGTTTCCAGCCCCCTTCCACACTCTTCATGTGTAAACCACTGCCTTCCTGGACCTTGAGGCCACGGTGACTG
TATTACATGTTGTTATAGAAAAGTATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTACACCA

B7x: a widely expressed B7 family member that inhibits T cell activation

Proc Natl Acad Sci U S A 100 (18), 10388-10392 (2003)

GTGAGTCACCAAGGAAGGCAGCGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC

CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
 GTATTTTCAGGGAGACACTCCATCACAGTCACTACTGTGCGCTCAGCTGGGAACATTGGGGAGGATGGAATCCTGAGCTGC
 ACTTTTGAACCTGACATCAAACCTTTCTGATATCGTGATAACAATGGCTGAAGGAAGGTGTTTTAGGCTTGGTCCATGAGTT
 CAAAGAAGGCAAAGATGAGCTGTGCGGAGCAGGATGAAATGTTTCAGAGGCCGGACAGCAGTGTGCTGATCAAGTGATAG
 TTGGCAATGCCTCTTTGCGGCTGAAAAACGTCCAACCTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGAA
 TGTGACCATGAAGTTGTGTCTGTGCTCTACAATGTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATTG
 CCAAAGCAACAGGGGATATCAAAGTGACAGAATCGGAGATCAAAGGCCGGAGTCACCTACAGCTGCTAAACTCAAAGGCT
 TCTCTGTGTGTCTCTTCTTTCTTTGCCATCAGCTGGGCACTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTGC
 CTCGGCCACAAAAAGCATGCAAAGTCATTGTTACAACAGGGATCTACAGAACTATTTACCACCAGATATGACCTAGTT
 TTATATTTCTGGGAGGAAATGAATTCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAGAAACAAAAAGAAGCCAAA
 AGCAGAAGGCTCCAATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAATAATTCATGTGAACTA
 GACAAGTGTGTTAAGAGTGATAAGTAAATGCACGTGGAGACAAGTGCATCCCCAGATCTCAGGGACCTCCCCCTGCCTG
 TCACCTGGGGAGTGAGAGGACAGGATAGTGCATGTTCTTTGTCTCTGAATTTTAGTTATATGTGCTGTAATGTTGCTCT
 GAGGAAGCCCCCTGAAAAGTCTATCCCAACATATCCACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGAC
 GCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATGATTCACCTTTTTATGATGC
 TTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACAG
 AGCAGTCGCGGACACCGATTTTATAAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGCGGGTTTATTTCTCAGATG
 ATGTTTCATCCGTGAATGGTCCAGGAAGGACCTTTCACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTTC
 TCCTTTCCATCCTGCGTGGACAGCTAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTTC
 GCCCCCATCTCCGGGGGAATGTCTGAAGACAATTTTGTTACCTCAATGAGGGAGTGGAGGAGGATACAGTGCTACTAC
 CAACTAGTGGATAGAGGCCAGGGATGCTGCTCAACCTCCTACCATGTACAGGACGTCTCCCCATTACAACCTACCCAATCC
 GAAGTGTCAACTGTGTGTCAGGGCTAAGAAACCTGGTTTTGAGTAGAAAAGGGCCTGGAAAGAGGGGAGCCAACAAATCTG
 TCTGCTTCCCTCACATTAGTCATTGGCAAATAAGCATTCTGTCTCTTTGGCTGTGCTCAGCACAGAGAGCCAGAATCT
 ATCGGGCACCAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGCT
 TGTTGAGCTTCTAAGTTTCTTTCCCTTCATTCTACCCTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTCA
 GGTTTTCTTACTCTGAATTTAGATCTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCAT
 GAAGCACACAGACTTTTGAAAGCAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAAG
 AATACTTTGTTTCCAGCCCCCTTCCCACACTCTTCATGTGTTAACCCTGCCTTCCTGGACCTTGAGCCACGGTGACTG
 TATTACATGTTGTTATAGAAAAGTATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAATATACATTTTCTACACCA

BTLA is a lymphocyte inhibitory receptor with similarities to CTLA-4 and PD-1
 Nat Immunol 4 (7), 670-679 (2003)

GTGAGTCACCAAGGAAGGCAGCGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
 CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
 GTATTTTCAGGGAGACACTCCATCACAGTCACTACTGTGCGCTCAGCTGGGAACATTGGGGAGGATGGAATCCTGAGCTGC
 ACTTTTGAACCTGACATCAAACCTTTCTGATATCGTGATAACAATGGCTGAAGGAAGGTGTTTTAGGCTTGGTCCATGAGTT
 CAAAGAAGGCAAAGATGAGCTGTGCGGAGCAGGATGAAATGTTTCAGAGGCCGGACAGCAGTGTGCTGATCAAGTGATAG
 TTGGCAATGCCTCTTTGCGGCTGAAAAACGTCCAACCTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGAA
 TGTGACCATGAAGTTGTGTCTGTGCTCTACAATGTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATTG
 CCAAAGCAACAGGGGATATCAAAGTGACAGAATCGGAGATCAAAGGCCGGAGTCACCTACAGCTGCTAAACTCAAAGGCT
 TCTCTGTGTGTCTCTTCTTTCTTTGCCATCAGCTGGGCACTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTGC
 CTCGGCCACAAAAAGCATGCAAAGTCATTGTTACAACAGGGATCTACAGAACTATTTACCACCAGATATGACCTAGTT
 TTATATTTCTGGGAGGAAATGAATTCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAGAAACAAAAAGAAGCCAAA
 AGCAGAAGGCTCCAATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAATAATTCATGTGAACTA
 GACAAGTGTGTTAAGAGTGATAAGTAAATGCACGTGGAGACAAGTGCATCCCCAGATCTCAGGGACCTCCCCCTGCCTG
 TCACCTGGGGAGTGAGAGGACAGGATAGTGCATGTTCTTTGTCTCTGAATTTTAGTTATATGTGCTGTAATGTTGCTCT
 GAGGAAGCCCCCTGAAAAGTCTATCCCAACATATCCACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGAC
 GCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATGATTCACCTTTTTATGATGC

TTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACAG
AGCAGTCGCGGACACCGATTTTATAAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGCGGGTTTATTTCTCAGATG
ATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTTTCACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTTC
TCCTTTCCATCCTGCGTGGACAGCTAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTTC
GCCCCCATCTCCGGGGGAATGTCTGAAGACAATTTTGTTACCTCAATGAGGGAGTGGAGGAGGATACAGTGCTACTAC
CAACTAGTGGATAGAGGCCAGGGATGCTGCTCAACCTCCTACCATGTACAGGACGTCTCCCCATTACAACCTACCCAATCC
GAAGTGTCAACTGTGTCAGGGCTAAGAAACCTGGTTTTGAGTAGAAAAGGGCCTGAAAGAGGGGAGCCAACAAATCTG
TCTGCTTCCCTCACATTAGTCATTGGCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTCT
ATCGGGCACCAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGCT
TGTTGAGCTTCTAAGTTTCTTTCCCTTCATTCTACCCTGCAAGCCAAGTTCTGTAAGAGAAAATGCCTGAGTTCTAGCTCA
GGTTTTCTTACTCTGAATTTAGATCTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCAT
GAAGCACACACAGACTTTTGAAAGCAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAAG
AATACTTTGTTTCCAGCCCCCTTCCCACACTCTTCATGTGTTAACCCTGCCTTCCTGGACCTTGAGGCCACGGTGACTG
TATTACATGTTGTTATAGAAAAGTATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAATATACATTTTCTACACCA

B7S1, a novel B7 family member that negatively regulates T cell activation
Immunity 18 (6), 863-873 (2003)

GTGAGTCACCAAGGAAGGCAGCGGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCTTGGCTTTG
GTATTTTCAGGGAGACACTCCATCACAGTCACTACTGTGCCTCAGCTGGGAACATTGGGGAGGATGGAATCCTGAGCTGC
ACTTTTGAACCTGACATCAAACTTTCTGATATCGTGATAACAATGGCTGAAGGAAGGTGTTTTAGGCTTGGTCCATGAGTT
CAAAGAAGGCAAGATGAGCTGTGCGAGCAGGATGAAATGTTGAGAGGCCGGACAGCAGTGTGCTGATCAAGTGATAG
TTGGCAATGCCTCTTTGCGGCTGAAAAACGTCCAACCTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGAA
TGTGACCATGAAGGTTGTGTCTGTGCTCTACAATGTTACGATCAACAACATACTCCTGTATGATTGAAAATGACATTG
CCAAAGCAACAGGGGATATCAAAGTGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAGCTGCTAAACTCAAAGGCT
TCTCTGTGTCTCTTCTTTTCTTTGCCATCAGCTGGGCACTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTGC
CTCGGCCACAAAAAGCATGCAAAGTCATTGTTACAACAGGGATCTACAGAACTATTTACCACCAGATATGACCTAGTT
TTATATTTCTGGGAGGAAATGAATTCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAGAAAACAAAAAGGCCAAA
AGCAGAAGGCTCCAATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAAATAATTCATGTGAAC
GACAAGTGTGTTAAGAGTGATAAGTAAATGCACGTGGAGACAAGTGCATCCCAGATCTCAGGGACCTCCCCCTGCCTG
TCACCTGGGGAGTGAGAGGACAGGATAGTGCATGTTCTTTGTCTCTGAATTTTGTATATGTGCTGTAATGTTGCTCT
GAGGAAGCCCCTGAAAGTCTATCCCAACATATCCACATCTTATATCCACAAATTAAGCTGTAGTATGTACCCTAAGAC
GCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTGTAAATGGGTCAAATGATTCACCTTTTTATGATGC
TTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACAG
AGCAGTCGCGGACACCGATTTTATAAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGCGGGTTTATTTCTCAGATG
ATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTTTCACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTTC
TCCTTTCCATCCTGCGTGGACAGCTAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTTC
GCCCCCATCTCCGGGGGAATGTCTGAAGACAATTTTGTTACCTCAATGAGGGAGTGGAGGAGGATACAGTGCTACTAC
CAACTAGTGGATAGAGGCCAGGGATGCTGCTCAACCTCCTACCATGTACAGGACGTCTCCCCATTACAACCTACCCAATCC
GAAGTGTCAACTGTGTCAGGGCTAAGAAACCTGGTTTTGAGTAGAAAAGGGCCTGAAAGAGGGGAGCCAACAAATCTG
TCTGCTTCCCTCACATTAGTCATTGGCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTCT
ATCGGGCACCAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGCT
TGTTGAGCTTCTAAGTTTCTTTCCCTTCATTCTACCCTGCAAGCCAAGTTCTGTAAGAGAAAATGCCTGAGTTCTAGCTCA
GGTTTTCTTACTCTGAATTTAGATCTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCAT
GAAGCACACACAGACTTTTGAAAGCAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAAG
AATACTTTGTTTCCAGCCCCCTTCCCACACTCTTCATGTGTTAACCCTGCCTTCCTGGACCTTGAGGCCACGGTGACTG
TATTACATGTTGTTATAGAAAAGTATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAATATACATTTTCTACACCA

B7-H4, a molecule of the B7 family, negatively regulates T cell immunity
Immunity 18 (6), 849-861 (2003)

GTGAGTCACCAAGGAAGGCAGCGGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
GTATTTTCAGGGAGACACTCCATCACAGTCACTACTGTGCGCTCAGCTGGGAACATTGGGGAGGATGGAATCCTGAGCTGC
ACTTTTGAACCTGACATCAAACCTTTCTGATATCGTGATACAATGGCTGAAGGAAGGTGTTTTAGGCTTGGTCCATGAGTT
CAAAGAAGGCAAAGATGAGCTGTGCGAGCAGGATGAAATGTTGAGAGGCCGGACAGCAGTGTTTGCTGATCAAGTGATAG
TTGGCAATGCCTCTTTGCGGCTGAAAAACGTCCAACCTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGAA
TGTGACCATGAAGGTTGTGTCTGTGCTCTACAATGTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATTG
CCAAAGCAACAGGGGATATCAAAGTGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAGCTGCTAAACTCAAAGGCT
TCTCTGTGTGTCTCTTTCTTTGCCATCAGCTGGGCACTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTGC
CTCGGCCACAAAAAGCATGCAAAGTCATTGTTACAACAGGGATCTACAGAACTATTTACCACCAGATATGACCTAGTT
TTATATTTCTGGGAGGAAATGAATTCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAGAAACAAAAAGAAGCCAAA
AGCAGAAGGCTCCAATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAATAATTCATGTGAACTA
GACAAGTGTGTTAAGAGTGATAAGTAAATGCACGTGGAGACAAGTGCATCCCAGATCTCAGGGACCTCCCCCTGCCTG
TCACCTGGGGAGTGAGAGGACAGGATAGTGCATGTTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTCT
GAGGAAGCCCCTGAAAGTCTATCCCAACATATCCACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGAC
GCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTGTAAATGGGTCAAATGATTCACCTTTTTATGATGC
TTCCAAAGTGCTTGGCTTCTCTTCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACAG
AGCAGTCGCGGACACCGATTTTATAAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGCGGGTTTATTTCTCAGATG
ATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTTTCACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTTC
TCCTTTCCATCCTGCGTGGACAGCTAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTTC
GCCCCCATCTCCGGGGGAATGTCTGAAGACAATTTTGTTACCTCAATGAGGGAGTGAGGAGGATACAGTGCTACTAC
CAACTAGTGGATAGAGGCCAGGGATGCTGCTCAACCTCCTACCATGTACAGGACGCTCTCCCATTAACAACCTACCAATCC
GAAGTGTCAACTGTGTGAGGGCTAAGAAACCTGGTTTTGAGTAGAAAAGGGCCTGGAAAGAGGGGAGCCAACAAATCTG
TCTGCTTCCTCACATTAGTCATTGGCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTCT
ATCGGGCACCAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGCT
TGTTGAGCTTCTAAGTTTCTTTCCCTTCATTCTACCCTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTCA
GGTTTTCTTACTCTGAATTTAGATCTCCAGACCTGCGCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCAT
GAAGCACACACAGACTTTTTGAAAGCAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAAG
AATACTTTGTTTCAGCCCCCTTCCACACTCTTCATGTGTTAACCCTGCTTCTGACCTTGAGCCACGGTGACTG
TATTACATGTTGTTATAGAAAAGTATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTACACCA

[Knockdown of B7-H4/VTCN1 promotes apoptosis and autophagy of Huh7 cells by
inhibiting phosphorylation of JNK]

Xi Bao Yu Fen Zi Mian Yi Xue Za Zhi 36 (7), 603-608 (2020)

GTGAGTCACCAAGGAAGGCAGCGGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
GTATTTTCAGAGTCTCTGTCTGGCTTTTCAGCAATGAAGGGTTTGTTGTAGAAGTTCCAAGGCTTCCCTTAGCATTGATC
TTTGCTTCCCTGAACTGCAGGGAGACACTCCATCACAGTCACTACTGTGCGCTCAGCTGGGAACATTGGGGAGGATGGAAT
CCTGAGCTGCACTTTTGAACCTGACATCAAACCTTTCTGATATCGTGATACAATGGCTGAAGGAAGGTGTTTTAGGCTTGG
TCCATGAGTTCAAAGAAGGCAAAGATGAGCTGTGCGAGCAGGATGAAATGTTGAGAGGCCGGACAGCAGTGTTTGCTGAT
CAAGTGATAGTTGGCAATGCCTCTTTGCGGCTGAAAAACGTGCAACTCACAGATGCTGGCACCTACAAATGTTATATCAT
CACTTCTAAAGGCAAGGGGAATGCTAACCTTGAGTATAAACTGGAGCCTTCAGCATGCCGGAAGTGAATGTGGACTATA
ATGCCAGCTCAGAGACCTTGCGGTGTGAGGCTCCCCGATGGTTCCCCCAGCCCACAGTGGTCTGGGCATCCCAAGTTGAC
CAGGGAGCCAACTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGAATGTGACCATGAAGGTTGTGTCTGT
GCTCTACAATGTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATTGCCAAAGCAACAGGGGATATCAAAG
TGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAGCTGCTAAACTCAAAGGCTTCTCTGTGTGTCTCTCTTTCTTT

GCCATCAGCTGGGCACTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTGCCTCGGCCACAAAAAGCATGCAAA
 GTCATTGTTACAACAGGGATCTACAGAATAATTTACCACCAGATATGACCTAGTTTTATATTTCTGGGAGGAAATGAAT
 TCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAGAAACAAAAAGAAGCCAAAAGCAGAAGGCTCCAATATGAACAA
 GATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAAATAATTCATGTGAACTAGACAAGTGTGTTAAGAGTGATAAG
 TAAAATGCACGTGGAGACAAGTGCATCCCCAGATCTCAGGGACCTCCCCCTGCCTGTACCTGGGGAGTGAGAGGACAGG
 ATAGTGCATGTTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTCTGAGGAAGCCCCTGGAAAGTCTATC
 CCAACATATCCACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGACGCTGCTAATTGACTGCCACTTCGC
 AACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATGATTCACCTTTTTATGATGCTTCCAAAGGTGCCTTGGCTTCTCT
 TCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACAGAGCAGTCGGCGACACCGATTTTAT
 AAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGCGGGTTTTATTTCTCAGATGATGTTTCATCCGTGAATGGTCCAGG
 GAAGGACCTTTACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGGACAGC
 TAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTTGCCCCCATCTCCGGGGGAATGTC
 TGAAGACAATTTTGGTTACCTCAATGAGGGAGTGAGGAGGATACAGTGCTACTACCAACTAGTGGATAGAGGCCAGGGA
 TGCTGCTCAACCTCCTACCATGTACAGGACGTCTCCCCATTACAACCTACCCAATCCGAAGTGTCAACTGTGTCAGGGCTA
 AGAAACCCTGGTTTTGAGTAGAAAAGGGCCTGGAAAGAGGGGAGCCAACAAATCTGTCTGCTTCTCACATTAGTCATTG
 GCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTCTATCGGGCACCAGGATAACATCTCT
 CAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGCTTGTTGAGCTTCTAAGTTTCTTTCC
 CTTTATTCTACCCTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTCAGGTTTTCTTACTCTGAATTTAGAT
 CTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCATGAAGCACACACAGACTTTTGAAAG
 CAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAAGAATACTTTGTTTCCAGCCCCCTC
 CCACACTCTTCATGTGTTAACCCTGCCTTCTCGACCTTGGAGCCACGGTACTGTATTACATGTTGTTATAGAAAAT
 GATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTACACCA

B7-H4 is a potential prognostic biomarker of prostate cancer
 Exp Mol Pathol 114, 104406 (2020)

GTGAGTCACCAAGGAAGGCAGCGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
 CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCTTGGCTTTG
 GTATTTTCAAGTCTCTGTCTGGCTTTCAGCAATGAAGGGTTTGGTTGTAGAAGTTCCAAGGCTTCCCTTAGCATTGATC
 TTTGCTTCCCTGAACTGCAGGGAGACACTCCATCAGAGTCACTACTGTGCTCAGCTGGGAACATTGGGGAGGATGGAAT
 CCTGAGCTGCACCTTTGAACCTGACATCAAACCTTCTGATATCGTGATAACAATGGCTGAAGGAAGGTGTTTTAGGCTTGG
 TCCATGAGTTCAAAGAAGGCAAAGATGAGCTGTCGGAGCAGGATGAAATGTTTCAAGGCGGACAGCAGTGTGTTGCTGAT
 CAAGTGATAGTTGGCAATGCCTCTTTGCGGCTGAAAAACGTGCAACTCACAGATGCTGGCACCTACAAATGTTATATCAT
 CACTTCTAAAGGCAAGGGGAATGCTAACCTTGAGTATAAACTGGAGCCTTCAAGCATGCCGGAAGTGAATGTGACTATA
 ATGCCAGCTCAGAGACCTTGGCGTGTGAGGCTCCCCGATGGTTCCCCCAGCCACAGTGGTCTGGGCATCCCAAGTTGAC
 CAGGGAGCCAACTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGAATGTGACCATGAAGTTGTGTCTGT
 GCTCTACAATGTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATTGCCAAAGCAACAGGGGATATCAAAG
 TGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAGCTGCTAAACTCAAAGGCTTCTCTGTGTGTCTCTTCTTTCTTT
 GCCATCAGCTGGGCACTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTGCCTCGGCCACAAAAAGCATGCAAA
 GTCATTGTTACAACAGGGATCTACAGAATAATTTACCACCAGATATGACCTAGTTTTATATTTCTGGGAGGAAATGAAT
 TCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAGAAACAAAAAGAAGCCAAAAGCAGAAGGCTCCAATATGAACAA
 GATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAAATAATTCATGTGAACTAGACAAGTGTGTTAAGAGTGATAAG
 TAAAATGCACGTGGAGACAAGTGCATCCCCAGATCTCAGGGACCTCCCCCTGCCTGTACCTGGGGAGTGAGAGGACAGG
 ATAGTGCATGTTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTCTGAGGAAGCCCCTGGAAAGTCTATC
 CCAACATATCCACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGACGCTGCTAATTGACTGCCACTTCGC
 AACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATGATTCACCTTTTTATGATGCTTCCAAAGGTGCCTTGGCTTCTCT
 TCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACAGAGCAGTCGGCGACACCGATTTTAT
 AAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGCGGGTTTTATTTCTCAGATGATGTTTCATCCGTGAATGGTCCAGG
 GAAGGACCTTTACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGGACAGC

TAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTTGCCCCCATCTCCGGGGGAATGTC
TGAAGACAATTTTGGTTACCTCAATGAGGGAGTGGAGGAGGATACAGTGCTACTACCAACTAGTGGATAGAGGCCAGGGA
TGCTGCTCAACCTCCTACCATGTACAGGACGTCTCCCCATTACAACCTACCAATCCGAAGTGTCAACTGTGTCAGGGCTA
AGAAACCCTGGTTTTGAGTAGAAAAGGGCCTGGAAAGAGGGGAGCCAACAAATCTGTCTGCTTCCTCACATTAGTCATTG
GCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCCTCAGCACAGAGAGCCAGAACTCTATCGGGCACCAGGATAACATCTCT
CAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGCTTGTTGAGCTTCTAAGTTTCTTTCC
CTTCATTCTACCCTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTCAGGTTTTCTTACTCTGAATTTAGAT
CTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCATGAAGCACACACAGACTTTTTGAAAG
CAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAAGAATACTTTGTTTCCAGCCCCCTTC
CCACACTCTTCATGTGTTAACCCTGCCTTCCTGGACCTTGAGGCCACGGTGACTGTATTACATGTTGTTATAGAAAAC
GATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTACACCA

B7H4 expression in tumor cells impairs CD8 T cell responses and tumor immunity
Cancer Immunol Immunother 69 (2), 163-174 (2020)

GTGAGTCACCAAGGAAGGCAGCGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
GTATTTCAAGTCTCTGTCTGGCTTTCAGCAATGAAGGGTTTGTTGTAGAAGTTCCAAGGCTTCCCTTAGCATTGATC
TTTGCTTCCTGAACTGCAGGGAGACACTCCATCACAGTCACTACTGTGCGCTCAGCTGGGAACATTGGGGAGGATGGAAT
CCTGAGCTGCACTTTTGAACCTGACATCAAACCTTCTGATATCGTGATACAATGGCTGAAGGAAGGTGTTTTAGGCTTGG
TCCATGAGTTCAAAGAAGGCAAAGATGAGCTGTCCGAGCAGGATGAAATGTTCAAGGCCGACAGCAGTGTGCTGAT
CAAGTGATAGTTGGCAATGCCTCTTTGCGGCTGAAAAACGTGCAACTCACAGATGCTGGCACCTACAAATGTTATATCAT
CACTTCTAAAGGCAAGGGGAATGCTAACCTTGAGTATAAACTGGAGCCTTCAGCATGCCGGAAGTGAATGTGGACTATA
ATGCCAGCTCAGAGACCTTGCGGTGTGAGGCTCCCGATGGTTCCCCAGCCACAGTGGTCTGGGCATCCCAAGTTGAC
CAGGGAGCCAACTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGAATGTGACCATGAAGGTTGTGTCTGT
GCTCTACAATGTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATTGCCAAAGCAACAGGGGATATCAAAG
TGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAGCTGCTAAACTCAAAGGCTTCTCTGTGTGTCTCTTCTTTCTTT
GCCATCAGCTGGGCACTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTGCCTCGGCCACAAAAAGCATGCAAAA
GTCATTGTTACAACAGGGATCTACAGAACTATTTACCACCAGATATGACCTAGTTTTATATTTCTGGGAGGAAATGAAT
TCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAGAAAACAAAAAGAAGCCAAAAGCAGAAGGCTCCAATATGAACAA
GATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAATAATTCATGTGAACTAGACAAGTGTGTTAAGAGTGATAAG
TAAAATGCACGTGGAGACAAGTGCATCCCCAGATCTCAGGGACCTCCCCCTGCCTGTACCTGGGGAGTGAGAGGACAGG
ATAGTGCATGTTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTCTGAGGAAGCCCCTGGAAAGTCTATC
CCAACATATCCACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGACGCTGCTAATTGACTGCCACTTCGC
AACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATGATTCACTTTTTATGATGCTTCCAAAGGTGCCTTGGCTTCTCT
TCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACAGAGCAGTCGGCGACACCGATTTTAT
AAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGCGGGTTTTATTTCTCAGATGATGTTTCATCCGTGAATGGTCCAGG
GAAGGACCTTTACCTTGTCTATATGGCATTATGTCATCAACAAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGGACAGC
TAAGACCTCAGTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTTGCCCCCATCTCCGGGGGAATGTC
TGAAGACAATTTTGGTTACCTCAATGAGGGAGTGGAGGAGGATACAGTGCTACTACCAACTAGTGGATAGAGGCCAGGGA
TGCTGCTCAACCTCCTACCATGTACAGGACGTCTCCCCATTACAACCTACCAATCCGAAGTGTCAACTGTGTCAGGGCTA
AGAAACCCTGGTTTTGAGTAGAAAAGGGCCTGGAAAGAGGGGAGCCAACAAATCTGTCTGCTTCCTCACATTAGTCATTG
GCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCCTCAGCACAGAGAGCCAGAACTCTATCGGGCACCAGGATAACATCTCT
CAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGCTTGTTGAGCTTCTAAGTTTCTTTCC
CTTCATTCTACCCTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTCAGGTTTTCTTACTCTGAATTTAGAT
CTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCATGAAGCACACACAGACTTTTTGAAAG
CAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAAGAATACTTTGTTTCCAGCCCCCTTC
CCACACTCTTCATGTGTTAACCCTGCCTTCCTGGACCTTGAGGCCACGGTGACTGTATTACATGTTGTTATAGAAAAC
GATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTACACCA

B7-H4, a promising target for immunotherapy

Cell Immunol 347, 104008 (2020)

GTGAGTCACCAAGGAAGGCAGCGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
GTATTTTCAGAAAGTCTCTGTCTGGCTTTTCAGCAATGAAGGGTTTGGTTGTAGAAGTTCCAAGGCTTCCCTTAGCATTGATC
TTTGCTTCCTGAACTGCAGGGAGACACTCCATCACAGTCACTACTGTGCGCTCAGCTGGGAACATTGGGGAGGATGGAAT
CCTGAGCTGCACTTTTGAACCTGACATCAAACCTTCTGATATCGTGATACAATGGCTGAAGGAAGGTGTTTTAGGCTTGG
TCCATGAGTTCAAAGAAGGCAAAGATGAGCTGTCGGAGCAGGATGAAATGTTTCAGAGGCCGGACAGCAGTGTGCTGAT
CAAGTGATAGTTGGCAATGCCTCTTTGCGGCTGAAAAACGTGCAACTCACAGATGCTGGCACCTACAAATGTTATATCAT
CACTTCTAAAGGCAAGGGGAATGCTAACCTTGAGTATAAACTGGAGCCTTCAGCATGCCGGAAGTGAATGTGGACTATA
ATGCCAGCTCAGAGACCTTGCGGTGTGAGGCTCCCCGATGGTTCCCCCAGCCACAGTGGTCTGGGCATCCCAAGTTGAC
CAGGGAGCCAACTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGAATGTGACCATGAAGTTGTGTCTGT
GCTCTACAATGTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATTGCCAAAGCAACAGGGGATATCAAAG
TGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAGCTGCTAACTCAAAGGCTTCTCTGTGTGTCTCTTCTTTCTTT
GCCATCAGCTGGGCACCTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTGCCTCGGCCACAAAAAGCATGCAAAA
GTCATTGTTACAACAGGGATCTACAGAACTATTTACCACCAGATATGACCTAGTTTTATATTTCTGGGAGGAAATGAAT
TCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAGAAACAAAAAGAAGCCAAAAGCAGAAGGCTCCAATATGAACAA
GATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAATAATTCATGTGAACTAGACAAGTGTGTTAAGAGTGATAAG
TAAAATGCACGTGGAGACAAGTGATCCCCAGATCTCAGGGACCTCCCCCTGCCTGTACCTGGGGAGTGAGAGGACAGG
ATAGTGATGTTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTCTGAGGAAGCCCCTGGAAAGTCTATC
CCAACATATCCACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGACGCTGCTAATTGACTGCCACTTCGC
AACTCAGGGGCGGCTGCATTTTATAGTAATGGGTCAAATGATTCACTTTTTATGATGCTTCCAAAGGTGCCTTGGCTTCTCT
TCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACAGAGCAGTCGGCGACACCGATTTTAT
AAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGCGGGTTTATTTCTCAGATGATGTTTCATCCGTGAATGTTCCAGG
GAAGGACCTTTCACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGGACAGC
TAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTTGCCCCCATCTCCGGGGGAATGTC
TGAAGACAATTTTGGTTACCTCAATGAGGGAGTGAGGAGGATACAGTGCTACTACCAACTAGTGAGTAGAGGCCAGGGA
TGCTGCTCAACCTCCTACCATGTACAGGACGTCTCCCCATTACAACCTACCCAATCCGAAGTGTCAACTGTGTGAGGGCTA
AGAAACCCTGGTTTTGAGTAGAAAAGGGCCTGAAAAGAGGGGAGCCAACAAATCTGTCTGCTTCTCACATTAGTCATTG
GCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTCTATCGGGCACCAGGATAACATCTCT
CAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGCTTGTGAGCTTCTAAGTTTCTTTCC
CTTCATTCTACCTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTCAGGTTTTCTTACTCTGAATTTAGAT
CTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCATGAAGCACACACAGACTTTTGAAAG
CAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAAGAATACTTTGTTTCCAGCCCCCTTC
CCACACTCTTCATGTGTTAACCCTGCCTTCTCGGACCTTGGAGCCACGGTACTGTATTACATGTTGTTATAGAAAACT
GATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTACACCA

Expression of co-inhibitory molecules B7-H4 and B7-H1 in Epstein-Barr virus
positive diffuse large B-cell lymphoma and their roles in tumor invasion

Pathol Res Pract 215 (12), 152684 (2019)

GTGAGTCACCAAGGAAGGCAGCGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
GTATTTTCAGAAAGTCTCTGTCTGGCTTTTCAGCAATGAAGGGTTTGGTTGTAGAAGTTCCAAGGCTTCCCTTAGCATTGATC
TTTGCTTCCTGAACTGCAGGGAGACACTCCATCACAGTCACTACTGTGCGCTCAGCTGGGAACATTGGGGAGGATGGAAT
CCTGAGCTGCACTTTTGAACCTGACATCAAACCTTCTGATATCGTGATACAATGGCTGAAGGAAGGTGTTTTAGGCTTGG
TCCATGAGTTCAAAGAAGGCAAAGATGAGCTGTCGGAGCAGGATGAAATGTTTCAGAGGCCGGACAGCAGTGTGCTGAT
CAAGTGATAGTTGGCAATGCCTCTTTGCGGCTGAAAAACGTGCAACTCACAGATGCTGGCACCTACAAATGTTATATCAT

CACTTCTAAAGGCAAGGGGAATGCTAACCTTGAGTATAAACTGGAGCCTTCAGCATGCCGGAAGTGAATGTGGACTATA
 ATGCCAGCTCAGAGACCTTGCGGTGTGAGGCTCCCCGATGGTTCCCCCAGCCCACAGTGGTCTGGGCATCCCAAGTTGAC
 CAGGGAGCCAACTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGAATGTGACCATGAAGTTGTGTCTGT
 GCTCTACAATGTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATTGCCAAAGCAACAGGGGATATCAAAG
 TGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAGCTGCTAAACTCAAAGGCTTCTCTGTGTGTCTCTTCTTTCTTT
 GCCATCAGCTGGGCACTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTGCCTCGGCCACAAAAAGCATGCAAA
 GTCATTGTTACAACAGGGATCTACAGAACTATTTACCACCAGATATGACCTAGTTTATATTTCTGGGAGGAAATGAAT
 TCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAGAAACAAAAAGAAGCCAAAAAGCAGAAGGCTCCAATATGAACAA
 GATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAAATAATTCATGTGAACTAGACAAGTGTGTTAAGAGTGATAAG
 TAAAATGCACGTGGAGACAAGTGCATCCCCAGATCTCAGGGACCTCCCCCTGCCTGTACCTGGGGAGTGAGAGGACAGG
 ATAGTGCATGTTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTCTGAGGAAGCCCCTGGAAAGTCTATC
 CCAACATATCCACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGACGCTGCTAATTGACTGCCACTTCGC
 AACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATGATTCACTTTTTATGATGCTTCCAAAGGTGCCTTGGCTTCTCT
 TCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACAGAGCAGTCGGCGACACCGATTTTAT
 AAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGCGGGTTTTATTTCTCAGATGATGTTTCATCCGTGAATGGTCCAGG
 GAAGGACCTTTACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGGACAGC
 TAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTTCGCCCCCATCTCCGGGGGAATGTC
 TGAAGACAATTTTGGTTACCTCAATGAGGGAGTGGAGGAGGATACAGTGCTACTACCAACTAGTGGATAGAGGCCAGGGA
 TGCTGCTCAACCTCCTACCATGTACAGGACGTCTCCCCATTACAACTACCCAATCCGAAGTGTCAACTGTGTCAAGGCTA
 AGAAACCTGGTTTTGAGTAGAAAAGGGCTGGAAAAGAGGGGAGCCAACAAATCTGTCTGCTTCTCACATTAGTCATTG
 GCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTCTATCGGGCACCAGGATAACATCTCT
 CAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGCTTGTTGAGCTTCTAAGTTTCTTTCC
 CTTTATTCTACCCTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTCAGGTTTTCTTACTCTGAATTTAGAT
 CTCCAGACCTGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCATGAAGCACACACAGACTTTTGAAAG
 CAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAAGAATACTTTGTTTCCAGCCCCCTTC
 CCACACTCTTCATGTGTTAACCCTGCCTTCTGGACCTTGGAGCCACGGTGACTGTATTACATGTTGTTATAGAAAACT
 GATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAATATACATTTCCCTACACCA

The secreted protein discovery initiative (SPDI), a large-scale effort to
 identify novel human secreted and transmembrane proteins: a bioinformatics
 assessment

Genome Res 13 (10), 2265-2270 (2003)

GTGAGTCACCAAGGAAGGCAGCGGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
 CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTGT
 GTATTTTCAGAAGTCTCTGTCTGGCTTTTCAGCAATGAAGGGTTTGGTTGTAGAAGTTCCAAGGCTTCCCTTAGCATTGATC
 TTTGCTTCTGAACTGCAGGGAGACACTCCATCAGTCACTACTGTGCTCAGCTGGGAACATTGGGGAGGATGGAAT
 CCTGAGCTGCACCTTTGAACCTGACATCAAACCTTCTGATATCGTGATACAATGGCTGAAGGAAGGTGTTTTAGGCTTGG
 TCCATGAGTTCAAAGAAGGCAAAGATGAGCTGTGCGAGCAGGATGAAATGTTTCAGAGGCCGGACAGCAGTGTGTTGCTGAT
 CAAGTGATAGTTGGCAATGCCTCTTTGCGGCTGAAAAACGTGCAACTCACAGATGCTGGCACCTACAAATGTTATATCAT
 CACTTCTAAAGGCAAGGGGAATGCTAACCTTGAGTATAAACTGGAGCCTTCAGCATGCCGGAAGTGAATGTGGACTATA
 ATGCCAGCTCAGAGACCTTGCGGTGTGAGGCTCCCCGATGGTTCCCCCAGCCCACAGTGGTCTGGGCATCCCAAGTTGAC
 CAGGGAGCCAACTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGAATGTGACCATGAAGTTGTGTCTGT
 GCTCTACAATGTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATTGCCAAAGCAACAGGGGATATCAAAG
 TGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAGCTGCTAAACTCAAAGGCTTCTCTGTGTGTCTCTTCTTTCTTT
 GCCATCAGCTGGGCACTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTGCCTCGGCCACAAAAAGCATGCAAA
 GTCATTGTTACAACAGGGATCTACAGAACTATTTACCACCAGATATGACCTAGTTTATATTTCTGGGAGGAAATGAAT
 TCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAGAAACAAAAAGAAGCCAAAAAGCAGAAGGCTCCAATATGAACAA
 GATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAAATAATTCATGTGAACTAGACAAGTGTGTTAAGAGTGATAAG

TAAAATGCACGTGGAGACAAGTGCATCCCCAGATCTCAGGGACCTCCCCCTGCCTGTACCTGGGGAGTGAGAGGACAGG
 ATAGTGCATGTTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTCTGAGGAAGCCCCTGGAAAGTCTATC
 CCAACATATCCACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGACGCTGCTAATTGACTGCCACTTCGC
 AACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATGATTCACTTTTTATGATGCTTCCAAAGGTGCCTTGGCTTCTCT
 TCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACAGAGCAGTCGGCGACACCGATTTTAT
 AAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGCGGGTTTTATTTCTCAGATGATGTTTCATCCGTGAATGGTCCAGG
 GAAGGACCTTTACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGGACAGC
 TAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTTCGCCCCCATCTCCGGGGGAATGTC
 TGAAGACAATTTTGGTTACCTCAATGAGGGAGTGAGGAGGATACAGTGCTACTACCAACTAGTGAGTAGAGGCCAGGGA
 TGCTGCTCAACCTCCTACCATGTACAGGACGTCTCCCCATTACAACCTACCCAATCCGAAGTGTCAACTGTGTCAGGGCTA
 AGAAACCCTGGTTTTGAGTAGAAAAGGGCCTGGAAAGAGGGGAGCCAACAAATCTGTCTGCTTCCTCACATTAGTCATTG
 GCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTCTATCGGGCACCAGGATAACATCTCT
 CAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGCTTGTTGAGCTTCTAAGTTTCTTTCC
 CTTTATTCTACCTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTCAGTTTTCTTACTCTGAATTTAGAT
 CTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCATGAAGCACACACAGACTTTTGAAAG
 CAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAAGAATACTTTGTTTCCAGCCCCCTTC
 CCACACTCTTCATGTGTTAACCCTGCCTTCTGACCTTGAGGCCACGGTGACTGTATTACATGTTGTTATAGAAAACCT
 GATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTACACCA

B7x: a widely expressed B7 family member that inhibits T cell activation
 Proc Natl Acad Sci U S A 100 (18), 10388-10392 (2003)

GTGAGTCACCAAGGAAGGCAGCGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
 CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
 GTATTTTCAGAACTCTCTGTCTGGCTTTTCAGCAATGAAGGGTTTGTTGTAGAAGTTCCAAGGCTTCCCTTAGCATTGATC
 TTTGCTTCTGAACTGCAGGGAGACACTCCATCACAGTCACTACTGTGCTCAGCTGGGAACATTGGGGAGGATGGAAT
 CCTGAGCTGCACCTTTGAACCTGACATCAAACCTTCTGATATCGTGATAACAATGGCTGAAGGAAGGTGTTTTAGGCTTGG
 TCCATGAGTTCAAAGAAGGCAAAGATGAGCTGTGCGAGCAGGATGAAATGTTTCAGAGGCCGGACAGCAGTGTGTTGCTGAT
 CAAGTGATAGTTGGCAATGCCTCTTTGCGGCTGAAAAACGTGCAACTCACAGATGCTGGCACCTACAAATGTTATATCAT
 CACTTCTAAAGGCAAGGGGAATGCTAACCTTGAGTATAAACTGGAGCCTTCAGCATGCCGGAAGTGAATGTGGACTATA
 ATGCCAGCTCAGAGACCTTGCGGTGTGAGGCTCCCCGATGGTTCCCCCAGCCCACAGTGGTCTGGGCATCCCAAGTTGAC
 CAGGGAGCCAACTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGAATGTGACCATGAAGGTTGTGTCTGT
 GCTCTACAATGTTACGATCAACAACACATACTCTGTATGATTGAAAATGACATTGCCAAAGCAACAGGGGATATCAAAG
 TGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAGCTGCTAAACTCAAAGGCTTCTCTGTGTGTCTCTTCTTTCTTT
 GCCATCAGCTGGGCACCTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTGCCTCGGCCACAAAAAGCATGCAAA
 GTCATTGTTACAACAGGGATCTACAGAACTATTTACCACCAGATATGACCTAGTTTTATATTTCTGGGAGGAAATGAAT
 TCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAGAAACAAAAAGAAGCCAAAAAGCAGAAGGCTCCAATATGAACAA
 GATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAAATAATTCATGTGAACTAGACAAGTGTGTTAAGAGTGATAAG
 TAAAATGCACGTGGAGACAAGTGCATCCCCAGATCTCAGGGACCTCCCCCTGCCTGTACCTGGGGAGTGAGAGGACAGG
 ATAGTGCATGTTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTCTGAGGAAGCCCCTGGAAAGTCTATC
 CCAACATATCCACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGACGCTGCTAATTGACTGCCACTTCGC
 AACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATGATTCACTTTTTATGATGCTTCCAAAGGTGCCTTGGCTTCTCT
 TCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACAGAGCAGTCGGCGACACCGATTTTAT
 AAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGCGGGTTTTATTTCTCAGATGATGTTTCATCCGTGAATGGTCCAGG
 GAAGGACCTTTACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGGACAGC
 TAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTTCGCCCCCATCTCCGGGGGAATGTC
 TGAAGACAATTTTGGTTACCTCAATGAGGGAGTGAGGAGGATACAGTGCTACTACCAACTAGTGAGTAGAGGCCAGGGA
 TGCTGCTCAACCTCCTACCATGTACAGGACGTCTCCCCATTACAACCTACCCAATCCGAAGTGTCAACTGTGTCAGGGCTA
 AGAAACCCTGGTTTTGAGTAGAAAAGGGCCTGGAAAGAGGGGAGCCAACAAATCTGTCTGCTTCCTCACATTAGTCATTG

GCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTCTATCGGGCACCAGGATAACATCTCT
CAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGCTTGTTGAGCTTCTAAGTTTCTTTCC
CTTCATTCTACCTTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTCAGGTTTTCTTACTCTGAATTTAGAT
CTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCATGAAGCACACACAGACTTTTGAAAG
CAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAAGAATACTTTGTTTCCAGCCCCCTC
CCACACTCTTCATGTGTTAACCCTGCCTTCCTGGACCTTGAGGCCACGGTGAAGTATTACATGTTGTTATAGAAAAC
GATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTACACCA

BTLA is a lymphocyte inhibitory receptor with similarities to CTLA-4 and PD-1
Nat Immunol 4 (7), 670-679 (2003)

GTGAGTCACCAAGGAAGGCAGCGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
GTATTTCAAGTCTCTGTCTGGCTTTCAGCAATGAAGGGTTTGTTGTAGAAGTTCCAAGGCTTCCCTTAGCATTGATC
TTTGCTTCCCTGAACTGCAGGGAGACACTCCATCAGCTCACTACTGTGCCTCAGCTGGGAACATTGGGGAGGATGGAAT
CCTGAGCTGCACTTTTGAACCTGACATCAAATTTCTGATATCGTGATAAATGGCTGAAGGAAGGTGTTTTAGGCTTGG
TCCATGAGTTCAAAGAAGGCAAAGATGAGCTGTCGGAGCAGGATGAAATGTTGAGAGCCGGACAGCAGTGTGCTGAT
CAAGTGATAGTTGGCAATGCCTCTTTGCGGCTGAAAAACGTGCAACTCACAGATGCTGGCACCTACAAATGTTATATCAT
CACTTCTAAAGGCAAGGGGAATGCTAACCTTGAGTATAAACTGGAGCCTTACGATGCCGGAAGTGAATGTGGACTATA
ATGCCAGCTCAGAGACCTTGCGGTGTGAGGCTCCCCGATGGTTCCCCCAGCCACAGTGGTCTGGGCATCCCAAGTTGAC
CAGGGAGCCAACTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGAATGTGACCATGAAGTTGTGTCTGT
GCTCTACAATGTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATTGCCAAAGCAACAGGGGATATCAAAG
TGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAGCTGCTAAACTCAAAGGCTTCTCTGTGTGTCTCTTCTTTCTTT
GCCATCAGCTGGGCACCTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTGCTCGGCCACAAAAAGCATGCAAA
GTCATTGTTACAACAGGGATCTACAGAACTATTTACCACCAGATATGACCTAGTTTTATATTTCTGGGAGGAAATGAAT
TCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAGAAACAAAAAGAAGCCAAAAGCAGAAGGCTCCAATATGAACAA
GATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAAATAATTCATGTGAACTAGACAAGTGTGTTAAGAGTGATAAG
TAAATGACAGTGGAGACAAGTGCATCCCCAGATCTCAGGGACCTCCCCCTGCCTGTACCTGGGGAGTGAGAGGACAGG
ATAGTGCATGTTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTCTGAGGAAGCCCCTGGAAAGTCTATC
CCAACATATCCACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGACGCTGCTAATTGACTGCCACTTCGC
AACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATGATTCACCTTTTTATGATGCTTCCAAAGGTGCCTTGGCTTCTCT
TCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACAGAGCAGTCGGCGACACCGATTTTAT
AAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGCGGGTTTATTTCTCAGATGATGTTTCATCCGTGAATGGTCCAGG
GAAGGACCTTTACCTTGTCTATATGGCATTATGTCATCAAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGGACAGC
TAAGACCTCAGTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTCGCCCCCATCTCCGGGGGAATGTC
TGAAGACAATTTTGGTTACCTCAATGAGGGAGTGAGGAGGATACAGTGCTACTACCAACTAGTGGATAGAGGCCAGGGA
TGCTGCTCAACCTCCTACCATGTACAGGACGTCTCCCCATTACAACTACCCAATCCGAAGTGTCAACTGTGTCAGGGCTA
AGAAACCCTGGTTTTGAGTAGAAAAGGGCCTGAAAAGAGGGGAGCCAACAAATCTGTCTGCTTCTCACATTAGTCATTG
GCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTCTATCGGGCACCAGGATAACATCTCT
CAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGCTTGTTGAGCTTCTAAGTTTCTTTCC
CTTCATTCTACCTTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTCAGGTTTTCTTACTCTGAATTTAGAT
CTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCATGAAGCACACACAGACTTTTGAAAG
CAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAAGAATACTTTGTTTCCAGCCCCCTC
CCACACTCTTCATGTGTTAACCCTGCCTTCCTGGACCTTGAGGCCACGGTGAAGTATTACATGTTGTTATAGAAAAC
GATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTACACCA

B7S1, a novel B7 family member that negatively regulates T cell activation
Immunity 18 (6), 863-873 (2003)

GTGAGTCACCAAGGAAGGCAGCGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC

CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
 GTATTTTCAGAAAGTCTCTGTCTGGCTTTTCAGCAATGAAGGGTTTGGTTGTAGAAGTTCCAAGGCTTCCCTTAGCATTGATC
 TTTGCTTCCTGAACTGCAGGGAGACACTCCATCACAGTCACTACTGTGCGCTCAGCTGGGAACATTGGGGAGGATGGAAT
 CCTGAGCTGCACTTTTGAACCTGACATCAAACCTTCTGATATCGTGATACAATGGCTGAAGGAAGGTGTTTTAGGCTTGG
 TCCATGAGTTCAAAGAAGGCAAAGATGAGCTGTCGGAGCAGGATGAAATGTTTCAGAGGCCGGACAGCAGTGTGCTGAT
 CAAGTGATAGTTGGCAATGCCTCTTTGCGGCTGAAAAACGTGCAACTCACAGATGCTGGCACCTACAAATGTTATATCAT
 CACTTCTAAAGGCAAGGGGAATGCTAACCTTGAGTATAAACTGGAGCCTTCAGCATGCCGGAAGTGAATGTGGACTATA
 ATGCCAGCTCAGAGACCTTGCGGTGTGAGGCTCCCCGATGGTTCCCCCAGCCCACAGTGGTCTGGGCATCCCAAGTTGAC
 CAGGGAGCCAACTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGAATGTGACCATGAAGGTTGTGTCTGT
 GCTCTACAATGTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATTGCCAAAGCAACAGGGGATATCAAAG
 TGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAGCTGCTAAACTCAAAGGCTTCTCTGTGTGTCTCTTCTTTCTTT
 GCCATCAGCTGGGCACTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTGCCTCGGCCACAAAAAGCATGCAAA
 GTCATTGTTACAACAGGGATCTACAGAACTATTTACCACCAGATATGACCTAGTTTTATATTTCTGGGAGGAAATGAAT
 TCATATCTAGAAGTCTGGAGTGAGCAACAAGAGCAAGAAACAAAAAGAAGCCAAAAGCAGAAGGCTCCAATATGAACAA
 GATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAATAATTCATGTGAACTAGACAAGTGTGTTAAGAGTGATAAG
 TAAAATGCACGTGGAGACAAGTGCATCCCCAGATCTCAGGGACCTCCCCCTGCCTGTACCTGGGGAGTGAGAGGACAGG
 ATAGTGCATGTTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTCTGAGGAAGCCCCTGGAAAGTCTATC
 CCAACATATCCACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGACGCTGCTAATTGACTGCCACTTCGC
 AACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATGATTCACTTTTTATGATGCTTCCAAAGGTGCCTTGGCTTCTCT
 TCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACAGAGCAGTCGGCGACACCGATTTTAT
 AAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGCGGGTTTATTTCTCAGATGATGTTTCATCCGTGAATGGTCCAGG
 GAAGGACCTTTACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGGACAGC
 TAAGACCTCAGTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTTGCCCCCATCTCCGGGGGAATGTC
 TGAAGACAATTTTGGTTACCTCAATGAGGGAGTGAGGAGGATACAGTGCTACTACCAACTAGTGATAGAGGCCAGGGA
 TGCTGCTCAACCTCCTACCATGTACAGGACGTCTCCCCATTACAACACCAATCCGAAGTGTCAACTGTGTGAGGGCTA
 AGAAACCCTGGTTTTGAGTAGAAAAGGGCCTGGAAAGAGGGGAGCCAACAAATCTGTCTGCTTCTCACATTAGTCATTG
 GCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTCTATCGGGCACCAGGATAACATCTCT
 CAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGCTTGTGAGCTTCTAAGTTTCTTTCC
 CTTTATTCTACCTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTCAGGTTTTTCTTACTCTGAATTTAGAT
 CTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCATGAAGCACACACAGACTTTTGAAAG
 CAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAAGAATACTTTGTTTCCAGCCCCCTTC
 CCACACTCTTCATGTGTTAACCCTGCCTTCTGACCTTGGAGCCACGGTGAAGTGTATTACATGTTGTTATAGAAAACT
 GATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTACACCA

B7-H4, a molecule of the B7 family, negatively regulates T cell immunity
 Immunity 18 (6), 849-861 (2003)

GTGAGTCACCAAGGAAGGCAGCGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
 CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
 GTATTTTCAGAAAGTCTCTGTCTGGCTTTTCAGCAATGAAGGGTTTGGTTGTAGAAGTTCCAAGGCTTCCCTTAGCATTGATC
 TTTGCTTCCCTGAACTGCAGGGAGACACTCCATCACAGTCACTACTGTGCGCTCAGCTGGGAACATTGGGGAGGATGGAAT
 CCTGAGCTGCACTTTTGAACCTGACATCAAACCTTCTGATATCGTGATACAATGGCTGAAGGAAGGTGTTTTAGGCTTGG
 TCCATGAGTTCAAAGAAGGCAAAGATGAGCTGTCGGAGCAGGATGAAATGTTTCAGAGGCCGGACAGCAGTGTGCTGAT
 CAAGTGATAGTTGGCAATGCCTCTTTGCGGCTGAAAAACGTGCAACTCACAGATGCTGGCACCTACAAATGTTATATCAT
 CACTTCTAAAGGCAAGGGGAATGCTAACCTTGAGTATAAACTGGAGCCTTCAGCATGCCGGAAGTGAATGTGGACTATA
 ATGCCAGCTCAGAGACCTTGCGGTGTGAGGCTCCCCGATGGTTCCCCCAGCCCACAGTGGTCTGGGCATCCCAAGTTGAC
 CAGGGAGCCAACTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGAATGTGACCATGAAGGTTGTGTCTGT
 GCTCTACAATGTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATTGCCAAAGCAACAGGGGATATCAAAG
 TGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAGCTGCTAAACTCAAAGGCTTCTCTGTGTGTCTCTTCTTTCTTT

GCCATCAGCTGGGCACTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTGCCTCGGCCACAAAAAGCATGCAAA
 GTCATTGTTACAACAGGGATCTACAGAATAATTTACCACCAGATATGACCTAGTTTTATATTTCTGGGAGGAAATGAAT
 TCATATCTAGAAGTCTGGAGTGAGCAACAAGAGCAAGAAACAAAAAGAAGCCAAAAGCAGAAGGCTCCAATATGAACAA
 GATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAATAATTCATGTGAACTAGACAAGTGTGTTAAGAGTGATAAG
 TAAAATGCACGTGGAGACAAGTGCATCCCCAGATCTCAGGGACCTCCCCCTGCCTGTACCTGGGGAGTGAGAGGACAGG
 ATAGTGCATGTTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTCTGAGGAAGCCCCCTGGAAAGTCTATC
 CCAACATATCCACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGACGCTGCTAATTGACTGCCACTTCGC
 AACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATGATTCACTTTTTATGATGCTTCCAAAGGTGCCTTGGCTTCTCT
 TCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACAGAGCAGTCGGCGACACCGATTTTAT
 AAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGCGGGTTTTATTTCTCAGATGATGTTTCATCCGTGAATGGTCCAGG
 GAAGGACCTTTACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGGACAGC
 TAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTTGCCCCCATCTCCGGGGGAATGTC
 TGAAGACAATTTTGGTTACCTCAATGAGGGAGTGAGGAGGATACAGTGCTACTACCAACTAGTGGATAGAGGCCAGGGA
 TGCTGCTCAACCTCCTACCATGTACAGGACGTCTCCCCATTACAACCTACCCAATCCGAAGTGTCAACTGTGTCAGGGCTA
 AGAAACCCTGGTTTTGAGTAGAAAAGGGCCTGGAAAGAGGGGAGCCAACAAATCTGTCTGCTTCTCACATTAGTCATTG
 GCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTCTATCGGGCACCAGGATAACATCTCT
 CAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGCTTGTTGAGCTTCTAAGTTTCTTTCC
 CTTTATTCTACCCTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTCAGGTTTTCTTACTCTGAATTTAGAT
 CTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCATGAAGCACACACAGACTTTTGAAAG
 CAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAAGAATACTTTGTTTCCAGCCCCCTC
 CCACACTCTTCATGTGTTAACCCTGCCTTCTCGACCTTGGAGCCACGGTACTGTATTACATGTTGTTATAGAAAAT
 GATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTACACCA

Lysine demethylase 2 (KDM2B) regulates hippo pathway via MOB1 to promote
 pancreatic ductal adenocarcinoma (PDAC) progression

J Exp Clin Cancer Res 39 (1), 13 (2020)

GCTGAAAATGGTTTCCTAGGACTTTGCAAACGGATCTGCCTAAGTGTGGTGCAAACTTTGTAGATCTCGGCTCTGGCT
 TGCTTTATTTATTTATTTTTTGGTTTGTTCCTTTGGTCTTCCCTCCTTCCCCCTCGGCCAAAATGCAGGGGGCAGGAG
 TGTTGACAATTAATTGGTGAACCTCTCCTAAAAAATGGAGGCAGAGAAAGACTCTGGAAGAAGATTGCGCCCGATTGACC
 GCCAGCGATACGACGAGAACGAGGACTTGTGCGACGTGGAGGAGATCGTCAGCGTCCGCGGCTTACGCTGGAGGAGAAG
 CTTTCGACGCCAGTGTACCAGGGGACTTCGTGCACGCCATGGAGGGCAAAGATTCAACTATGAGTACGTACAGAGAGA
 AGCTCTCAGGGTTCCCTGATATTTGAGAAAAGGATGGACTGGGAATTAAGATGCCTGACCCTGATTTACAGTCCGAG
 ACGTCAAACCTCCTAGTGGGGAGCCGGCGGCTTGTGGACGTGATGGATGTGAACACCCAGAAGGGCACGGAGATGAGCATG
 TCCCAGTTTGTGCGTTACTACGAGACGCCCAGGCCCAGCGGGACAAGCTGTACAACGTCATCAGCCTAGAGTTCAGCCA
 CACCAAGCTGGAGCACTTGGTCAAGCGTCCGACTGTGGTAGACCTGGTGGACTGGGTGGACAACATGTGGCCCCAGCATC
 TGAAGGAGAAGCAGACAGAAGCCACGAACGCCATTGCAGAGATGAAGTACCCGAAAGTGAAAAAGTACTGTCTGATGAGC
 GTGAAAGGTTGTTTACCGACTTCCACATCGACTTTGGAGGCACTTCCGTTTGGTACCATGTTTTCCGGGTGGGAAGAT
 TTTTTGGCTGATTCCTCCAACGCTGCACAATTTGGCGCTGTACGAGGAGTGGGTGCTGTCAGGCAAACAGAGTGACATCT
 TTCTGGGAGACCGTGTGGAACGATGCCAAAGAATTGAGCTGAAGCAGGGCTACACATTTTTCATCCCTTCCGGTTGGATC
 CATGCCGTCTACACCCCTGTAGACTCTTTGGTGTTCGGCGGAAACATCCTGCACAGCTTTAACGTGCCCATGCAGCTGCG
 GATCTACGAGATCGAGGACAGGACGCGGTGCAGCCCAAATTCGGTTACCCCTTCTACTATGAGATGTGCTGGTATGTCC
 TGGAGAGATACGTGTAAGTGTGACCCAGCGCTCCACCTCACTCAGGAATACCAGAGGGAGTCGATGCTTATTGATGCC
 CCGAGGAAGCCAGCATAGACGGCTTCTCTTCGGATTCTGGCTGGAGATGGAGGAGGAGGCTGTGATCAGCAGCCTCA
 GGAGGAGGAGGAGAAGGACGAGGAGGGCGAGGGCAGGGACAGGGCACCCAAACCGCCACCGATGGCTCCACTTACCCCA
 CCAGCACGCCCTCTGAGGACCAGGAGGCCCTCGGGAAGAAGCCCAAAGCACCTGCCCTGCGATTCTCAAAGGACTTTG
 TCTAATGAGTCGGAGGAAAGTGTGAAGTCCACCACATTGGCCGTAGACTACCCCAAGACCCCAACCGGCTCTCCCGCCAC
 GGAGGTCTCTGCCAAATGGACCCATCTCACTGAGTTTGAAGTGAAGGGCTGAAAGCTCTGGTGGAGAACTGGAATCCC
 TCCCGGAGAACAAAGAGTGTGTCCCCGAGGGCATCGAGGACCCCAAGGCACTCCTGGAGGGTGTGAAGAAGTCTCTGAAG

GAGCACGCAGATGATGACCCTAGTCTGGCCATCACTGGGGTCCCTGTGGTGACTTGGCCAAAGAAGACTCCAAAGAACCG
GGCTGTGGGTGCGCCCAAGGGGAAGCTGGGCCGGCCTCCGCGGTGAAGTTGGCCGCCAACCGGACAACGGCAGGAGCTC
GGCGGCGCCGGACGCGATGCCGCAAGTGGGAGCCTGCCTGCGGACCGAGTGGGAGAGTGCCACTTCTGCAAGGACATG
AAGAAGTTCGGGGGCCCCGGGCGCATGAAGCAGAGCTGCATCATGCGGCAGTGCATCGCGCCAGTGCTGCCCCACACCGC
CGTGTGCCTTGTGTGTGGCGAGGCGGGGAAGGAAGACACGGTGGAAAGAGGAGGAAGGCAAGTTTAACCTCATGCTCATGG
AGTGCTCCATCTGCAATGAAATCATCCACCCTGGATGCCTTAAGATTAAGGAGTCAGAGGGTGTGGTCAACGACGAGCTT
CCAAACTGCTGGGAGTGTCCGAAGTGTAAACCACGCCGGAAGACCGGGAAACAAAAGCGTGGCCCTGGCTTTAAGTACGC
CTCCAACCTGCCCCGCTCCCTGCTCAAGGAGCAGAAGATGAACCGGGACAACAAGGAAGGGCAGGAACCTGCCAAGCGGA
GGAGTGAGTGTGAGGAGGCGCCCCGGCGCAGGTGCGATGAGCACTCGAAGAAGGTGCCGCGGACGGCCTTCTGCGCAGA
AAGTCTGACGACGTGCACCTGAGGAAGAAGCGGAAATACGAGAAGCCCCAGGAGCTGAGTGGACGCAAGCGGCTCAAACC
TGGCAAAGAAGATAAGCTTTTCAGGAAAAAGCGGCGGTCTTGAAGAACGCCGAGGACCGCATGGCGCTGGCCAACAAGC
CCCTCCGGCGCTTCAAGCAGGAACCCGAGGACGAACTGCCCGAGGCGCCCCCAAGACCAGGGAGAGCGACCACTCCCCG
TCCAGCTCCCCCACCGCGGGACCCAGCACCGAAGGGGCGAGGGCCCCGAGGAGAAGAAGAAGGTGAAGATGCGCCGGAA
GCGGCGGCTTCCCAACAAGGAGCTGAGCAGGGAGCTGAGCAAGGAGCTCAACCACGAGATCCAGAGGACGGAGAACAGCC
TGGCCAACGAGAACCAGCAGCCCATCAAGTCGGAGCCTGAGAGCGAGGGCGAGGAGCCCAAGCGGCCCCCGGGCATCTGC
GAGCGTCCCCACCGCTTCAGCAAGGGGCTCAACGGCACCCCCCGGGAGCTGCGGCACCAGCTGGGGCCCAGCCTGCGCAG
CCCCCCCCGTGCATCTCCCGCCCCCACCCTCCGTGTCCCGCCCCAAGTGTATCCAGATGGAGCGCCATGTGATCCGGC
CACCCCCCATCAGCCCCCGCCTGACTCGCTACCCCTGGACGATGGGGCAGCCCACGTCATGCACAGGGAGGTGTGGATG
GCCGTCTTCAGTACCTCAGCCACCAAGACCTGTGTGTGTGCATGCGGGTCTGCAGGACCTGGAACCGCTGGTGCTGCGA
TAAGCGGTTGTGGACCCGATTGACCTGAACCACTGCAAGTCTATCACACCCCTGATGCTGAGTGGCATCATCCGGCGAC
AGCCCGTCTCCCTCGACCTCAGCTGGACCAATATCTCCAAGAAGCAGCTGAGCTGGCTCATCAACCGGTGCCTGGGCTC
CGGGACTTGGTGCTGTCAGGCTGCTCATGGATCGCGGTCTCGGCCCTTTGCAGCTCCAGTTGTCCGCTGCTCCGGACCT
GGATGTCCAGTGGGTGGAGGGACTAAAGGATGCCAGATGCGGGATCTCCTGTCCCCGCCACAGACAACAGGCCAGGTC
AGATGGACAATCGGAGCAAGCTCCGGAACATCGTGAGCTGCGCCTGGCAGGCCTGGACATCACAGATGCCTCCCTGCGG
CTCATCATCCGCCACATGCCCCTGCTCTCCAAGCTCCACCTCAGTTACTGTAACCACGTCAACGACAGTCTATCAACCT
GCTCACTGCTGTTGGCACCACCACCCGAGACTCCTTAACCGAGATCAACCTGTCTGACTGCAATAAGGTCACTGATCAGT
GCCTGTCTTCTTCAAACGCTGTGGAACATCTGTGCATATTGACCTGAGGTACTGCAAGCAAGTCACCAAGGAAGGCTGT
GAGCAGTTTCATAGCCGAGATGTCTTCTTTCCAAGGGAGAAGCTGTTCAACACCCGTTTGGGGGATGAGTGAGCCGACAC
TTTCCTTTGGTCTTTCTGAATCGTAACCTGCACTGCTTTCTGGACCATTTCTAAGGCGGCCTTTACAAGAAGACATTCTG
TCGGAGAGGAGGTGGACTTCGGAGAAATTCTCATACTGAAGCATGAGCTTAGGAGTTTCTGTTAGTGGTAGTGGTGT
TGGACACTTCATTCTTGAACACCGAGGTTTTGGGTGTTGACATAAAGTGGACCACACACCACATCTGCTGCCGTCTTG
ACACTTTTTTTTTGTTTGGTTGGTTTTGTTACATCTTACATTATGCAGAACTATTTTTGTACAAATTGTTTAAAAGTTATT
TATGCAAGGTTTGAATGCATACCAAGTGTTTTTATTGTTTTGAGATTGCCAATTTTCTGATTTCTTAAAGTAGGAGAGA
ATTTAACGTGTACTTCATCGACACAACCCATCTACAAATGTGCCAGATCTAACAAAGTAGGCTAAGACCTTCCACTTAA
AAGCATGTTTAACTGGAAGTTGAGAGTCTGCTTTGTACCTCAAGAGTTACATGAGCATGTTGTGGATAAATGTAAATTAT
AGTCAAAGTAAGATACTCTGCCAAGTTTCTCTGTAGAGAATTCACTTTTCTCAAATTTTAAAATTTGACTTCAGCCTT
TGCACCTCAGGAGGTTCTGCTCCAGCATGAGCTCTTGTACTTACATAGATCTAATTTATACAGTGAGTCAAGACGTAGAAT
AAATGCTCCACATAGCCTTTCTTTTGCTTTTGCTTCTCTCTCTGAAGTGTGAGTTGAGTTCTCATTTAGGTTTGTAAAC
ATGGCTATTTCTAGTTGTAAAGTTCTGCATTTATAAGTGCCATTGTTGTAAGGTGGTGTTCCTAGACCTTCCCTGATG
CGATTTTACCTTTGTTGAATTTGTATAAACAATTGTACAAAAAAACCCTCTTGAACCTTTGAGGGTTTCTGTTCTAGGA
GTGGACTAGAAGTTTAAAGCCAGAGTCAGTAAACACTGTTTTGAAGTCCAAA

Induction of co-inhibitory molecule CTLA-4 by human papillomavirus E7 protein
through downregulation of histone methyltransferase JHDM1B expression
Virology 538, 111-118 (2019)
GCTGAAAATGGTTTCTAGGACTTTGCAAACGGATCTGCCTAAGTGTGGTGCAAACTTTGTAGATCTCGGCTCTGGCT
TGCTTTATTTATTTATTTTGGTTTGTCTTTGCTTCTCCTCTGAAGTGTGAGTTGAGTTCTCATTTAGGTTTGTAAAC
TGTTGACAATTAATTGGTGAACCTCTCTAAAAAATGGAGGCAGAGAAAGACTCTGGAAGAAGATTGCGCCCGATTGACC

GCCAGCGATACGACGAGAACGAGGACTTGTCTGGACGTGGAGGAGATCGTCAGCGTCCGCGGCTTCAGCCTGGAGGAGAAG
CTTCGCAGCCAGCTGTACCAGGGGACTTCGTGCACGCCATGGAGGGCAAAGATTTCAACTATGAGTACGTACAGAGAGA
AGCTCTCAGGGTTCCCTGATATTTTCGAGAAAAGGATGGACTGGGAATTAAGATGCCTGACCCTGATTTTCAGTCCGAG
ACGTCAAACCTAGTGGGGAGCCGGCGGCTTGTGGACGTGATGGATGTGAACACCCAGAAGGGCACGGAGATGAGCATG
TCCCAGTTTGTGCGTTACTACGAGACGCCCCGAGGCCAGCGGGACAAGCTGTACAACGTCATCAGCCTAGAGTTCAGCCA
CACCAAGCTGGAGCACTTGGTCAAGCGTCCGACTGTGGTAGACCTGGTGGACTGGGTGGACAACATGTGGCCCCAGCATC
TGAAGGAGAAGCAGACAGAAGCCACGAACGCCATTGCAGAGATGAAGTACCCGAAAGTGAAAAAGTACTGTCTGATGAGC
GTGAAAGGTTGTTTCACCGACTTCCACATCGACTTTGGAGGCACTTCCGTTTGGTACCATGTTTTCCGGGGTGGGAAGAT
TTTTTGGCTGATTCTCCAACGCTGCACAATTTGGCGCTGTACGAGGAGTGGGTGCTGTGAGGCAAACAGAGTGACATCT
TTCTGGGAGACCGTGTGGAACGATGCCAAAGAATTGAGCTGAAGCAGGGCTACACATTTTTTCATCCCTTCCGGTTGGATC
CATGCCGTCTACACCCCTGTAGACTCTTTGGTGTTCGGCGGAAACATCCTGCACAGCTTTAACGTGCCCATGCAGCTGCG
GATCTACGAGATCGAGGACAGGACGCGGTGCAGCCCAAATTCGGTTACCCCTTCTACTATGAGATGTGCTGGTATGTCC
TGGAGAGATACGTGTACTGTGTGACCCAGCGCTCCACCTCACTCAGGAATACCAGAGGGAGTCGATGCTTATTGATGCC
CCGAGGAAGCCAGCATAGACGGCTTCTCTTCGATTCTTGGCTGGAGATGGAGGAGGAGGCCTGTGATCAGCAGCCTCA
GGAGGAGGAGGAGAAGGACGAGGAGGGCGAGGGCAGGGACAGGGCACCCAAACCGCCACCGATGGCTCCACTTCACCCA
CCAGCACGCCCTCTGAGGACCAGGAGGCCCTCGGGAAGAAGCCCAAAGCACCTGCCCTGCGATTCTCAAAGGACTTTG
TCTAATGAGTCGGAGGAAAGTGTGAAGTCCACCACATTGGCCGTAGACTACCCCAAGACCCCCACCGCTCTCCCGCCAC
GGAGGTCTCTGCCAAATGGACCCATCTCACTGAGTTTGAAGTGAAGGGCCTGAAAGCTCTGGTGGAGAACTGGAATCCC
TCCCGGAGAACAAGAAGTGTGTCCCCGAGGGCATCGAGGACCCCCAGGCACTCCTGGAGGGTGTGAAGAACGTCCTGAAG
GAGCACGCAGATGATGACCCTAGTCTGGCCATCACTGGGGTCCCTGTGGTGACTTGGCCAAAGAAGACTCCAAAGAACCG
GGCTGTGGGTTCGGCCCAAGGGGAAGCTGGGCCGGCCTCCGCGGTGAAGTTGGCCGCCAACCGGACAACGGCAGGAGCTC
GGCGGCGCCGACGCGATGCCGCAAGTGCAGGCCTGCCTGCGGACCGAGTGCAGGAGTGCCTACTTCTGCAAGGACATG
AAGAAGTTCGGGGGCCCCGGGCGCATGAAGCAGAGCTGCATCATGCGGCAGTGCATCGCGCCAGTGTGCCCCACACCGC
CGTGTGCCCTTGTGTGTGGCGAGGCGGGGAAGGAAGACACGGTGAAGAGGAGGAAGGCAAGTTTAACCTCATGCTCATGG
AGTGCTCCATCTGCAATGAAATCATCCACCCTGGATGCCTTAAGATTAAGGAGTCAGAGGGTGTGGTCAACGACGAGCTT
CCAAACTGCTGGGAGTGTCCGAAGTGTAAACCACGCCGGCAAGACCGGGAACAAAAGCGTGGCCCTGGCTTTAAGTACGC
CTCCAACCTGCCCCGCTCCCTGCTCAAGGAGCAGAAGATGAACCGGGACAACAAGGAAGGGCAGGAACCTGCCAAGCGGA
GGAGTGAGTGTGAGGAGGCGCCCCGGCGCAGGTTCGGATGAGCACTCGAAGAAGGTGCCGCCGACGGCCTTCTGCGCAGA
AAGTCTGACGACGTGCACCTGAGGAAGAAGCGGAAATACGAGAAGCCCCAGGAGCTGAGTGGACGCAAGCGGCTCAAACC
TGGCAAAGAAGATAAGCTTTTCAGGAAAAAGCGCGGTCTTGAAGAACGCCGAGGACCGCATGGCGCTGGCCAAACAAGC
CCCTCCGGCGCTTCAAGCAGGAACCCGAGGACGAACTGCCCGAGGCGCCCCCAAGACCAGGGAGAGCGACCACTCCCGC
TCCAGCTCCCCCACCAGGACCCAGCACCGAAGGGGCGAGGGCCCGAGGAGAAGAAGAAGGTGAAGATGCGCCGGAA
GCGGCGGCTTCCCAACAAGGAGCTGAGCAGGGAGCTGAGCAAGGAGCTCAACCACGAGATCCAGAGGACGGAGAACAGCC
TGGCCAACGAGAACCAGCAGCCCATCAAGTCGGAGCCTGAGAGCGAGGGCGAGGAGCCCAAGCGGCCCCCGGGCATCTGC
GAGCGTCCCCACCGCTTCAGCAAGGGGCTCAACGGCACCCCCCGGAGCTGCGGCACCAGCTGGGGCCCAGCCTGCGCAG
CCCCCCCCGTGTCATCTCCCGCCCCCACCCTCCGTGTCCCCGCCCAAGTGTATCCAGATGGAGCGCCATGTGATCCGGC
CACCCCCCATAGCCCCCGCCTGACTCGCTACCCTGGACGATGGGGCAGCCCACGTGTCACAGGGAGGTGTGGATG
GCCGTCTTACGCTACCTCAGCCACCAAGACCTGTGTGTGTGCATGCGGGTCTGCAGGACCTGGAACCGCTGGTGTGCGA
TAAGCGGTTGTGGACCCGATTGACCTGAACCACTGCAAGTCTATCACACCCCTGATGCTGAGTGGCATCATCCGGCGAC
AGCCCGTCTCCCTCGACCTCAGCTGGACCAATATCTCCAAGAAGCAGCTGAGCTGGCTCATCAACCGCTGCCTGGGCTC
CGGGACTTGGTGTGTGTCAGGCTGCTCATGGATCGCGGTCTCGGCCCTTTGCAGCTCCAGTTGTCCGCTGCTCCGGACCCT
GGATGTCCAGTGGGTGGAGGGACTAAAGGATGCCAGATGCGGGATCTCCTGTCCCCGCCACAGACAACAGGCCAGGTC
AGATGGACAATCGGAGCAAGCTCCGGAACATCGTGGAGCTGCGCCTGGCAGGCCTGGACATCACAGATGCCTCCCTGCGG
CTCATATCCGCCACATGCCCCTGCTCTCCAAGCTCCACCTCAGTTACTGTAACCACGTACCGACCACTATCAACCT
GCTCACTGCTGTTGGCACCAACACCCGAGACTCCTTAACCGAGATCAACCTGTCTGACTGCAATAAGGTCACTGATCAGT
GCCTGTCTTCTTCAAACGCTGTGGAACATCTGTATATTGACCTGAGGTACTGCAAGCAAGTCACCAAGGAAGGCTGT
GAGCAGTTCATAGCCGAGATGTCTTCTTTCCAAGGGAGAAGCTGTTCAACCACCCGTTTGGGGGATGAGTGAGCCGACAC
TTTCCTTTGGTCTTTCTGAATCGTAACTGCACTGCTTTCTGGACCATTTCTAAGGCGGCCTTTACAAGAAGACATTCTCTG

TCGGAGAGGAGGGTGGACTTCGGAGAAATTCTCATACTGAAGCATGAGCTTAGGAGTTTCTGTTAGTGGTAGTGGTGT
TGGACACTTCATTCCCTTGCAACACCGAGGTTTTGGGTGTTGACATAAAGTGGACCACACACCACATCTGCTGCCGTCTTG
ACACTTTTTTTTGTGGTTGGTTTTGTTACATCTTACATTATGCAGAACTATTTTGTACAAATTGTTTAAAAGTTATT
TATGCAAGGTTTGAATGCATACCAAGTGTGTTTTATTGTTTTGAGATTGCCAATTTTCCTGATTTCCCTAAGGTAGGAGAGA
ATTTAACGTGTACTTCATCGACACAACCCATCTACAAATGTGCCAGATCTAACAAAGTAGGCTAAGACCTTCCACTTAA
AAGCATGTTTAACTGGAAGTTGAGAGTCTGCTTTGTACCTCAAGAGTTACATGAGCATGTTGTGGATAAATGTAAATTAT
AGTCAAAGTAAGATACTCTGCCAAGTTTCCTCTGTAGAGAATTCACCTTTCTCAAATTTTAAAATTTTCTGACTTCAGCCTT
TGCACTCAGGAGGTTCTGCTCCAGCATGAGCTCTTGTACTTACATAGATCTAATTTATACAGTGAGTCAAGACGTAGAAT
AAATGCTCCACATAGCCTTTCTTTTGCTTTTGTCTCTCTCTGAAGTGTGAGTTGAGTTCTCATTTAGTTTTGTAAC
ATGGCTATTTCTAGTTGTAAAGTTCTGCATTTATAAGTGCCATTGTTGTAAGGTGGTGTTCCTAGACCTTCCCTGATG
CGATTTTACCTTTGTTGAATTTGTATAAACAAATTGTACAAAAAAACCCTCTTGAACCTTGAGGGTTTCTGTTCTAGGA
GTGGACTAGAAGTTTAAAGCCAGAGTCAGTAAACACTGTTTTGAAGTCCAAA

Tip60-dependent acetylation of KDM2B promotes osteosarcoma carcinogenesis
J Cell Mol Med 23 (9), 6154-6163 (2019)

GCTGAAAATGGTTTCTAGGACTTTGCAAACGGATCTGCCTAAGTGTGGTGCAAACTTTGTAGATCTCGGCTCTGGCT
TGCTTTATTTATTTATTTTTTGGTTTGTCTTTCTTGGTCTTCCCTCCTTCCCCCTCGGCCAAAATGCAGGGGGCAGGAG
TGTTGACAATTAATTGGTGAAGTCTCTTAAAAAATGGAGGCAGAGAAAGACTCTGGAAGAAGATTGCGCCCGATTGACC
GCCAGCGATACGACGAGAACGAGGACTTGTGCGACGTGGAGGAGATCGTCAGCGTCCGCGGCTTACGCTGGAGGAGAAG
CTTCGCAGCCAGCTGTACCAGGGGACTTCGTGCACGCCATGGAGGGCAAAGATTCAACTATGAGTACGTACAGAGAGA
AGCTCTCAGGGTTCCTGATATTTGAGAAAAAGGATGGACTGGGAATTAAGATGCCTGACCCTGATTTACAGTCCGAG
ACGTCAAACCTCTAGTGGGGAGCCGGCGGCTTGTGGACGTGATGGATGTGAACACCCAGAAGGGCACGGAGATGAGCATG
TCCCAGTTTGTGCGTTACTACGAGACGCCCCGAGGCCAGCGGGACAAGCTGTACAACGTCATCAGCCTAGAGTTCAGCCA
CACCAAGCTGGAGCACTTGGTCAAGCGTCCGACTGTGGTAGACCTGGTGGACTGGGTGGACAACATGTGGCCCCAGCATC
TGAAGGAGAAGCAGACAGAAGCCACGAACGCCATTGCAGAGATGAAGTACCCGAAAGTGA AAAAAGTACTGTCTGATGAGC
GTGAAAGGTTGTTTACCGACTTCCACATCGACTTTGGAGGCACTTCCGTTTGGTACCATGTTTTCCGGGGTGGGAAGAT
TTTTTGGCTGATTCTCCAACGCTGCACAATTTGGCGCTGTACGAGGAGTGGGTGCTGTCAGGCAAACAGAGTGACATCT
TTCTGGGAGACCGTGTGGAACGATGCCAAAGAATTGAGCTGAAGCAGGGCTACACATTTTTCATCCCTTCCGGTTGGATC
CATGCCGTCTACACCCCTGTAGACTCTTTGGTGTTCGGCGGAAACATCCTGCACAGCTTTAACGTGCCCATGCAGCTGCG
GATCTACGAGATCGAGGACAGGACGCGGGTGCAGCCCAAATTCGGTTACCCCTTCTACTATGAGATGTGCTGGTATGTCC
TGGAGAGATACGTGTACTGTGTGACCCAGCGTCCACCTCACTCAGGAATACCAGAGGGAGTCGATGCTTATTGATGCC
CCGAGGAAGCCAGCATAGACGGCTTCTCTTCGGATTCTGGCTGGAGATGGAGGAGGAGGCTGTGATCAGCAGCCTCA
GGAGGAGGAGGAGAAGGACGAGGAGGGCGAGGGCAGGGACAGGGCACCCAAACCGCCACCGATGGCTCCACTTACCCCA
CCAGCACGCCCTCTGAGGACCAGGAGGCCCTCGGAAGAAGCCCAAAGCACCTGCCCTGCGATTCTCAAAGGACTTTG
TCTAATGAGTCGGAGGAAAGTGTGAAGTCCACCACATTGGCCGTAGACTACCCCAAGACCCCAACCGGCTCTCCCGCCAC
GGAGGTCTCTGCCAAATGGACCCATCTCACTGAGTTTGAAGTGAAGGGCCTGAAAGCTCTGGTGGAGAACTGGAATCCC
TCCCGGAGAAACAAGAAGTGTGTCCCGAGGGCATCGAGGACCCCCAGGCACTCCTGGAGGGTGTGAAGAAGTCTCTGAAG
GAGCACGCAGATGATGACCCTAGTCTGGCCATCACTGGGGTCCCTGTGGTGACTTGGCCAAAGAAGACTCCAAAGAACCG
GGCTGTGGGTTCGGCCCAAGGGGAAGCTGGGCCCGGCTCCGCGGTGAAGTTGGCCGCCAACCGGACAACGGCAGGAGCTC
GGCGGCGCGGACGCGATGCCGCAAGTGCAGGCCTGCCTGCGGACCGAGTGCAGGAGAGTGCCACTTCTGCAAGGACATG
AAGAAGTTCGGGGGCCCCGGGCGCATGAAGCAGAGCTGCATCATGCGGCAGTGCATCGCGCCAGTGTCTGCCCCACACCGC
CGTGTGCCTTGTGTGTGGCGAGGCGGGGAAGGAAGACACGGTGAAGAGGAGGAAGGCAAGTTTAACTCATGCTCATGG
AGTGCTCCATCTGCAATGAAATCATCCACCCTGGATGCCTTAAGATTAAGGAGTCAGAGGGTGTGGTCAACGACGAGCTT
CCAAACTGCTGGGAGTGTCCGAAGTGTAAACACGCCGGAAGACCGGAAACAAAAGCGTGGCCCTGGCTTTAAGTACGC
CTCCAACCTGCCCGGCTCCCTGCTCAAGGAGCAGAAGATGAACCGGGACAACAAGGAAGGGCAGGAACCTGCCAAGCGGA
GGAGTGAGTGTGAGGAGGCGCCCCGGCGCAGTCCGATGAGCACTCGAAGAAGGTGCCGCCGACGGCCTTCTGCGCAGA
AAGTCTGACGACGTGCACCTGAGGAAGAAGCGGAAATACGAGAAGCCCCAGGAGCTGAGTGACGCAAGCGGCTCAAACC
TGGCAAAGAAGATAAGCTTTTTCAGGAAAAAGCGCGGTCTGGAAGAACGCCGAGGACCGCATGGCGCTGGCCAACAAGC

CCCTCCGGCGCTTCAAGCAGGAACCCGAGGACGAACTGCCCGAGGCGCCCCCAAGACCAGGGAGAGCGACCACTCCCGC
TCCAGCTCCCCACCGCGGGACCCAGCACCGAAGGGGCGAGGGCCCGAGGAGAAGAAGAAGGTGAAGATGCGCCGGAA
GCGGCGGCTTCCCAACAAGGAGCTGAGCAGGGAGCTGAGCAAGGAGCTCAACCACGAGATCCAGAGGACGGAGAACAGCC
TGGCCAACGAGAACCAGCAGCCCATCAAGTCGGAGCCTGAGAGCGAGGGCGAGGAGCCCAAGCGGGCCCCCGGCATCTGC
GAGCGTCCCCACCGCTTCAGCAAGGGGCTCAACGGCACCCCCCGGGAGCTGCGGCACCAGCTGGGGCCCAGCCTGCGCAG
CCCGCCCCGTGTCATCTCCCGGCCCCCACCTCCGTGTCCCCGCCCAAGTGTATCCAGATGGAGCGCCATGTGATCCGGC
CACCCCCCATCAGCCCCCGCCTGACTCGCTACCCCTGGACGATGGGGCAGCCCACGTCATGCACAGGGAGGTGTGGATG
GCCGTCTTCAGCTACCTCAGCCACCAAGACCTGTGTGTGTGCATGCGGGTCTGCAGGACCTGGAACCGCTGGTGTGCGA
TAAGCGGTTGTGGACCCGATTGACCTGAACCACTGCAAGTCTATCACACCCCTGATGCTGAGTGGCATCATCCGGCGAC
AGCCCGTCTCCCTCGACCTCAGCTGGACCAATATCTCCAAGAAGCAGCTGAGCTGGCTCATCAACCGCTGCCTGGGCTC
CGGGACTTGGTGCTGTCAGGCTGCTCATGGATCGGGTCTCGGCCCTTTGCAGCTCCAGTTGTCCGCTGCTCCGGACCCT
GGATGTCCAGTGGGTGGAGGACTAAAGGATGCCAGATGCGGGATCTCCTGTCCCCGCCACAGACAACAGGCCAGGTC
AGATGGACAATCGGAGCAAGCTCCGGAACATCGTGGAGCTGCGCCTGGCAGGCCTGGACATCACAGATGCCTCCCTGCGG
CTCATCATCCGCCACATGCCCCCTGCTCTCCAAGTCCACCTCAGTTACTGTAACCACGTCAACGACCAGTCTATCAACCT
GCTCACTGCTGTTGGCACCACCACCCGAGACTCCTTAACCGAGATCAACCTGTCTGACTGCAATAAGGTCACTGATCAGT
GCCTGTCTTCTTCAAACGCTGTGGAACATCTGTGCATATTGACCTGAGGTACTGCAAGCAAGTCACCAAGGAAGGCTGT
GAGCAGTTCATAGCCGAGATGTCTTCTTTCCAAGGGAGAAGCTGTTCAACCACCCGTTTGGGGGATGAGTGAGCCGACAC
TTTCCTTTGGTCTTTCTGAATCGTAACCTGCACTGCTTTCTGGACCATTCTAAGGCGGCCTTTACAAGAAGACATTCCCTG
TCGGAGAGGAGGTGGACTTCGGAGAAATTCTCATACTGAAGCATGAGCTTAGGAGTTTCTGTTAGTGGTAGTGGTGT
TGGACACTTCATTCTTGCAACACCGAGGTTTTGGGTGTTGACATAAAGTGGACCACACACCACATCTGCTGCCGTCTTG
ACACTTTTTTTTGTGTTGGTTGGTTTTGTTACATCTTACATTATGCAGAACTATTTTTGTACAAATTGTTTAAAAGTTATT
TATGCAAGGTTTGAATGCATACCAGTGTTTTTATTGTTTTGAGATTGCCAATTTTCTGATTTCTTAAAGTAGGAGAGA
ATTTAACGTGTACTTCATCGACACAACCCATCTACAAATGTGCCCAGATCTAACAAAGTAGGCTAAGACCTTCCACTTAA
AAGCATGTTTAACTGGAAGTTGAGAGTCTGCTTTGTACCTCAAGAGTTACATGAGCATGTTGTGGATAAATGTAAATTAT
AGTCAAAGTAAGATACTCTGCCAAGTTTCTCTGTAGAGAATTCACCTTTTCTCAAATTTTAAAATTTGACTTCAGCCTT
TGCACTCAGGAGGTTCTGCTCCAGCATGAGCTCTGTACTTACATAGATCTAATTTATACAGTGAGTCAAGACGTAGAAT
AAATGCTCCACATAGCCTTTCTTTTGCTTTTGCTTCTCTCCTCTGAAGTGTGAGTTGAGTTCTCATTTAGGTTTGTAAAC
ATGGCTATTTCTAGTTGTAAAGTTCTGCATTATAAGTGCCATTGTTGTAAGGTGGTGTTCCTAGACCTTCCCTGATG
CGATTTTACCTTTGTTGAATTTGTATAAACAATTGTACAAAAAAACCCTTGAACCTTTGAGGGTTTCTGTTCTAGGA
GTGGACTAGAAAGTTTAAAGCCAGAGTCAGTAAACACTGTTTTGAAGTCCAAA

Regulation of KDM2B and Brg1 on Inflammatory Response of Nasal Mucosa in CRSwNP
Inflammation 42 (4), 1389-1400 (2019)

GCTGAAAATGGTTTCCTAGGACTTTGCAAACGGATCTGCCTAAGTGTGGTGCAAACTTTGTAGATCTCGGCTCTGGCT
TGCTTTATTTATTTATTTTTGGTTTGTTCCTTTGGTCTTCCCTCCTTCCCCCTCGGCCAAAATGCAGGGGGCAGGAG
TGTTGACAATTAATTGGTGAACCTCTCCTAAAAAATGGAGGCAGAGAAAGACTCTGGAAGAAGATTGCGCCCGATTGACC
GCCAGCGATACGACGAGAACGAGGACTTGTGCGACGTGGAGGAGATCGTCAGCGTCCGCGGCTTCAGCCTGGAGGAGAAG
CTTCGCAGCCAGCTGTACCAGGGGACTTCGTGCACGCCATGGAGGGCAAAGATTCAACTATGAGTACGTACAGAGAGA
AGCTCTCAGGGTTCCCTGATATTTGAGAAAAAGGATGGACTGGGAATTAAGATGCCTGACCCTGATTTACAGTCCGAG
ACGTCAAACCTAGTGGGGAGCCGGCGGCTTGTGGACGTGATGGATGTGAACACCCAGAAGGGCACGGAGATGAGCATG
TCCCAGTTTGTGCGTTACTACGAGACGCCGAGGCCAGCGGGACAAGCTGTACAACGTCATCAGCCTAGAGTTCAGCCA
CACCAAGCTGGAGCACTTGGTCAAGCGTCCGACTGTGGTAGACCTGGTGGACTGGGTGGACAACATGTGGCCCCAGCATC
TGAAGGAGAAGCAGACAGAAGCCACGAACGCCATTGCAGAGATGAAGTACCCGAAAGTGAAAAAGTACTGTCTGATGAGC
GTGAAAGGTTGTTTACCGACTTCCACATCGACTTTGGAGGCACTTCCGTTTGGTACCATGTTTTCCGGGTGGGAAGAT
TTTTTGGCTGATTCTCCAACGCTGCACAATTTGGCGCTGTACGAGGAGTGGGTGCTGTGTCAGGCAAACAGAGTGACATCT
TTCTGGGAGACCGTGTGGAACGATGCCAAAGAATTGAGCTGAAGCAGGGCTACACATTTTTCATCCCTTCCGGTTGGATC
CATGCCGTCTACACCCCTGTAGACTCTTTGGTGTTCGGCGGAAACATCCTGCACAGCTTTAACGTGCCCATGCAGCTGCG
GATCTACGAGATCGAGGACAGGACGCGGTGCAGCCCAAATTCGTTACCCCTTCTACTATGAGATGTGCTGGTATGTCC

TGGAGAGATACGTGTA CTGTGTGACCCAGCGCTCCACCTCACTCAGGAATACCAGAGGGAGTCGATGCTTATTGATGCC
CCGAGGAAGCCCAGCATAGACGGCTTCTCTTCGGATTCTCTGGCTGGAGATGGAGGAGGAGGCTGTGATCAGCAGCCTCA
GGAGGAGGAGGAGAAGGACGAGGAGGGCGAGGGCAGGGACAGGGCACCCAAACCGCCACCGATGGCTCCACTTCACCCA
CCAGCACGCCCCTCTGAGGACCAGGAGGCCCTCGGGAAGAAGCCCAAAGCACCTGCCCTGCGATTCTCTAAAAGGACTTTG
TCTAATGAGTCGGAGGAAAGTGTGAAGTCCACCACATTGGCCGTAGACTACCCCAAGACCCCCACCGGCTCTCCCGCCAC
GGAGGTCTCTGCCAAATGGACCCATCTCACTGAGTTTGAAGTGAAGGGCCTGAAAGCTCTGGTGGAGAACTGGAATCCC
TCCCGGAGAACAAGAAGTGTGTCCCCGAGGGCATCGAGGACCCCCAGGCACTCCTGGAGGGTGTGAAGAAGCTCCTGAAG
GAGCACGCAGATGATGACCCTAGTCTGGCCATCACTGGGGTCCCTGTGGTGACTTGGCCAAAGAAGACTCCAAAGAACCG
GGCTGTGGGTGCGGCCAAGGGGAAGCTGGGCCCGGCTCCGCGGTGAAGTTGGCCGCCAACCGGACAACGGCAGGAGCTC
GGCGGCGCCGACGCGATGCCGCAAGTGGAGGCCTGCCTGCGGACCGAGTGGGAGAGTGCCACTTCTGCAAGGACATG
AAGAAGTTCGGGGGCCCCGGGCGCATGAAGCAGAGCTGCATCATGCGGCAGTGCATCGCGCCAGTGCTGCCCCACACCGC
CGTGTGCCCTTGTGTGGCGAGGCGGGGAAGGAAGACACGGTGGAAGAGGAGGAAGGCAAGTTTAACTCATGCTCATGG
AGTGCTCCATCTGCAATGAAATCATCCACCCTGGATGCCTTAAGATTAAGGAGTCAGAGGGTGTGGTCAACGACGAGCTT
CCAAACTGCTGGGAGTGTCCGAAGTGTAAACCACGCCGCAAGACCGGGAACAAAAGCGTGGCCCTGGCTTTAAGTACGC
CTCCAACCTGCCCGGCTCCCTGCTCAAGGAGCAGAAGATGAACCGGGACAACAAGGAAGGGCAGGAACCTGCCAAGCGGA
GGAGTGAGTGTGAGGAGGCGCCCCGGCGCAGGTGCGATGAGCACTCGAAGAAGGTGCCGCCGACGGCCTTCTGCGCAGA
AAGTCTGACGACGTGCACCTGAGGAAGAAGCGGAAATACGAGAAGCCCCAGGAGCTGAGTGACGCAAGCGGCTCAAACC
TGGCAAAGAAGATAAGCTTTTCAGGAAAAAGCGGCGGTCTGGAAGAACGCCGAGGACCGCATGGCGCTGGCCAAACAAGC
CCCTCCGGCGCTTCAAGCAGGAACCCGAGGACGAACTGCCCCGAGGCGCCCCCAAGACCAGGGAGAGCGACCACTCCCGC
TCCAGCTCCCCCACC GCGGACCCAGCACCGAAGGGGCGAGGGCCCGAGGAGAAGAAGAAGGTGAAGATGCGCCGGAA
GCGGCGGCTTCCCAACAAGGAGCTGAGCAGGGAGCTGAGCAAGGAGCTCAACCACGAGATCCAGAGGACGGAGAACAGCC
TGGCCAACGAGAACACGACAGCCCATCAAGTCGGAGCCTGAGAGCGAGGGCGAGGAGCCCAAGCGGCCCCCGGGCATCTGC
GAGCGTCCCCACCGCTTCAGCAAGGGGCTCAACGGCACCCCCCGGAGCTGCGGCACCAGCTGGGGCCCAGCCTGCGCAG
CCCCCCCCGTGTATCTCCCGCCCCCACCCTCCGTGTCCCGCCCCAAGTGTATCCAGATGGAGCGCCATGTGATCCGGC
CACCCCCCATCAGCCCCCGCCTGACTCGCTACCCTGGACGATGGGGCAGCCACGTCATGCACAGGGAGGTGTGGATG
GCCGTCTTCAGCTACCTCAGCCACCAAGACCTGTGTGTGTGCATGCGGGTCTGCAGGACCTGGAACCGCTGGTGTGCGA
TAAGCGGTTGTGGACCCGATTGACCTGAACCACTGCAAGTCTATCACACCCCTGATGCTGAGTGGCATCATCCGGCGAC
AGCCCGTCTCCCTCGACCTCAGCTGGACCAATATCTCCAAGAAGCAGCTGAGCTGGCTCATCAACCGGCTGCCTGGGCTC
CGGGA CTTGGTGTGTG CAGGCTGCTCATGGATCGCGGTCTCGGCCCTTTGCAGCTCCAGTTGTCCGCTGCTCCGGACCT
GGATGTCCAGTGGGTGGAGGGACTAAAGGATGCCAGATGCGGGATCTCCTGTCCCCGCCACAGACAACAGGCCAGGTC
AGATGGACAATCGAGCAAGCTCCGGAACATCGTGAGCTGCGCCTGGCAGGCCTGGACATCACAGATGCCTCCCTGCGG
CTCATCATCCGCCACATGCCCCTGCTCTCCAAGCTCCACCTCAGTTACTGTAACCACGTACCGACCACTATCAACCT
GCTCACTGCTGTTGGCACCACCACCCGAGACTCCTTAACCGAGATCAACCTGTCTGACTGCAATAAGGTCACTGATCAGT
GCCTGTCTTCTTCAAACGCTGTGGAACATCTGTATATTGACCTGAGGTACTGCAAGCAAGTCACCAAGGAAGGCTGT
GAGCAGTTTCATAGCCGAGATGTCTTCTTTCCAAGGGAGAAGCTGTTCAACCACCGTTTGGGGGATGAGTGAGCCGACAC
TTTCCTTTGGTCTTTCTGAATCGTAACTGCACTGCTTTCTGGACCATTTCTAAGGCGGCCTTTACAAGAAGACATTCTCTG
TCGGAGAGGAGGGTGGACTTCGGAGAAATTCTCATACTGAAGCATGAGCTTAGGAGTTTCTGTTAGTGGTAGTGGTGT
TGGACACTTCATTCTTGCAACACCGAGGTTTTGGGTGTTGACATAAAGTGGACCACACACCACATCTGCTGCCGTCTTG
ACACTTTTTTTTTGTTTGGTTGGTTTTGTTACATCTTACATTATGCAGAACTATTTTTGTACAAATTGTTTAAAAGTTATT
TATGCAAGGTTTGAATGCATACCAGTGTTTTTATTGTTTTGAGATTGCCAATTTTCTGATTTCTTAAAGTAGGAGAGA
ATTTAACGTGTACTTCATCGACACAACCCATCTACAAATGTGCCAGATCTAACAAAGTAGGCTAAGACCTTCCACTTAA
AAGCATGTTTAACTGGAAGTTGAGAGTCTGCTTTGTACCTCAAGAGTTACATGAGCATGTTGTGGATAAATGTAAATTAT
AGTCAAAGTAAGATACTCTGCCAAGTTTCCCTGTAGAGAATTCACCTTTCTCAAATTTTAAAATTTGACTTCAGCCTT
TGCACTCAGGAGGTTCTGCTCCAGCATGAGCTCTTGTACTTACATAGATCTAATTTATACAGTGAGTCAAGACGTAGAAT
AAATGCTCCACATAGCCTTTCTTTTGCTTTTGCTTCTCTCCTCTGAAGTGTGAGTTGAGTTCTCATTTAGGTTTGTAAAC
ATGGCTATTTCTAGTTGTAAAGTTCTGCATTTATAAGTGCCATTGTTGTAAGGTGGTGTTCCTAGACCTTCCCTGATG
CGATTTTACCTTTGTTGAATTTGTATAAACAATTGTACAAAAAAACCCTCTTGAACCTTTGAGGGTTTCTGTTCTAGGA
GTGGACTAGAAGTTTAAAGCCAGAGTCAGTAAACACTGTTTTGAAGTCCAAA

Interplay between the Epigenetic Enzyme Lysine (K)-Specific Demethylase 2B and Epstein-Barr Virus Infection

J Virol 93 (13), e00273-19 (2019)

GCTGAAATGGTTTCCTAGGACTTTGCAAACGGATCTGCCTAAGTGTGGTGCAAACTTTGTAGATCTCGGCTCTGGCT
TGCTTTATTTATTTATTTTGGTTTGTTCCTTGGTCTTCCCTCCTTCCCCCTCGGCCAAAATGCAGGGGGCAGGAG
TGTTGACAATTAATTGGTGAACCTCTCTAAAAAATGGAGGCAGAGAAAGACTCTGGAAGAAGATTGCGCCCGATTGACC
GCCAGCGATACGACGAGAACGAGGACTTGTGGACGTGGAGGAGATCGTCAGCGTCCGCGGCTTCAGCCTGGAGGAGAAG
CTTCGACGCCAGCTGTACCAGGGGACTTCGTGCACGCCATGGAGGGCAAAGATTTCAACTATGAGTACGTACAGAGAGA
AGCTCTCAGGGTTCCCTGATATTTGAGAAAAAGGATGGACTGGGAATTAAGATGCCTGACCCTGATTTACAGTCCGAG
ACGTCAAACCTAGTGGGGAGCCGGCGGCTTGTGGACGTGATGGATGTGAACACCCAGAAGGGCACGGAGATGAGCATG
TCCCAGTTTGTGCGTTACTACGAGACGCCCCGAGGCCAGCGGGACAAGCTGTACAACGTCATCAGCCTAGAGTTACGCCA
CACCAAGCTGGAGCACTTGGTCAAGCGTCCGACTGTGGTAGACCTGGTGGACTGGGTGGACAACATGTGGCCCCAGCATC
TGAAGGAGAAGCAGACAGAAGCCACGAACGCCATTGCAGAGATGAAGTACCCGAAAGTGA AAAAAGTACTGTCTGATGAGC
GTGAAAGGTTGTTTACCGACTTCCACATCGACTTTGGAGGCACTTCCGTTTGGTACCATGTTTTCCGGGGTGGGAAGAT
TTTTTGGCTGATTCTCCAACGCTGCACAATTTGGCGCTGTACGAGGAGTGGGTGCTGTCAGGCAAACAGAGTGACATCT
TTCTGGGAGACCGTGTGGAACGATGCCAAAGAATTGAGCTGAAGCAGGGCTACACATTTTTCATCCCTTCCGGTTGGATC
CATGCCGTCTACACCCCTGTAGACTCTTTGGTGTTCGGCGGAAACATCCTGCACAGCTTTAACGTGCCCATGCAGCTGCG
GATCTACGAGATCGAGGACAGGACGCGGTGCAGCCCAAATTCGGTTACCCCTTCTACTATGAGATGTGCTGGTATGTCC
TGGAGAGATACGTGTACTGTGTGACCCAGCGTCCCACCTCACTCAGGAATACCAGAGGGAGTCGATGCTTATTGATGCC
CCGAGGAAGCCAGCATAGACGGCTTCTCTTCGATTCTTGGCTGGAGATGGAGGAGGAGGCCTGTGATCAGCAGCCTCA
GGAGGAGGAGGAGAAGGACGAGGAGGGCGAGGGCAGGGACAGGGCACCCAAACCGCCACCGATGGCTCCACTTCACCCA
CCAGCACGCCCTCTGAGGACCAGGAGGCCCTCGGAAGAAGCCCAAAGCACCTGCCCTGCGATTCTCAAAGGACTTTG
TCTAATGAGTCGGAGGAAAGTGTGAAGTCCACCACATTGGCCGTAGACTACCCCAAGACCCCCACCGGCTCTCCCGCCAC
GGAGGTCTCTGCCAAATGGACCCATCTCACTGAGTTTGAAGTGAAGGGCCTGAAAGCTCTGGTGGAGAACTGGAATCCC
TCCCGGAGAACAAGAAGTGTGTCCCGAGGGCATCGAGGACCCCCAGGCACTCCTGGAGGGTGTGAAGAACGTCTGAAG
GAGCACGCAGATGATGACCCTAGTCTGGCCATCACTGGGGTCCCTGTGGTGACTTGGCCAAAGAAGACTCCAAAGAACCG
GGCTGTGGGTTCGGCCCAAGGGGAAGCTGGGCCCGGCTCCGCGGTGAAGTTGGCCGCAACCGGACAACGGCAGGAGCTC
GGCGGCGCCGACGCGATGCCGCAAGTGCGAGGCCTGCCTGCGGACCGAGTGCGGAGAGTGCCACTTCTGCAAGGACATG
AAGAAGTTCGGGGGCCCCGGGCGCATGAAGCAGAGCTGCATCATGCGGCAGTGCATGCGCCAGTGCTGCCCCACACCGC
CGTGTGCCCTTGTGTGTGGCGAGGCGGGGAAGGAAGACACGGTGAAGAGGAGGAAGGCAAGTTTAACCTCATGCTCATGG
AGTGCTCCATCTGCAATGAAATCATCCACCCTGGATGCCTTAAGATTAAGGAGTCAGAGGGTGTGGTCAACGACGAGCTT
CCAAACTGCTGGGAGTGTCCGAAGTGTAAACACGCCGGCAAGACCGGGAACAAAAGCGTGGCCCTGGCTTTAAGTACGC
CTCCAACCTGCCGGCTCCCTGCTCAAGGAGCAGAAGATGAACCGGGACAACAAGGAAGGGCAGGAACCTGCCAAGCGGA
GGAGTGAGTGTGAGGAGGCGCCCCGGCGCAGTTCGGATGAGCACTCGAAGAAGGTGCCGCCGACGGCCTTCTGCGCAGA
AAGTCTGACGACGTGCACCTGAGGAAGAAGCGGAAATACGAGAAGCCCCAGGAGCTGAGTGACGCAAGCGGCTCAAACC
TGGCAAAGAAGATAAGCTTTTCAGGAAAAAGCGCGGTCTGGAAGAACGCCGAGGACCGCATGGCGCTGGCCAACAAGC
CCCTCCGGCGCTTCAAGCAGGAACCCGAGGACGAACTGCCCCAGGCGCCCCCAAGACCAGGGAGAGCGACCACTCCCGC
TCCAGCTCCCCCACC GCGGACCCAGCACCGAAGGGGCGAGGGCCCGAGGAGAAGAAGAAGGTGAAGATGCGCCGAA
GCGGCGGCTTCCCAACAAGGAGCTGAGCAGGGAGCTGAGCAAGGAGCTCAACCACGAGATCCAGAGGACGGAGAACAGCC
TGGCCAACGAGAACCAGCAGCCCATCAAGTCGGAGCCTGAGAGCGAGGGCGAGGAGCCCAAGCGGCCCCCGGGCATCTGC
GAGCGTCCCCACCGCTTCAGCAAGGGGCTCAACGGCACCCCCGGGAGCTGCGGCACCGAGCTGGGGCCCAGCCTGCGCAG
CCCCCCCCGTGTCATCTCCCGGCCCCCACCCTCCGTGTCCCCGCCCAAGTGTATCCAGATGGAGCGCCATGTGATCCGGC
CACCCCCCATCAGCCCCCGCCTGACTCGCTACCCCTGGACGATGGGGCAGCCACGTCATGCACAGGGAGGTGTGGATG
GCCGTCTTCAGCTACCTCAGCCACCAAGACCTGTGTGTGTGCATGCGGGTCTGCAGGACCTGGAACCGCTGGTGTGCGA
TAAGCGGTTGTGGAACCGCATTGACCTGAACCACTGCAAGTCTATCACACCCTGATGCTGAGTGGCATCATCCGGCGAC
AGCCCGTCTCCCTCGACCTCAGCTGGACCAATATCTCCAAGAAGCAGCTGAGCTGGCTCATCAACCGGCTGCCTGGGCTC
CGGGACTTGGTGTGTCAGGCTGCTCATGGATCGCGGTCTCGGCCCTTTGCAGCTCCAGTTGTCCGCTGCTCCGGACCCT

GGATGTCCAGTGGGTGGAGGGACTAAAGGATGCCAGATGCGGGATCTCCTGTCCCCGCCACAGACAACAGGCCAGGTC
AGATGGACAATCGGAGCAAGCTCCGGAACATCGTGAGCTGCGCCTGGCAGGCCTGGACATCACAGATGCCTCCCTGCGG
CTCATCATCCGCCACATGCCCCCTGCTCTCCAAGCTCCACCTCAGTTACTGTAACCACGTACCGACCAGTCTATCAACCT
GCTCACTGCTGTTGGCACCACCACCCGAGACTCCTTAACCGAGATCAACCTGTCTGACTGCAATAAGGTCACTGATCAGT
GCCTGTCTCTTCTTCAAACGCTGTGGAACATCTGTTCATATTGACCTGAGGTACTGCAAGCAAGTCACCAAGGAAGGCTGT
GAGCAGTTCATAGCCGAGATGTCTTCTTTCCAAGGAGAAGCTGTTCAACCACCCGTTTGGGGGATGAGTGAGCCGACAC
TTTCCTTTGGTCTTTCTGAATCGTAACTGCACTGCTTTCTGGACCATTCTAAGGCGGCCTTTACAAGAAGACATTCTCTG
TCGGAGAGGAGGGTGGACTTCGGAGAAATTCTCATACTGAAGCATGAGCTTAGGAGTTTCTGTTAGTGGTAGTGGTGT
TGGACACTTCATTCTTGAACACCGAGGTTTTGGGTGTTGACATAAAGTGGACCACACACCACATCTGCTGCCGTCTTG
ACACTTTTTTTTTGTTTGGTTGGTTTTGTTACATCTTACATTATGCAGAACTATTTTTGTACAAATTGTTTAAAAGTTATT
TATGCAAGGTTTGAATGCATACCAGTGTTTTTATTGTTTTGAGATTGCCAATTTTCTGATTTCTTTAAGGTAGGAGAGA
ATTTAACGTGTACTTCATCGACACAACCCATCTACAAATGTGCCAGATCTAACAAAGTAGGCTAAGACCTTCCACTTAA
AAGCATGTTTAACTGGAAGTTGAGAGTCTGCTTTGTACCTCAAGAGTTACATGAGCATGTTGTGGATAAATGTAAATTAT
AGTCAAAGTAAGATACTCTGCCAAGTTTCTCTGTAGAGAATTCACTTTTCTCAAATTTTAAAATTTGACTTCAGCCTT
TGCACCTCAGGAGGTTCTGCTCCAGCATGAGCTCTGTACTTACATAGATCTAATTTATACAGTGAGTCAAGACGTAGAAT
AAATGCTCCACATAGCCTTTCTTTTGCTTTTGCTTCTCTCTCTGAAGTGTGAGTTGAGTTCTCATTTAGGTTTGTAAAC
ATGGCTATTTCTAGTTGTAAAGTTCTGCATTTATAAGTGCCATTGTTGTAAGGTGGTGTTCCTAGACCTTCCCTGATG
CGATTTTACCTTTGTTGAATTTGTATAACAATTGTACAAAAAAACCCTCTTGAACCTTTGAGGGTTTCTGTTCTAGGA
GTGGACTAGAAGTTTAAAGCCAGAGTCAGTAAACACTGTTTTGAAGTCCAAA

Violating the splicing rules: TG dinucleotides function as alternative 3' splice sites in U2-dependent introns

Genome Biol 8 (8), R154 (2007)

GCTGAAAATGGTTTCTAGGACTTTGCAAACGGATCTGCCTAAGTGTGGTGCAAACTTTGTAGATCTCGGCTCTGGCT
TGCTTTATTTATTTATTTTTTGGTTTGTCTTTCTTTGGTCTTCCCTCCTTCCCCCTCGGCCAAAATGCAGGGGGCAGGAG
TGTTGACAATTAATTGGTGAACCTCTCTAAAAAATGGAGGCAGAGAAAGACTCTGGAAGAAGATTGCGCCCGATTGACC
GCCAGCGATACGACGAGAACGAGGACTTGTGCGACGTGGAGGAGATCGTCAGCGTCCGCGGCTTACGCTGGAGGAGAAG
CTTCGCAGCCAGCTGTACCAGGGGACTTCGTGCACGCCATGGAGGGCAAAGATTCAACTATGAGTACGTACAGAGAGA
AGCTCTCAGGGTTCCTTGATATTTGAGAAAAAGGATGGACTGGGAATTAAGATGCCTGACCCTGATTTACAGTCCGAG
ACGTCAAACCTCTAGTGGGGAGCCGGCGGCTTGTGGACGTGATGGATGTGAACACCCAGAAGGGCACGGAGATGAGCATG
TCCCAGTTTGTGCGTTACTACGAGACGCCCCAGGGCCAGCGGGACAAGCTGTACAACGTCATCAGCCTAGAGTTCAGCCA
CACCAAGCTGGAGCACTTGGTCAAGCGTCCGACTGTGGTAGACCTGGTGGACTGGGTGGACAACATGTGGCCCCAGCATC
TGAAGGAGAAGCAGACAGAAGCCACGAACGCCATTGCAGAGATGAAGTACCCGAAAGTGA AAAAAGTACTGTCTGATGAGC
GTGAAAGGTTGTTTACCGACTTCCACATCGACTTTGGAGGCACTTCCGTTTGGTACCATGTTTTCCGGGGTGGGAAGAT
TTTTTGGCTGATTCTCCAACGCTGCACAATTTGGCGCTGTACGAGGAGTGGGTGCTGTCAGGCAAACAGAGTGACATCT
TTCTGGGAGACCGTGTGGAACGATGCCAAAGAATTGAGCTGAAGCAGGGCTACACATTTTTCATCCCTTCCGGTTGGATC
CATGCCGTCTACACCCCTGTAGACTCTTTGGTGTTCGGCGGAAACATCCTGCACAGCTTTAACGTGCCCATGCAGTGGC
GATCTACGAGATCGAGGACAGGACGCGGTGCAGCCCAAATTCGGTTACCCCTTCTACTATGAGATGTGCTGGTATGTCC
TGGAGAGATACGTGTACTGTGTGACCCAGCGCTCCACCTCACTCAGGAATACCAGAGGGAGTCGATGCTTATTGATGCC
CCGAGGAAGCCAGCATAGACGGCTTCTCTTCGGATTCTTGGCTGGAGATGGAGGAGGAGGCTGTGATCAGCAGCCTCA
GGAGGAGGAGGAGAAGGACGAGGAGGGCGAGGGACAGGGACCCAAACCGCCACCGATGGCTCCACTTCACCCA
CCAGCACGCCCTCTGAGGACCAGGAGGCCCTCGGGAAGAAGCCCAAAGCACCTGCCCTGCGATTCTCAAAGGACTTTG
TCTAATGAGTCGGAGGAAAGTGTGAAGTCCACCACATTGGCCGTAGACTACCCCAAGACCCCAACCGGCTCTCCCGCCAC
GGAGGTCTCTGCCAAATGGACCCATCTCACTGAGTTTGAAGTGAAGGGCCTGAAAGCTCTGGTGGAGAACTGGAATCCC
TCCCGGAGAAACAAGAAGTGTGTCCCCGAGGGCATCGAGGACCCCAAGGCACTCTGGAGGGTGTGAAGAAGTCTCTGAAG
GAGCACGCAGATGATGACCCTAGTCTGGCCATCACTGGGGTCCCTGTGGTGACTTGGCCAAAGAAGACTCCAAAGAACCG
GGCTGTGGGTGCGGCCAAGGGGAAGCTGGGCCCGGCTCCGCGGTGAAGTTGGCCGCAACCGGACAACGGCAGGAGCTC
GGCGGCGCCGACGCGATGCCGCAAGTGCAGGCCTGCCTGCGGACCGAGTGCAGAGAGTGCCACTTCTGCAAGGACATG

AAGAAGTTCGGGGGCCCCGGGCGCATGAAGCAGAGCTGCATCATGCGGCAGTGCATCGCGCCAGTGTGCCCCACACCGC
CGTGTGCCTTGTGTGTGGCGAGGCGGGGAAGGAAGACACGGTGGAAAGAGGAGGAAGGCAAGTTTAACCTCATGTCTATGG
AGTGTCTCCATCTGCAATGAAATCATCCACCCTGGATGCCTTAAGATTAAGGAGTCAGAGGGTGTGGTCAACGACGAGCTT
CCAAACTGCTGGGAGTGTCCGAAGTGTAAACCACGCCGGCAAGACCGGGAACAAAAGCGTGGCCCTGGCTTTAAGTACGC
CTCCAACCTGCCCCGGCTCCCTGCTCAAGGAGCAGAAGATGAACCGGGACAACAAGGAAGGGCAGGAACCTGCCAAGCGGA
GGAGTGAGTGTGAGGAGGCGCCCCGGCGCAGTCCGGATGAGCACTCGAAGAAGGTGCCGCCGGACGGCCTTCTGCGCAGA
AAGTCTGACGACGTGCACCTGAGGAAGAAGCGGAAATACGAGAAGCCCCAGGAGCTGAGTGACGCAAGCGGCTCAAACC
TGGCAAAGAAGATAAGCTTTTTAGGAAAAAGCGGCGGTCTTGGAAGAACGCCGAGGACCGCATGGCGCTGGCCAACAAGC
CCCTCCGGCGCTTCAAGCAGGAACCCGAGGACGAACTGCCGAGGCGCCCCCAAGACCAGGGAGAGCGACCACTCCCGC
TCCAGCTCCCCACCGCGGGACCCAGCACCGAAGGGGCGAGGGCCCGAGGAGAAGAAGAAGGTGAAGATGCGCCGGAA
GCGGCGGCTTCCAAACAAGGAGCTGAGCAGGAGCTGAGCAAGGAGCTCAACCACGAGATCCAGAGGACGGAGAACAGCC
TGGCCAACGAGAACCAGCAGCCCATCAAGTCGGAGCCTGAGAGCGAGGGCGAGGAGCCCAAGCGGCCCCCGGCATCTGC
GAGCGTCCCCACCGCTTCAGCAAGGGGCTCAACGGCACCCCCCGGAGCTGCGGCACCAGCTGGGGCCCAGCCTGCGCAG
CCCGCCCCGTGTCTCTCCCGCCCCCACCTCCGTGTCCCCGCCCAAGTGTATCCAGATGGAGCGCCATGTGATCCGGC
CACCCCCCATCAGCCCCCGCCTGACTCGCTACCCTGGACGATGGGGCAGCCACGTCATGCACAGGGAGGTGTGGATG
GCCGTCTTCAGCTACCTCAGCCACCAAGACCTGTGTGTGTGCATGCGGGTCTGCAGGACCTGGAACCGCTGGTGTGCGA
TAAGCGGTTGTGGACCCGATTGACCTGAACCACTGCAAGTCTATCACCCCCCTGATGCTGAGTGGCATCATCCGGCGAC
AGCCCGTCTCCCTCGACCTCAGCTGGACCAATATCTCCAAGAAGCAGCTGAGCTGGCTCATCAACCGCTGCCTGGGCTC
CGGACTTGGTGTGTGAGGCTGTCTATGGATCGGGTCTCGGCCCTTTGCAGCTCCAGTTGTCCGCTGTCCGGACCCT
GGATGTCCAGTGGGTGGAGGACTAAAGGATGCCAGATGCGGGATCTCCTGTCCCCGCCACAGACAACAGGCCAGGTC
AGATGGACAATCGGAGCAAGCTCCGGAACATCGTGAGCTGCGCCTGGCAGGCCTGGACATCACAGATGCCTCCCTGCGG
CTCATCATCCGCCACATGCCCCCTGCTCTCCAAGTCCACCTCAGTTACTGTAACCACGTACCGACCAGTCTATCAACCT
GCTCACTGTGTTGGCACCACCACCCGAGACTCCTTAACCGAGATCAACCTGTCTGACTGCAATAAGGTCACTGATCAGT
GCCTGTCTTCTTCAAACGCTGTGGAACATCTGTGCATATTGACCTGAGGTACTGCAAGCAAGTCACCAAGGAAGGCTGT
GAGCAGTTCATAGCCGAGATGTCTTCTTTCCAAGGGAGAAGCTGTTCAACCACCCGTTTGGGGGATGAGTGAGCCGACAC
TTTCCTTTGGTCTTTCTGAATCGTAAGTGCCTGCTTTCTGGACCATTCTTAAGGCGGCCTTTACAAGAAGACATTCTTG
TCGGAGAGGAGGTGGACTTTCGGAGAAATTCTCATACTGAAGCATGAGCTTAGGAGTTTCTGTTAGTGGTAGTGGTGT
TGGACACTTCATTCTTGAACACCGAGGTTTTGGGTGTTGACATAAAGTGGACCACACACCACATCTGCTGCCGTCTTG
ACACTTTTTTTTGGTTGGTTGGTTTTGTTACATCTTACATTATGCAGAACTATTTTTGTACAAATTGTTTAAAAGTTATT
TATGCAAGGTTTGAATGCATACCAGTGTTTTTATTGTTTTGAGATTGCCAATTTTCTGATTTCTTAAAGTAGGAGAGA
ATTTAACGTGTACTTCATCGACACAACCCATCTACAAATGTGCCCAGATCTAACAAAGTAGGCTAAGACCTTCCACTTAA
AAGCATGTTTAACTGGAAGTTGAGAGTCTGCTTTGTACCTCAAGAGTTACATGAGCATGTTGTGGATAAATGTAAATTAT
AGTCAAAGTAAGATACTCTGCCAAGTTTCCTCTGTAGAGAATTCACCTTTTCTCAAATTTTAAAATTTGACTTCAGCCTT
TGCACTCAGGAGGTTCTGCTCCAGCATGAGCTCTGTACTTACATAGATCTAATTTATACAGTGAGTCAAGACGTAGAAT
AAATGCTCCACATAGCCTTTCTTTTGCTTTTGCTTCTCTCTCTGAAGTGTGAGTTGAGTTCTCATTTAGGTTTGTAAAC
ATGGCTATTTCTAGTTGTAAAGTTCTGCATTTATAAGTGCCATTGTTGTAAGGTGGTGTTCCTAGACCTTCCCTGATG
CGATTTTACCTTTGTTGAATTTGTATAAACAATTGTACAAAAAAACCCTCTTGAACCTTTGAGGGTTTCTGTTCTAGGA
GTGGACTAGAAGTTTAAGCCCAGAGTCAGTAAACACTGTTTTGAAGTCCAAA

Polycomb group and SCF ubiquitin ligases are found in a novel BCOR complex that
is recruited to BCL6 targets

Mol Cell Biol 26 (18), 6880-6889 (2006)

GCTGAAAATGGTTTCTAGGACTTTGCAAACGGATCTGCCTAAGTGTGGTGCAAACTTTGTAGATCTCGGCTCTGGCT
TGCTTTATTTATTTATTTTTGGTTTGTCTTTCTTTGGTCTTCCCTCCTTCCCCCTCGGCCAAAATGCAGGGGGCAGGAG
TGTTGACAATTAATTGGTGAACCTCTCTAAAAAAATGGAGGCAGAGAAAGACTCTGGAAGAAGATTGCGCCGATTGACC
GCCAGCGATACGACGAGAACGAGGACTTGTGCGACGTGGAGGAGATCGTCAGCGTCCGCGGCTTCAGCCTGGAGGAGAAG
CTTCGACGCCAGCTGTACCAGGGGACTTCGTGCACGCCATGGAGGGCAAAGATTCAACTATGAGTACGTACAGAGAGA
AGCTCTCAGGGTTCCCTGATATTTGAGAAAAAGGATGGACTGGGAATTAAGATGCCTGACCCTGATTTACAGTCCGAG

ACGTCAAACCTCCTAGTGGGGAGCCGGCGGCTTGTGGACGTGATGGATGTGAACACCCAGAAGGGCACGGAGATGAGCATG
TCCCAGTTTGTGCGTTACTACGAGACGCCCGAGGCCAGCGGGACAAGCTGTACAACGTCATCAGCCTAGAGTTCAGCCA
CACCAAGCTGGAGCACTTGGTCAAGCGTCCGACTGTGGTAGACCTGGTGGACTGGGTGGACAACATGTGGCCCCAGCATC
TGAAGGAGAAGCAGACAGAAGCCACGAACGCCATTGCAGAGATGAAGTACCCGAAAGTGAAAAAGTACTGTCTGATGAGC
GTGAAAGGTTGTTTCACCGACTTCCACATCGACTTTGGAGGCACTTCCGTTTGGTACCATGTTTTCCGGGGTGGGAAGAT
TTTTTGGCTGATTCTCCAACGCTGCACAATTTGGCGCTGTACGAGGAGTGGGTGCTGTCAGGCAAACAGAGTGACATCT
TTCTGGGAGACCGTGTGGAACGATGCCAAAGAATTGAGCTGAAGCAGGGCTACACATTTTTCATCCCTTCCGGTTGGATC
CATGCCGTCTACACCCCTGTAGACTCTTTGGTGTTCGGCGGAAACATCCTGCACAGCTTTAACGTGCCCATGCAGCTGCG
GATCTACGAGATCGAGGACAGGACGCGGTGCAGCCCAAATTCGGTTACCCCTTCTACTATGAGATGTGCTGGTATGTCC
TGGAGAGATACGTGTACTGTGTGACCCAGCGCTCCACCTCACTCAGGAATACCAGAGGGAGTCGATGCTTATTGATGCC
CCGAGGAAGCCAGCATAGACGGCTTCTCTTCGATTCTGGCTGGAGATGGAGGAGGAGGCCTGTGATCAGCAGCCTCA
GGAGGAGGAGGAGAAGGACGAGGAGGGCGAGGGCAGGGACAGGGCACCCAAACCGCCACCGATGGCTCCACTTACCCCA
CCAGCACGCCCCTGAGGACCAGGAGGCCCTCGGGAAGAAGCCCAAAGCACCTGCCCTGCGATTCTCAAAGGACTTTG
TCTAATGAGTCGGAGGAAAGTGTGAAGTCCACCACATTGGCCGTAGACTACCCCAAGACCCCCACCGGCTCTCCCGCCAC
GGAGGTCTCTGCCAAATGGACCCATCTCACTGAGTTTGAAGTGAAGGGCCTGAAAGCTCTGGTGGAGAACTGGAATCCC
TCCCGGAGAAACAAGAAGTGTGTCCCGAGGGCATCGAGGACCCCCAGGCACCTCTGGAGGGTGTGAAGAAGTCTGAAG
GAGCACGCAGATGATGACCCTAGTCTGGCCATCACTGGGGTCCCTGTGGTGAAGTGGCCAAAGAAGACTCCAAAGAACCG
GGCTGTGGGTGCGCCCAAGGGGAAGCTGGGCCCGGCTCCGCGGTGAAGTTGGCCGCCAACCGGACAACGGCAGGAGCTC
GGCGGCGCCGACGCGATGCCGCAAGTGGCAGGCCTGCCTGCGGACCGAGTGGGAGAGTGCCACTTCTGCAAGGACATG
AAGAAGTTCGGGGGCCCCGGGCGCATGAAGCAGAGCTGCATCATGCGGCAGTGCATCGCGCCAGTGCTGCCCCACACCGC
CGTGTGCCTTGTGTGTGGCGAGGCGGGGAAGGAAGACACGGTGAAGAGGAGGAAGGCAAGTTTAACTCATGCTCATGG
AGTGCTCCATCTGCAATGAAATCATCCACCCTGGATGCCTTAAGATTAAGGAGTCAGAGGGTGTGGTCAACGACGAGCTT
CCAAACTGCTGGGAGTGTCCGAAGTGTAAACACGCCGGAAGACCGGGAACAAAAGCGTGGCCCTGGCTTTAAGTACGC
CTCCAACCTGCCCCGCTCCCTGCTCAAGGAGCAGAAGATGAACCGGGACAACAAGGAAGGGCAGGAACCTGCCAAGCGGA
GGAGTGAGTGTGAGGAGGCGCCCCGGCGCAGGTGCGATGAGCACTCGAAGAAGGTGCCGCCGACGGCCTTCTGCGCAGA
AAGTCTGACGACGTGCACCTGAGGAAGAAGCGGAAATACGAGAAGCCCCAGGAGCTGAGTGGACGCAAGCGGCTCAAACC
TGGCAAAGAAGATAAGCTTTTCAGGAAAAAGCGGCGGTCTTGAAGAACGCCGAGGACCGCATGGCGCTGGCCAAACAAGC
CCCTCCGGCGCTTCAAGCAGGAACCCGAGGACGAACTGCCCGAGGCGCCCCCAAGACCAGGGAGAGCGACCACTCCCGC
TCCAGCTCCCCACCGCGGGACCCAGCACCGAAGGGGCGAGGGCCCGGAGGAGAAGAAGAAGGTGAAGATGCGCCGGAA
GCGGCGGCTTCCCAACAAGGAGCTGAGCAGGGAGCTGAGCAAGGAGCTCAACCACGAGATCCAGAGGACGGAGAACAGCC
TGGCCAACGAGAACCAGCAGCCCATCAAGTCGGAGCCTGAGAGCGAGGGCGAGGAGCCAAAGCGGCCCCCGGGCATCTGC
GAGCGTCCCCACCGCTTCAAGCAAGGGGCTCAACGGCACCCCCCGGAGCTGCGGCACCAGCTGGGGCCCAGCCTGCGCAG
CCCCCCCCGTGTCATCTCCCGCCCCCACCCTCCGTGTCCCCGCCCAAGTGTATCCAGATGGAGCGCCATGTGATCCGGC
CACCCCCCATCAGCCCCCGCCTGACTCGCTACCCCTGGACGATGGGGCAGCCACGTCATGCACAGGGAGGTGTGGATG
GCCGTCTTCAGTACCTCAGCCACCAAGACCTGTGTGTGTGCATGCGGGTCTGCAGGACCTGGAACCGCTGGTGTGCGA
TAAGCGGTTGTGACCCGCAATTGACCTGAACCACTGCAAGTCTATCACACCCCTGATGCTGAGTGGCATCATCCGGCGAC
AGCCCGTCTCCCTCGACCTCAGCTGGACCAATATCTCCAAGAAGCAGCTGAGCTGGCTCATCAACCGGCTGCCTGGGCTC
CGGGACTTGGTGTGTGTCAGGCTGCTCATGGATCGCGGTCTCGGCCCTTTGCAGCTCCAGTTGTCCGTGCTCCGGACCCT
GGATGTCCAGTGGGTGGAGGGACTAAAGGATGCCAGATGCGGGATCTCCTGTCCCCGCCACAGACAACAGGCCAGGTC
AGATGGACAATCGGAGCAAGCTCCGGAACATCGTGAGCTGCGCCTGGCAGGCCTGGACATCACAGATGCCTCCCTGCGG
CTCATCATCCGCCACATGCCCCCTGCTCTCCAAGCTCCACCTCAGTTACTGTAACCACGTCACCGACCAGTCTATCAACCT
GCTCACTGCTGTTGGCACCACCACCCGAGACTCCTTAACCGAGATCAACCTGTCTGACTGCAATAAGGTCACTGATCAGT
GCCTGTCTTCTTCAAACGCTGTGGAACATCTGTGCATATTGACCTGAGGTACTGCAAGCAAGTCACCAAGGAAGGCTGT
GAGCAGTTCATAGCCGAGATGTCTTCTTCCAAGGGAGAAGCTGTTCAACCACCCGTTTGGGGGATGAGTGAGCCGACAC
TTTCTTTTGGTCTTTCTGAATCGTAAGTGCAGTCTTTCTGGACCATTCTTAAGGCGGCCTTTACAAGAAGACATTCTTG
TCGGAGAGGAGGGTGGACTTCGGAGAAATTCTCATACTGAAGCATGAGCTTAGGAGTTTCTGTTAGTGGTAGTGGTGT
TGGACACTTCATTCTTGAACACCGAGGTTTTGGGTGTTGACATAAAGTGGACCACACACCACATCTGCTGCCGTCTTG
ACACTTTTTTTTGTGTTGGTTGGTTTTGTTACATCTTACATTATGCAGAACTATTTTTGTACAAATTGTTTAAAAGTTATT

TATGCAAGGTTTGAATGCATACCAGTGTGTTTTATTGTTTTGAGATTGCCAATTTTCCTGATTTCTTAAGGTAGGAGAGA
 ATTTAACGTGTACTTCATCGACACAACCCATCTACAAATGTGCCAGATCTAACAAAGTAGGCTAAGACCTTCCACTTAA
 AAGCATGTTTAACTGGAAGTTGAGAGTCTGCTTTGTACCTCAAGAGTTACATGAGCATGTTGTGGATAAATGTAAATTAT
 AGTCAAAGTAAGATACTCTGCCAAGTTTCTCTGTAGAGAATTCACTTTTCTCAAATTTTAAAATTTGACTTCAGCCTT
 TGCACTCAGGAGGTTCTGCTCCAGCATGAGCTCTTGACTTACATAGATCTAATTTATACAGTGAGTCAAGACGTAGAAT
 AAATGCTCCACATAGCCTTTCTTTTGCTTTTGCTTCTCTCTCTGAAGTGTGAGTTGAGTTCTCATTAGGTTTGTAAAC
 ATGGCTATTTCTAGTTGTAAAGTTCTGCATTTATAAGTGCCATTGTTGTAAGGTGGTGTTCCTAGACCTTCCCTGATG
 CGATTTTACCTTTGTTGAATTTGTATAACAATTGTACAAAAAAACCCTCTTGAACCTTTGAGGGTTTCTGTTCTAGGA
 GTGGACTAGAAGTTTAAAGCCAGAGTCAGTAAACACTGTTTTGAAGTCCAAA

Histone demethylation by a family of JmjC domain-containing proteins
 Nature 439 (7078), 811-816 (2006)

GCTGAAAATGGTTTCTAGGACTTTGCAAACGGATCTGCCTAAGTGTGGTGCAAACTTTGTAGATCTCGGCTCTGGCT
 TGCTTTATTTATTTATTTTTTGGTTTGTTCCTTTGGTCTTCCCTCCTTCCCCCTCGGCCAAAATGCAGGGGGCAGGAG
 TGTTGACAATTAATTGGTGAACCTCTCTAAAAAAATGGAGGCAGAGAAAGACTCTGGAAGAAGATTGCGCCCGATTGACC
 GCCAGCGATACGACGAGAACGAGGACTTGTGCGACGTGGAGGAGATCGTCAGCGTCCGCGGCTTCAGCCTGGAGGAGAAG
 CTTGCGCAGCCAGCTGTACCAGGGGACTTCGTGCACGCCATGGAGGGCAAAGATTTCAACTATGAGTACGTACAGAGAGA
 AGCTCTCAGGGTTCCCTGATATTTGAGAAAAAGGATGGACTGGGAATTAAGATGCCTGACCCTGATTTACAGTCCGAG
 ACGTCAAACCTAGTGGGGAGCCGGCGGCTTGTGGACGTGATGGATGTGAACACCCAGAAGGGCACGGAGATGAGCATG
 TCCCAGTTTGTGCGTTACTACGAGACGCCCCGAGGCCAGCGGGACAAGCTGTACAACGTCATCAGCCTAGAGTTACGCCA
 CACCAAGCTGGAGCACTTGGTCAAGCGTCCGACTGTGGTAGACCTGGTGGACTGGGTGGACAACATGTGGCCCCAGCATC
 TGAAGGAGAAGCAGACAGAAGCCACGAACGCCATTGCAGAGATGAAGTACCCGAAAGTGAAAAAGTACTGTCTGATGAGC
 GTGAAAGGTTGTTTACCGACTTCCACATCGACTTTGGAGGCACTTCCGTTTGGTACCATGTTTTCCGGGTGGGAAGAT
 TTTTTGGCTGATTCTCCAACGCTGCACAATTTGGCGCTGTACGAGGAGTGGGTGCTGTGAGGCAAACAGAGTGACATCT
 TTCTGGGAGACCGTGTGGAACGATGCCAAAGAATTGAGCTGAAGCAGGGCTACACATTTTTTCATCCCTTCCGGTTGGATC
 CATGCCGTCTACACCCCTGTAGACTCTTTGGTGTTCGGCGGAAACATCCTGCACAGCTTTAACGTGCCCATGCAGCTGCG
 GATCTACGAGATCGAGGACAGGACGCGGTGCAGCCCAAATTCGGTTACCCCTTCTACTATGAGATGTGCTGGTATGTCC
 TGGAGAGATACGTGTACTGTGTGACCCAGCGCTCCACCTCACTCAGGAATACCAGAGGGAGTCGATGCTTATTGATGCC
 CCGAGGAAGCCAGCATAGACGGCTTCTCTTCGGATTCTTGGCTGGAGATGGAGGAGGAGGCCTGTGATCAGCAGCCTCA
 GGAGGAGGAGGAGAAGGACGAGGAGGGCGAGGGCAGGGACAGGGCACCCAAACCGCCACCGATGGCTCCACTTACCCCA
 CCAGCACGCCCTCTGAGGACCAGGAGGCCCTCGGGAAGAAGCCCAAAGCACCTGCCCTGCGATTCTCAAAGGACTTTG
 TCTAATGAGTCGGAGGAAAGTGTGAAGTCCACCACATTGGCCGTAGACTACCCCAAGACCCCCACCGGCTCTCCCGCCAC
 GGAGGTCTCTGCCAAATGGACCCATCTCACTGAGTTTGAAGTGAAGGGCTGAAAGCTCTGGTGGAGAACTGGAATCCC
 TCCCGGAGAACAAGAAGTGTGTCCCGAGGGCATCGAGGACCCCAAGGCACTCCTGGAGGGTGTGAAGAAGTCTCTGAAG
 GAGCACGCAGATGATGACCCTAGTCTGGCCATCACTGGGGTCCCTGTGGTGACTTGGCCAAAGAAGACTCCAAAGAACCG
 GGCTGTGGGTTCGGCCCAAGGGGAAGCTGGGCCCGGCTCCGCGGTGAAGTTGGCCGCAACCGGACAACGGCAGGAGCTC
 GCGGCGCGCGGACGCGATGCCGCAAGTGCAGGCCTGCCTGCGGACCGAGTGCAGAGAGTGCCACTTCTGCAAGGACATG
 AAGAAGTTCGGGGGCCCCGGGCGCATGAAGCAGAGCTGCATCATGCGGCAGTGATCGCGCCAGTGCTGCCCCACACCGC
 CGTGTGCCCTTGTGTGGCGAGGCGGGGAAGGAAGACACGGTGAAGAGGAGGAAGGCAAGTTTAACTCATGCTCATGG
 AGTGCTCCATCTGCAATGAAATCATCCACCCTGGATGCCTTAAGATTAAGGAGTCAGAGGGTGTGGTCAACGACGAGCTT
 CCAAAGTCTGGGAGTGTCCGAAGTGTAAACCACGCGGCAAGACCGGGAACAAAAGCGTGGCCCTGGCTTTAAGTACGC
 CTCCAACCTGCCCGGCTCCCTGCTCAAGGAGCAGAAGATGAACCGGGACAACAAGGAAGGGCAGGAACCTGCCAAGCGGA
 GGAGTGAGTGTGAGGAGGCGCCCCGGCGCAGTTCGGATGAGCACTCGAAGAAGGTGCCGCGGACGGCCTTCTGCGCAGA
 AAGTCTGACGACGTGCACCTGAGGAAGAAGCGGAAATACGAGAAGCCCCAGGAGCTGAGTGACGCAAGCGGCTCAAACC
 TGGCAAAGAAGATAAGCTTTTTAGGAAAAAGCGCGGTCTGGAAGAACCGGAGGACCGCATGGCGCTGGCCAACAAGC
 CCTCCGGCGCTTCAAGCAGGAACCCGAGGACGAACTGCCCGAGGCGCCCCCAAGACCAGGGAGAGCGACCACTCCCGC
 TCCAGCTCCCCCACCAGGACCCAGCACCAGGGGGCCGAGGGCCCGAGGAGAAGAAGAAGGTGAAGATGCGCCGGAA
 GCGGCGGCTTCCCAACAAGGAGCTGAGCAGGGAGCTGAGCAAGGAGCTCAACCACGAGATCCAGAGGACGGAGAACAGCC

TGGCCAACGAGAACCAGCAGCCCATCAAGTCGGAGCCTGAGAGCGAGGGCGAGGAGCCCAAGCGGCCCCCGGGCATCTGC
GAGCGTCCCCACCGCTTCAGCAAGGGGCTCAACGGCACCCCCGGGAGCTGCGGCACCAGCTGGGGCCCAGCCTGCGCAG
CCCGCCCCGTGTCATCTCCCGGCCCCACCTCCGTGTCCCGCCCAAGTGTATCCAGATGGAGCGCCATGTGATCCGGC
CACCCCCCATCAGCCCCCGCCTGACTCGTACCCCTGGACGATGGGGCAGCCCACGTCATGCACAGGGAGGTGTGGATG
GCCGTCTTCAGCTACCTCAGCCACCAAGACCTGTGTGTGTGCATGCGGGTCTGCAGGACCTGGAACCGCTGGTGCTGCGA
TAAGCGGTTGTGGACCCGCATTGACCTGAACCACTGCAAGTCTATCACACCCCTGATGCTGAGTGGCATCATCCGGCGAC
AGCCCGTCTCCCTCGACCTCAGCTGGACCAATATCTCCAAGAAGCAGCTGAGCTGGCTCATCAACCGGTGCCTGGGCTC
CGGGACTTGGTGCTGTCAGGCTGCTCATGGATCGGGTCTCGGCCCTTTGCAGCTCCAGTTGTCCGCTGCTCCGGACCCT
GGATGTCCAGTGGGTGGAGGACTAAAGGATGCCAGATGCGGGATCTCCTGTCCCCGCCACAGACAACAGGCCAGGTC
AGATGGACAATCGGAGCAAGCTCCGGAACATCGTGGAGCTGCGCCTGGCAGGCCTGGACATCACAGATGCCTCCCTGCGG
CTCATCATCCGCCACATGCCCCTGTCTCCAAGCTCCACCTCAGTTACTGTAACCACGTCACCGACCAGTCTATCAACCT
GCTCACTGCTGTTGGCACCACCACCCGAGACTCCTTAACCGAGATCAACCTGTCTGACTGCAATAAGGTCACTGATCAGT
GCCTGTCTTCTTCAAACGCTGTGGAACATCTGTCAATTTGACCTGAGGTACTGCAAGCAAGTCACCAAGGAAGGCTGT
GAGCAGTTCATAGCCGAGATGTCTTCTTCCAAGGAGAAGCTGTTCAACCACCCGTTTGGGGGATGAGTGAGCCGACAC
TTTCTTTTGGTCTTTCTGAATCGTAACTGCACTGCTTTCTGGACCATTTCTAAGGCGGCCTTTACAAGAAGACATTCTTG
TCGGAGAGGAGGTGGACTTCGGAGAAATTCTCATACTGAAGCATGAGCTTAGGAGTTTCTGTTAGTGGTAGTGGTGT
TGGACACTTCATTCTTGAACACCGAGGTTTTGGGTGTTGACATAAAGTGGACCACACACCACATCTGCTGCCGTCTTG
ACACTTTTTTTTGTGGTTGGTTTTGTACATCTTACATTATGCAGAATTTTTTGTACAAATTGTTTAAAAGTTATT
TATGCAAGGTTTGAATGCATACCAGTGTTTTTATTGTTTTGAGATTGCCAATTTCTGATTTCTTAAAGGTAGGAGAGA
ATTTAACGTGTACTTCATCGACACAACCCATCTACAAATGTGCCAGATCTAACAAAGTAGGCTAAGACCTTCCACTTAA
AAGCATGTTTAACTGGAAGTTGAGAGTCTGCTTTGTACCTCAAGAGTTACATGAGCATGTTGTGGATAAATGTAAATTAT
AGTCAAAGTAAGATACTCTGCCAAGTTTCTCTGTAGAGAATTCACCTTTCTCAAATTTTAAAATTTGACTTCAGCCTT
TGCCTCAGGAGGTTCTGCTCCAGCATGAGCTCTGTACTTACATAGATCTAATTTATACAGTGAGTCAAGACGTAGAAT
AAATGCTCCACATAGCCTTTCTTTTGTCTTTGCTTCTCTCTGAGTGTGAGTTGAGTTCTCATTTAGTTTGTAAAC
ATGGCTATTTCTAGTTGTAAAGTTCTGCATTATAAGTGCCATTGTTGTAAGGTGGTGTTCCTAGACCTTCCCTGATG
CGATTTTACCTTTGTTGAATTTGTATAACAATTGTACAAAAAACCCTCTTGAACCTTTGAGGGTTTCTGTTCTAGGA
GTGGACTAGAAGTTTAAAGCCAGAGTCAGTAAACACTGTTTTGAAGTCCAAA

Systematic analysis and nomenclature of mammalian F-box proteins

Genes Dev 18 (21), 2573-2580 (2004)

GCTGAAAATGGTTTCTAGGACTTTGCAAACGGATCTGCCTAAGTGTGGTGCAAACTTTGTAGATCTCGGCTCTGGCT
TGCTTTATTTATTTATTTTGGTTTGTCTTCTTGGTCTTCCCTCCTTCCCCCTCGGCCAAAATGCAGGGGGCAGGAG
TGTTGACAATTAATTGGTGAACCTCTCTAAAAAATGGAGGCAGAGAAAGACTCTGGAAGAAGATTGCGCCGATTGACC
GCCAGCGATACGACGAGAACGAGGACTTGTGCGACGTGGAGGAGATCGTCAGCGTCCGCGGCTTACGCTGGAGGAGAAG
CTTCGCAGCCAGCTGTACCAGGGGACTTCGTGCACGCCATGGAGGGCAAAGATTCAACTATGAGTACGTACAGAGAGA
AGCTCTCAGGGTTCCTGATATTTGAGAAAAAGGATGGACTGGGAATTAAGATGCCTGACCCTGATTTACAGTCCGAG
ACGTCAAACCTCTAGTGGGGAGCCGGCGGCTTGTGGACGTGATGGATGTGAACACCCAGAAGGGCACGGAGATGAGCATG
TCCCAGTTTGTGCGTTACTACGAGACGCCCCGAGGCCAGCGGGACAAGCTGTACAACGTCATCAGCCTAGAGTTACAGCA
CACCAAGCTGGAGCACTTGGTCAAGCGTCCGACTGTGGTAGACCTGGTGGACTGGGTGGACAACATGTGGCCCCAGCATC
TGAAGGAGAAGCAGACAGAAGCCACGAACGCCATTGCAGAGATGAAGTACCCGAAAGTGAAGAAAGTACTGTCTGATGAGC
GTGAAGGTTGTTTACCGACTTCCACATCGACTTTGGAGGCACTTCCGTTTGGTACCATGTTTTCCGGGTGGGAAGAT
TTTTTGGCTGATTCCTCCAACGCTGCACAATTTGGCGCTGTACGAGGAGTGGGTGCTGTCAGGCAAACAGAGTGACATCT
TTCTGGGAGACCGTGTGGAACGATGCCAAGAATTGAGCTGAAGCAGGGCTACACATTTTTCATCCCTTCCGGTTGGATC
CATGCCGTCTACACCCCTGTAGACTCTTGGTGTTCGGCGGAAACATCCTGCACAGCTTTAACGTGCCCATGCAGCTGCG
GATCTACGAGATCGAGGACAGGACGCGGTGCAGCCAAATTCGTTACCCCTTCTACTATGAGATGTGCTGGTATGTCC
TGGAGAGATACGTGACTGTGTGACCCAGCGTCCACCTCACTCAGGAATACCAGAGGGAGTCGATGCTTATTGATGCC
CCGAGGAAGCCAGCATAGACGGCTTCTTTCGGATTCTGGCTGGAGATGGAGGAGGAGGCCTGTGATCAGCAGCCTCA
GGAGGAGGAGGAGAAGGACGAGGAGGGCGAGGGCAGGGACAGGGCACCCAAACCGCCACCGATGGCTCCACTTCACCCA

CCAGCACGCCCTCTGAGGACCAGGAGGCCCTCGGGAAGAAGCCCAAAGCACCTGCCCTGCGATTCTCTAAAAGGACTTTG
 TCTAATGAGTCGGAGGAAAAGTGTGAAGTCCACCACATTGGCCGTAGACTACCCCAAGACCCCCACCGGCTCTCCCGCCAC
 GGAGGTCTCTGCCAAATGGACCCATCTCACTGAGTTTGAAGTGAAGGGCCTGAAAGCTCTGGTGGAGAACTGGAATCCC
 TCCCGGAGAACAAAGTGTGTCCCGAGGGCATCGAGGACCCCCAGGCACTCCTGGAGGGTGTGAAGAACGTCCTGAAG
 GAGCACGCAGATGATGACCCTAGTCTGGCCATCACTGGGGTCCCTGTGGTGACTTGGCCAAAGAAGACTCCAAAGAACCG
 GGCTGTGGGTGCGCCCAAGGGGAAGCTGGGCCCGGCCTCCGCGGTGAAGTTGGCCGCCAACCGGACAACGGCAGGAGCTC
 GCGGGCGCCGACGCGATGCCGCAAGTGCAGGCCTGCCTGCGGACCGAGTGCAGAGAGTGCCACTTCTGCAAGGACATG
 AAGAAGTTCGGGGGCCCCGGGCGCATGAAGCAGAGCTGCATCATGCGGCAGTGCATCGCGCCAGTGTGCCCCACACCGC
 CGTGTGCCCTTGTGTGTGGCGAGGCGGGGAAGGAAGACACGGTGAAGAGGAGGAAGGCAAGTTTAACCTCATGCTCATGG
 AGTGCTCCATCTGCAATGAAATCATCCACCCTGGATGCCTTAAGATTAAGGAGTCAGAGGGTGTGGTCAACGACGAGCTT
 CCAAAGTGTGGGAGTGTCCGAAGTGTAAACACGCCGGCAAGACCGGGAACAAAAGCGTGGCCCTGGCTTTAAGTACGC
 CTCCAACCTGCCCCGGCTCCCTGCTCAAGGAGCAGAAGATGAACCGGGACAACAAGGAAGGGCAGGAACCTGCCAAGCGGA
 GGAGTGAGTGTGAGGAGGCGCCCCGGCGCAGGTCCGATGAGCACTCGAAGAAGGTGCCGCCGGACGGCCTTCTGCGCAGA
 AAGTCTGACGACGTGCACCTGAGGAAGAAGCGGAAATACGAGAAGCCCCAGGAGCTGAGTGGACGCAAGCGGCTCAAAAC
 TGGCAAAGAAGATAAGCTTTTTAGGAAAAAGCGCGGTCTGGAAGAACGCCGAGGACCGCATGGCGCTGGCCAACAAGC
 CCCTCCGGCGCTTCAAGCAGGAACCCGAGGACGAACTGCCGAGGCGCCCCCAAGACCAGGGAGAGCGACCACTCCCGC
 TCCAGCTCCCCCACC GCGGACCCAGCACCGAAGGGGCGAGGGCCCGAGGAGAAGAAGAAGGTGAAGATGCGCCGGAA
 GCGGCGGCTTCCCAACAAGGAGCTGAGCAGGGAGCTGAGCAAGGAGCTCAACCACGAGATCCAGAGGACGGAGAACAGCC
 TGGCCAACGAGAACCAGCAGCCCATCAAGTCGGAGCCTGAGAGCGAGGGCGAGGAGCCCAAGCGGCCCCCGGGCATCTGC
 GAGCGTCCCCACCGCTTCAGCAAGGGGCTCAACGGCACCCCCCGGAGCTGCGGCACCAGCTGGGGCCCAGCCTGCGCAG
 CCGCCCCGTGTCATCTCCCGGCCCCCACCCTCCGTGTCCCCGCCCAAGTGTATCCAGATGGAGCGCCATGTGATCCGGC
 CACCCCCCATAGCCCCCGCCTGACTCGCTACCCCTGGACGATGGGGCAGCCCACGTCATGCACAGGGAGGTGTGGATG
 GCCGTCTTCAGCTACCTCAGCCACCAAGACCTGTGTGTGTGCATGCGGGTCTGCAGGACCTGGAACCGCTGGTGTGCGA
 TAAGCGGTTGTGAGCCCGCATTGACCTGAACCACTGCAAGTCTATCACACCCCTGATGCTGAGTGGCATCATCCGGCGAC
 AGCCCGTCTCCCTCGACCTCAGCTGGACCAATATCTCCAAGAAGCAGCTGAGCTGGCTCATCAACCGGCTGCCTGGGCTC
 CGGGACTTGGTGTCTCAGGCTGCTCATGGATCGCGGTCTCGGCCCTTTGCAGCTCCAGTTGTCCGCTGCTCCGGACCCT
 GGATGTCCAGTGGGTGGAGGGACTAAAGGATGCCAGATGCGGGATCTCCTGTCCCCGCCACAGACAACAGGCCAGGTC
 AGATGGACAATCGGAGCAAGCTCCGGAACATCGTGAGCTGCGCCTGGCAGGCCTGGACATCACAGATGCCTCCCTGCGG
 CTCATCATCCGCCACATGCCCCCTGCTCTCCAAGTCCACCTCAGTTACTGTAACCACGTCAACGACAGTCTATCAACCT
 GCTCACTGCTGTTGGCACCACCACCCGAGACTCCTTAACCGAGATCAACCTGTCTGACTGCAATAAGGTCACTGATCAGT
 GCCTGTCTTCTTCAAACGCTGTGGAACATCTGTGCATATTGACCTGAGGTACTGCAAGCAAGTCACCAAGGAAGGCTGT
 GAGCAGTTCATAGCCGAGATGTCTTCTTTCCAAGGGAGAAGCTGTTCAACCACCCGTTTGGGGGATGAGTGAGCCGACAC
 TTTCTTTTGGTCTTTCTGAATCGTAAGTGCATGCTTTCTGGACCATTCTTAAGGCGGCCTTTACAAGAAGACATTCTTG
 TCGGAGAGGAGGTGGACTTCGGAGAAATTCTCATACTGAAGCATGAGCTTAGGAGTTTCTGTAGTGGTAGTGGTGT
 TGGACACTTCATTCTTGCAACACCGAGGTTTTGGGTGTTGACATAAAGTGGACCACACACCACATCTGCTGCCGTCTTG
 AACTTTTTTTTGGTTGGTTGGTTTTGTTACATCTTACATTATGCAGAACTATTTTTGTACAAATTGTTTAAAAGTTATT
 TATGCAAGGTTTGAATGCATACCAGTGTTTTTATTGTTTTGAGATTGCCAATTTTCTGATTTCTTAAAGTAGGAGAGA
 ATTTAACGTGTACTTCATCGACACAACCCATCTACAAATGTGCCAGATCTAACAAAGTAGGCTAAGACCTTCCACTTAA
 AAGCATGTTTAACTGGAAGTTGAGAGTCTGCTTTGTACCTCAAGAGTTACATGAGCATGTTGTGGATAAATGTAAATTAT
 AGTCAAAGTAAGATACTCTGCCAAGTTTCTCTGTAGAGAATTCACTTTTCTCAAATTTTAAAATTTGACTTCAGCCTT
 TGCACCTCAGGAGGTTCTGCTCCAGCATGAGCTCTTGTACTTACATAGATCTAATTTATACAGTGAGTCAAGACGTAGAAT
 AAATGCTCCACATAGCCTTTCTTTTGCTTTTGCTTCTCTCTCTGAAGTGTGAGTTGAGTTCTATTTAGGTTTGTAAC
 ATGGCTATTTCTAGTTGTAAAGTTCTGCATTTATAAGTGCCATTGTTGTAAGGTGGTGTTCCTAGACCTTCCCTGATG
 CGATTTTACCTTTGTTGAATTTGTATAAACAATTGTACAAAAAAACCCTTGAACCTTTGAGGGTTTCTGTTCTAGGA
 GTGGACTAGAAGTTTAAAGCCAGAGTCAGTAAACACTGTTTTGAAGTCCAAA

Large-scale characterization of HeLa cell nuclear phosphoproteins
 Proc Natl Acad Sci U S A 101 (33), 12130-12135 (2004)

GCTGAAAATGGTTTCCTAGGACTTTGCAAACGGATCTGCCTAAGTGTTGGTGCAAACTTTGTAGATCTCGGCTCTGGCT
TGCTTTATTTATTTATTTTTTGGTTTGTTCCTTTGGTCTTCCCTCCTTCCCCCTCGGCCAAAATGCAGGGGGCAGGAG
TGTTGACAATTAATTGGTGAACCTCTCCTAAAAAATGGAGGCAGAGAAAGACTCTGGAAGAAGATTGCGCCCGATTGACC
GCCAGCGATACGACGAGAACGAGGACTTGTTCGGACGTGGAGGAGATCGTCAGCGTCCGCGGCTTCAGCCTGGAGGAGAAG
CTTCGCAGCCAGCTGTACCAGGGGACTTCGTGCACGCCATGGAGGGCAAAGATTCAACTATGAGTACGTACAGAGAGA
AGCTCTCAGGGTTCCTTGATATTTTCGAGAAAAGGATGGACTGGGAATTAAGATGCCTGACCCTGATTTACAGTCCGAG
ACGTCAAACCTCCTAGTGGGGAGCCGGCGGCTTGTGGACGTGATGGATGTGAACACCCAGAAGGGGCACGGAGATGAGCATG
TCCCAGTTTGTGCGTTACTACGAGACGCCCCGAGGCCAGCGGGACAAGCTGTACAACGTCATCAGCCTAGAGTTCAGCCA
CACCAAGCTGGAGCACTTGGTCAAGCGTCCGACTGTGGTAGACCTGGTGGACTGGGTGGACAACATGTGGCCCCAGCATC
TGAAGGAGAAGCAGACAGAAGCCACGAACGCCATTGCAGAGATGAAGTACCCGAAAGTGAAAAAGTACTGTCTGATGAGC
GTGAAAGGTTGTTTACCGACTTCCACATCGACTTTGGAGGCACTTCCGTTTGGTACCATGTTTTCCGGGGTGGGAAGAT
TTTTTGGCTGATTCTCCAACGCTGCACAATTTGGCGCTGTACGAGGAGTGGGTGCTGTCAGGCAAACAGAGTGACATCT
TTCTGGGAGACCGTGTGGAACGATGCCAAAGAATTGAGCTGAAGCAGGGCTACACATTTTTTCATCCCTTCCGGTTGGATC
CATGCCGTCTACACCCCTGTAGACTCTTTGGTGTTCGGCGGAAACATCCTGCACAGCTTTAACGTGCCCATGCAGCTGCG
GATCTACGAGATCGAGGACAGGACGCGGTGCAGCCCAAATTCGGTTACCCCTTCTACTATGAGATGTGCTGGTATGTCC
TGGAGAGATACGTGTACTGTGTGACCCAGCGCTCCACCTCACTCAGGAATACCAGAGGGAGTCGATGCTTATTGATGCC
CCGAGGAAGCCAGCATAGACGGCTTCTCTTCGGATTCTGGCTGGAGATGGAGGAGGAGGCTGTGATCAGCAGCCTCA
GGAGGAGGAGGAGAAGGACGAGGAGGGCGAGGGCAGGGACAGGGCACCCAAACCGCCACCGATGGCTCCACTTCACCCA
CCAGCACGCCCTCTGAGGACCAGGAGGCCCTCGGGAAGAAGCCCAAAGCACCTGCCCTGCGATTCTCAAAGGACTTTG
TCTAATGAGTCGGAGGAAAGTGTGAAGTCCACCACATTGGCCGTAGACTACCCCAAGACCCCCACCGGCTCTCCCGCCAC
GGAGGTCTCTGCCAAATGGACCCATCTCACTGAGTTTGAAGTGAAGGGCCTGAAAGCTCTGGTGGAGAACTGGAATCCC
TCCCGGAGAAACAAGAAGTGTGTCCCGAGGGCATCGAGGACCCCCAGGCACCTCTGGAGGGTGTGAAGAAGCTCCTGAAG
GAGCACGCAGATGATGACCCTAGTCTGGCCATCACTGGGGTCCCTGTGGTGACTTGGCCAAAGAAGACTCCAAAGAACC
GGCTGTGGGTTCGGCCCAAGGGGAAGCTGGGCCCGCCTCCGCGGTGAAGTTGGCCGCAACCGGACAACGGCAGGAGCTC
GGCGGCGCCGACGCGATGCCGCAAGTGCAGGCCTGCCTGCGGACCGAGTGCAGAGAGTGCCACTTCTGCAAGGACATG
AAGAAGTTCGGGGGCCCCGGGCGCATGAAGCAGAGCTGCATCATGCGGCAGTGCATCGCGCCAGTGTGCCCCACACCGC
CGTGTGCCCTTGTGTGTGGCGAGGCGGGGAAGGAAGACACGGTGAAGAGGAGGAAGGCAAGTTTAACTCATGCTCATGG
AGTGCTCCATCTGCAATGAAATCATCCACCCTGGATGCCTTAAGATTAAGGAGTCAGAGGGTGTGGTCAACGACGAGCTT
CCAAACTGCTGGGAGTGTCCGAAGTGTAAACACGCCGGCAAGACCGGGAACAAAAGCGTGGCCCTGGCTTTAAGTACGC
CTCCAACCTGCCCGGCTCCCTGTCAAGGAGCAGAAGATGAACCGGGACAACAAGGAAGGGCAGGAACCTGCCAAGCGGA
GGAGTGAGTGTGAGGAGGCGCCCCGGCGCAGTCCGATGAGCACTCGAAGAAGGTGCCGCGGACGGCCTTCTGCGCAGA
AAGTCTGACGACGTGCACCTGAGGAAGAAGCGGAAATACGAGAAGCCCCAGGAGCTGAGTGACGCAAGCGGCTCAAACC
TGGCAAAGAAGATAAGCTTTTTAGGAAAAAGCGCGGTCTGGAAGAACGCCGAGGACCGCATGGCGCTGGCCAAACAAGC
CCCTCCGGCGCTTCAAGCAGGAACCCGAGGACGAACTGCCCGAGGCGCCCCCAAGACCAGGGAGAGCGACCACTCCCGC
TCCAGCTCCCCACCGCGGGACCCAGCACCGAAGGGGCGAGGGCCCGAGGAGAAGAAGAAGGTGAAGATGCGCCGAA
GCGGCGGCTTCCCAACAAGGAGCTGAGCAGGGAGCTGAGCAAGGAGCTCAACCACGAGATCCAGAGGACGGAGAACAGCC
TGGCCAACGAGAACCAGCAGCCCATCAAGTCGGAGCCTGAGAGCGAGGGCGAGGAGCCAAAGCGGCCCCCGGGCATCTGC
GAGCGTCCCCACCGCTTCAGCAAGGGGCTCAACGGCACCCCCGGGAGCTGCGGCACCACTGGGGCCCAGCCTGCGCAG
CCCGCCCCGTGCATCTCCCGGCCCCACCCTCCGTGTCCCGCCCCAAGTGTATCCAGATGGAGCGCCATGTGATCCGGC
CACCCCCCATCAGCCCCCGCCTGACTCGCTACCCCTGGACGATGGGGCAGCCACGTCATGCACAGGGAGGTGTGGATG
GCCGTCTTCAGCTACCTCAGCCACCAAGACCTGTGTGTGTGCATGCGGGTCTGCAGGACCTGGAACCGCTGGTGTGCGA
TAAGCGGTTGTGGAACCGCATTGACCTGAACCACTGCAAGTCTATCACACCCTGATGCTGAGTGGCATCATCCGGCGAC
AGCCCGTCTCCCTCGACCTCAGCTGGACCAATATCTCCAAGAAGCAGCTGAGCTGGCTCATCAACCGGCTGCCTGGGCTC
CGGACTTGGTGTGTCAGGCTGCTCATGGATCGCGGTCTCGGCCCTTTGCAGCTCCAGTTGTCCGCTGCTCCGGACCCT
GGATGTCCAGTGGGTGGAGGGACTAAAGGATGCCAGATGCGGGATCTCCTGTCCCCGCCACAGACAACAGGCCAGGTC
AGATGGACAATCGGAGCAAGCTCCGGAACATCGTGAGCTGCGCCTGGCAGGCCTGGACATCACAGATGCCTCCCTGCGG
CTCATCATCCGCCACATGCCCTGCTCTCCAAGTCCACCTCAGTTACTGTAACCACGTCACCGACAGTCTATCAACCT
GCTCACTGCTGTTGGCACCACCACCCGAGACTCCTTAACCGAGATCAACCTGTCTGACTGCAATAAGGTCACTGATCAGT

GCCTGTCCTTCTTCAAACGCTGTGGAAACATCTGTCATATTGACCTGAGGTACTGCAAGCAAGTCACCAAGGAAGGCTGT
GAGCAGTTCATAGCCGAGATGTCTTCTTTCCAAGGGAGAAGCTGTTCAACCACCCGTTTGGGGGATGAGTGAGCCGACAC
TTTCCTTTGGTCTTTCTGAATCGTAACTGCACTGCTTTCTGGACCATTCTAAGGCGGCCTTTACAAGAAGACATTCTTG
TCGGAGAGGAGGGTGGACTTCGGAGAAATTCTCATACTGAAGCATGAGCTTAGGAGTTTCTGTTAGTGGTAGTGGTGT
TGGACACTTCATTCTTGCAACACCGAGGTTTTGGGTGTTGACATAAAGTGGACCACACACCACATCTGCTGCCGTCTTG
ACACTTTTTTTTGGTTTGGTTGGTTTTGTTACATCTTACATTATGCAGAACTATTTTTGTACAAATTGTTTAAAAGTTATT
TATGCAAGGTTTGAATGCATACCAGTGTTTTTATTGTTTTGAGATTGCCAATTTTCTGATTTCTTAAGGTAGGAGAGA
ATTTAACGTGTACTTCATCGACACAACCCATCTACAAATGTGCCCAGATCTAACAAAGTAGGCTAAGACCTTCCACTTAA
AAGCATGTTTAACTGGAAGTTGAGAGTCTGCTTTGTACCTCAAGAGTTACATGAGCATGTTGTGGATAAATGTAAATTAT
AGTCAAAGTAAGATACTCTGCCAAGTTTCTCTGTAGAGAATTCACTTTTCTCAAATTTTAAAATTTGACTTCAGCCTT
TGCACTCAGGAGGTTCTGCTCCAGCATGAGCTCTGTACTTACATAGATCTAATTTATACAGTGAGTCAAGACGTAGAAT
AAATGCTCCACATAGCCTTTCTTTTGCTTTTGCTTCTCTCTCTGAAGTGTGAGTTGAGTTCTCATTTAGGTTTGTAAAC
ATGGCTATTTCTAGTTGTAAAGTTCTGCATTATAAGTGCCATTGTTGTAAGGTGGTGTTCCTAGACCTTCCCTGATG
CGATTTTACCTTTGTTGAATTTGTATAAACAATTGTACAAAAAAACCCTCTTGAACCTTTGAGGGTTTCTGTTCTAGGA
GTGGACTAGAAGTTTAAGCCCAGAGTCAGTAAACACTGTTTTGAAGTCCAAA

Lysine demethylase 2 (KDM2B) regulates hippo pathway via MOB1 to promote
pancreatic ductal adenocarcinoma (PDAC) progression

J Exp Clin Cancer Res 39 (1), 13 (2020)

GTACGTGTGTGTCCACATCTTTGAGTGCCGGGAGTTTAAAAGTTAGGCAGTCCTTATAGGTATGGAAGCCGAGCTAAT
TTCCTTCTGAGCCCCCAAATGCCTCCTCCACATGGCGGGTCCGCAAATGGGGGGATCTGCAGAGGATCACCCCCACGA
AAAAGACATGCAGCAGAAAAGCAAAAAAGAAAAACAGTTATATATACAAAATGCTTTGAATTTGAGTCGGCCACACAGCG
CCCGATTGACCGCCAGCGATACGACGAGAACGAGGACTTGTGCGACGTGGAGGAGATCGTCAGCGTCCGCGGCTTCAGCC
TGGAGGAGAAGCTTCGACGCCAGCTGTACCAGGGGACTTCGTGCACGCCATGGAGGGCAAAGATTTCAACTATGAGTAC
GTACAGAGAGAAGCTCTCAGGGTTCCCCTGATATTTGAGAGAAAAGGATGGACTGGGAATTAAGATGCCTGACCCTGATTT
CACAGTCCGAGACGTCAAACCTCTAGTGGGGAGCCGGCGGCTTGTGGACGTGATGGATGTGAACACCCAGAAGGGCACGG
AGATGAGCATGTCCCAGTTTGTGCGTTACTACGAGACGCCCCGAGGCCAGCGGGACAAGCTGTACAACGTATCAGCCTA
GAGTTCAGCCACACCAAGCTGGAGCACTTGGTCAAGCGTCCGACTGTGGTAGACCTGGTGGACTGGGTGGACAACATGTG
GCCCCAGCATCTGAAGGAGAAGCAGACAGAAGCCACGAACGCCATTGCAGAGATGAAGTACCCGAAAGTGAAAAAGTACT
GTCTGATGAGCGTGAAAGGTTGTTTCACCGACTTCCACATCGACTTTGGAGGCACTTCGGTTTGGTACCATGTTTTCCGG
GGTGGGAAGATTTTTTGGCTGATTCTCCAACGCTGCACAATTTGGCGCTGTACGAGGAGTGGGTGCTGTACGGCAAACA
GAGTGACATCTTTCTGGGAGACCGTGTGGAACGATGCCAAAGAATTGAGCTGAAGCAGGGCTACACATTTTTTCATCCCTT
CCGGTTGGATCCATGCCGTCTACACCCCTGTAGACTCTTTGGTGTTCGGCGGAAACATCCTGCACAGCTTTAACGTGCCC
ATGCAGCTGCGGATCTACGAGATCGAGGACAGGACGCGGGTGCAGCCCAAATTCGGTTACCCCTTCTACTATGAGATGTG
CTGGTATGTCTGGAGAGATACGTGTACTGTGTGACCCAGCGCTCCACCTCACTCAGGAATACCAGAGGGAGTCCGATGC
TTATTGATGCCCCGAGGAAGCCAGCATAGACGGCTTCTCTTCGGATTCTGGCTGGAGATGGAGGAGGAGCCTGTGAT
CAGCAGCCTCAGGAGGAGGAGGAGAAGGACGAGGAGGGCGAGGGCAGGGACAGGGCACCCAAACCGCCACCGATGGCTC
CACTTACCCACCAGCAGCCCTCTGAGGACCAGGAGGCCCTCGGGAAGAAGCCCAAAGCACCTGCCCTGCGATTCTCTCA
AAAGGACTTTGTCTAATGAGTCGGAGGAAAGTGTGAAGTCCACCACATTGGCCGTAGACTACCCCAAGACCCCAACCGGC
TCTCCCGCCACGAGGTCTCTGCCAAATGGACCCATCTCACTGAGTTTGAAGTGAAGGGCCTGAAAGCTCTGGTGGAGAA
ACTGGAATCCCTCCCGGAGAACAAGAAGTGTGTCCCGAGGGCATCGAGGACCCCAAGGCACTCCTGGAGGGTGTGAAGA
ACGTCTGAAGGAGCAGCAGATGATGACCCTAGTCTGGCCATCACTGGGGTCCCTGTGGTGACTTGGCCAAAGAAGACT
CCAAAGAACCGGGCTGTGGGTGCGCCCAAGGGGAAGCTGGGCCGCGCTCCGCGGTGAAGTTGGCCGCCAACCGGACAAC
GGCAGGAGCTCGGCGGCGCCGACGCGATGCCCAAGTGCGAGGCCTGCCTGCGGACCGAGTGCAGGAGTGCACCTTCT
GCAAGGACATGAAGAAGTTCGGGGGCCCCGGGCGCATGAAGCAGAGCTGCATCATGCGGCAGTGCATCGCGCCAGTGTCTG
CCCCACACCGCGGTGTGCCTTGTGTGTGGCGAGGCGGGGAAGGAAGACACGGTGAAGAGGAGGAAGGCAAGTTTAACTT
CATGCTCATGGAGTGTCTCATCTGCAATGAAATCATCCACCCTGGATGCCTTAAGATTAAGGAGTCAGAGGGTGTGGTCA
ACGACGAGCTTCCAACTGCTGGGAGTGTCCGAAGTGTAAACACGCCGGAAGACCGGGAAACAAAAGCGTGGCCCTGGC

TTTAAGTACGCCTCCAACCTGCCCGGCTCCCTGCTCAAGGAGCAGAAGATGAACCGGGACAACAAGGAAGGGCAGGAACC
 TGCCAAGCGGAGGAGTGAGTGTGAGGAGGCGCCCGGCGCAGGTGCGATGAGCACTCGAAGAAGGTGCCGCCGACGGCC
 TTCTGCGCAGAAAAGTCTGACGACGTGCACCTGAGGAAGAAGCGGAAATACGAGAAGCCCCAGGAGCTGAGTGGACGCAAG
 CGGGCCTCATCGCTTCAAACGTCCCCCGGTTCCCTCTCACCTCTCGCCGAGGCCCCCTCTAGGCAGCAGCCTCAGCCC
 CTGGTGGAGATCCAGTCTCACTTACTTCCAGCAGCAGCTCAAACCTGGCAAAGAAGATAAGCTTTTCAGGAAAAAGCGGC
 GGTCTTGAAGAACGCCGAGGACCGCATGGCGCTGGCCAACAAGCCCCCTCCGCGCTTCAAGCAGGAACCCGAGGACGAA
 CTGCCCCGAGGCGCCCCCAAGACCAGGGAGAGCGACCACTCCCGCTCCAGCTCCCCACCGCGGGACCCAGCACCGAAGG
 GGCCGAGGGCCCGGAGGAGAAGAAGAAGGTGAAGATGCGCCGGAAGCGGCGGCTTCCAACAAGGAGCTGAGCAGGGAGC
 TGAGCAAGGAGCTCAACCACGAGATCCAGAGGACGGAGAACAGCCTGGCCAACGAGAACCAGCAGCCCATCAAGTCGGAG
 CCTGAGAGCGAGGGCGAGGAGCCCAAGCGCCCCCGGGCATCTGCGAGCGTCCCCACCGCTTCAGCAAGGGGCTCAACGG
 CACCCCCCGGAGCTGCGGCACCAGCTGGGGCCAGCCTGCGCAGCCCCCGCCGTGTCTCTCCGGCCCCCACCTCCG
 TGTCCCCGCCAAGTGTATCCAGATGGAGCGCCATGTGATCCGGCCACCCCCATCAGCCCCCGCCTGACTCGCTACCC
 CTGGACGATGGGGCAGCCACGTCATGCACAGGAGGTGTGGATGGCCGTCTTCAGCTACCTCAGCCACCAAGACCTGTG
 TGTGTGCATGCGGTCTGTCAGGACCTGGAACCGTGGTGTGCGATAAGCGGTTGTGGACCCGCATTGACCTGAACCACT
 GCAAGTCTATCACACCCCTGATGCTGAGTGGCATCATCCGGCGACAGCCCGTCTCCCTCGACCTCAGCTGGACCAATATC
 TCCAAGAAGCAGCTGAGCTGGCTCATCAACCGGTGCTGGGCTCCGGACTTGGTGCTGTCAGGCTGCTCATGGATCGC
 GGTCTCGGCCCTTTGAGCTCCAGTTGTCCGTGCTCCGGACCCTGGATGTCCAGTGGGTGGAGGGACTAAAGGATGCCC
 AGATGCGGGATCTCCTGTCCCCGCCACAGACAACAGGCCAGGTCAGATGGACAATCGGAGCAAGCTCCGGAACATCGTG
 GAGCTGCGCCTGGCAGGCCTGGACATCACAGATGCCTCCCTGCGGCTCATCATCCGCCACATGCCCCGTCTCTCAAGCT
 CCACCTCAGTTACTGTAACCACGTCACCGACCAGTCTATCAACCTGCTCACTGCTGTTGGCACCACCACCGAGACTCCT
 TAACCGAGATCAACCTGTCTGACTGCAATAAGGTCACTGATCAGTGCCTGTCTTCTTCAAACGCTGTGAAACATCTGT
 CATATTGACCTGAGGTACTGCAAGCAAGTCACCAAGGAAGGCTGTGAGCAGTTCATAGCCGAGATGTCTGTGAGTGTCCA
 GTTTGGGCAAGTAGAAGAAAACTCCTGCAAAAACTGAGTTAGTCCAAGGATAAGTATGTAAATACGGGGCGGGCTCTGG
 GAGGGGAGAGACTTTACAAAAATGAGGGCTTTTATTTTCCATTTGGAACGTGGGACAACAGACCACAACGCAATTCCATT
 TTGCAAGTCTTTCCAAGGGAGAAGCTGTTCAACCACCCGTTTGGGGGATGAGTGAGCCGACACTTTCCTTTGGTCTTTCT
 GAATCGTAACTGCACTGCTTTCTGGACCATTCTAAGGCGGCCTTTACAAGAAGACATTCTGTGCGAGAGGAGGGTGGA
 CTTCCGAGAAATCTCATACTGAAGCATGAGCTTAGGAGTTTCTGTTAGTGGTAGTGGTGTGTTTGGACACTTCATTCTCT
 GCAACACCGAGTTTTTGGGTGTTGACATAAAGTGGAACACACACCACATCTGCTGCCGTCTTGACACTTTTTTTTGTGTTG
 GTTGGTTTTGTTACATCTTACATTATGCAGAACTATTTTTGTACAAATTGTTTAAAAGTTATTTATGCAAGTTTTGAATG
 CATACAGTGTGTTTTATTGTTTTGAGATTGCCAATTTCTGATTTCTTAAAGGTAGGAGAGAATTTAACGTGTACTTCA
 TCGACACAACCATCTACAAATGTGCCAGATCTAACAAGTAGGCTAAGACCTTCCACTTAAAGCATGTTTAACTGGA
 AGTTGAGAGTCTGCTTTGTACCTCAAGAGTTACATGAGCATGTTGTGGATAAATGTAAATTATAGTCAAAGTAAGATACT
 CTGCCAAGTTTCTCTGTAGAGAATTCATTTTCTCAAATTTTAAAATTTGACTTCAGCCTTTGCACTCAGGAGGTTCT
 GCTCCAGCATGAGCTCTTGTACTTACATAGATCTAATTTATACAGTGAGTCAAGACGTAGAATAAATGCTCCCACATAGC
 CTTTCTTTTGTCTTTGCTTCTCTCTCTGAAGTGTGAGTTGAGTTCTCATTTAGGTTTGTAAACATGGCTATTTCTAGTT
 GTAAAGTTCTGCATTTATAAGTGCCATTGTTGTAAGGTGGTGTTCCTAGACCTTCCCTGATGCGATTTTACCTTTGTTG
 AATTTGTATAAAACAATTGTACAAAAAAACCCTCTTGAACCTTTGAGGGTTTCTGTTCTAGGAGTGGACTAGAAGTTTAA
 GCCCAGAGTCAGTAAACACTGTTTTGAAGTCCAAA

Induction of co-inhibitory molecule CTLA-4 by human papillomavirus E7 protein
 through downregulation of histone methyltransferase JHDM1B expression
 Virology 538, 111-118 (2019)
 GTACGTGTGTGTCCACATCTTTGAGTGCCGGGAGTTTAAAAGTTAGGCAGTCCTTATAGGTATGGAAGCCGAGCTAAT
 TTCCTTCTGAGCCCCCAAATGCCTCCTCCACATGGCGGGTCCGCAAATGGGGGGATCTGCAGAGGATACCCCCACGA
 AAAAGACATGCAGCAGAAAAGCAAAAAAGAAAAAGCTTATATATACAAAATGCTTTGAATTTGAGTCGGCCACACAGCG
 CCCGATTGACCGCAGCGATACGACGAGAACGAGGACTTGTGCGACGTGGAGGAGATCGTCAGCGTCCGCGGCTTCAGCC
 TGGAGGAGAAGCTTCGACGCCAGCTGTACCAGGGGACTTCGTGCACGCCATGGAGGGCAAAGATTTCAACTATGAGTAC
 GTACAGAGAGAAGCTCTCAGGGTTCCCCTGATATTTGAGAGAAAAGGATGGACTGGGAATTAAGATGCCTGACCCTGATTT

CACAGTCCGAGACGTCAAACCTCTAGTGGGGAGCCGGCGGCTTGTGGACGTGATGGATGTGAACACCCAGAAGGGCACGG
AGATGAGCATGTCCCAGTTTGTGCGTTACTACGAGACGCCCCAGGCCGACAAGCTGTACAACGTATCAGCCTA
GAGTTCAGCCACACCAAGCTGGAGCACTTGGTCAAGCGTCCGACTGTGGTAGACCTGGTGGACTGGGTGGACAACATGTG
GCCCCAGCATCTGAAGGAGAAGCAGACAGAAGCCACGAACGCCATTGCAGAGATGAAGTACCCGAAAGTGAAAAAGTACT
GTCTGATGAGCGTGAAAGGTTGTTTCACCGACTTCCACATCGACTTTGGAGGCACCTCCGTTTGGTACCATGTTTTCCGG
GGTGGGAAGATTTTTTGGCTGATTCCCTCCAACGCTGCACAATTTGGCGCTGTACGAGGAGTGGGTGCTGTCAGGCAAACA
GAGTGACATCTTCTGGGAGACCGTGTGGAACGATGCCAAAGAATTGAGCTGAAGCAGGGCTACACATTTTTTCATCCCTT
CCGGTTGGATCCATGCCGTCTACACCCCTGTAGACTCTTTGGTGTTCGGCGGAAACATCCTGCACAGCTTTAACGTGCCC
ATGCAGCTGCGGATCTACGAGATCGAGGACAGGACGCGGGTGCAGCCCAAATTCGGTTACCCCTTCTACTATGAGATGTG
CTGGTATGTCCTGGAGAGATACGTGTACTGTGTGACCCAGCGCTCCACCTCACTCAGGAATACCAGAGGGAGTGCATGC
TTATTGATGCCCCGAGGAAGCCCAGCATAGACGGCTTCTCTTCGGATTCTGGCTGGAGATGGAGGAGGAGGCCTGTGAT
CAGCAGCCTCAGGAGGAGGAGGAGAAGGACGAGGAGGGCGAGGGCAGGGACAGGGCACCCAAACCGCCCACCGATGGCTC
CACTTCACCCACCAGCACGCCCTCTGAGGACCAGGAGGCCCTCGGGAAGAAGCCCAAAGCACCTGCCCTGCGATTCCCTCA
AAAGGACTTTGTCTAATGAGTCGGAGGAAAGTGTGAAGTCCACCACATTGGCCGTAGACTACCCCAAGACCCCCACCGGC
TCTCCCGCCACGGAGGTCTCTGCCAAATGGACCCATCTCACTGAGTTTGAAGTGAAGGGCCTGAAAGCTCTGGTGGAGAA
ACTGGAATCCCTCCCGGAGAACAAGAAGTGTGTCCCGAGGGCATCGAGGACCCCAAGGCACTCCTGGAGGGTGTGAAGA
ACGTCCTGAAGGAGCACGCAGATGATGACCCTAGTCTGGCCATCACTGGGGTCCCTGTGGTGACTTGGCCAAAGAAGACT
CCAAAGAACCGGGCTGTGGGTGCGCCCAAGGGGAAGCTGGGCCCGGCTCCGCGGTGAAGTTGGCCGCCAACCGGACAAC
GGCAGGAGCTCGGCGGCGCCGACGCGATGCCCAAGTGCAGGCCCTGCCTGCGGACCGAGTGCAGGAGAGTGCCACTTCT
GCAAGGACATGAAGAAGTTCGGGGGCCCCGGGCGCATGAAGCAGAGCTGCATCATGCGGCAGTGCATCGCGCCAGTGCTG
CCCCACACCGCGGTGTGCCTTGTGTGTGGCGAGGCGGGGAAGGAAGACACGGTGAAGAGGAGGAAGGCAAGTTTAACT
CATGCTCATGGAGTGCTCCATCTGCAATGAAATCATCCACCCTGGATGCCTTAAGATTAAGGAGTCAGAGGGTGTGGTCA
ACGACGAGCTTCCAACTGCTGGGAGTGTCCGAAGTGTAAACACGCCGGCAAGACCGGGAACAAAAGCGTGGCCCTGGC
TTTAAGTACGCTTCAACCTGCCCGGCTCCCTGTCTAAGGAGCAGAAGATGAACCGGGAACAACAAGGAAGGGCAGGAACC
TGCCAAGCGGAGGAGTGAGTGTGAGGAGGCGCCCCGGCGCAGGTGCGATGAGCACTCGAAGAAGGTGCCGCGGACGGCC
TTCTGCGCAGAAAAGTCTGACGACGTGCACCTGAGGAAGAAGCGGAAATACGAGAAGCCCCAGGAGCTGAGTGGACGCAAG
CGGGCCTCATCGCTTCAAACGTCCCCGGTTCCCTCCTCTACCTCTCGCCGAGGCCCCCTCTAGGCAGCAGCCTCAGCCC
CTGGTGGAGATCCAGTCTCACTTACTTCCAGCAGCAGCTCAAACCTGGCAAAGAAGATAAGCTTTTCAGGAAAAAGCGGC
GGTCTTGAAGAACGCCGAGGACCGCATGGCGTGGCCAACAAGCCCCCTCCGCGCTTCAAGCAGGAACCCGAGGACGAA
CTGCCCCAGGCGCCCCCAAGACCAGGGAGAGCGACCACTCCCGCTCCAGTCCCCACCGCGGGACCCAGCACCGAAGG
GGCCGAGGGCCCGGAGGAGAAGAAGAAGGTGAAGATGCGCCGGAAGCGGCGGCTTCCCAACAAGGAGCTGAGCAGGGAGC
TGAGCAAGGAGCTCAACCACGAGATCCAGAGGACGGAACAGCCTGGCCAACGAGAACCAGCAGCCCATCAAGTCGGAG
CCTGAGAGCGAGGGCGAGGAGCCCAAGCGGCCCCGGGCATCTGCGAGCGTCCCACCGCTTCAAGCAAGGGGCTCAACGG
CACCCCCGGGAGCTGCGGCACCAGCTGGGGCCAGCCTGCGCAGCCCGCCCCGTGTCATCTCCCGGCCCCACCCTCCG
TGTCCCCGCCAAGTGTATCCAGATGGAGCGCATGTGATCCGGCCACCCCCATCAGCCCCCGCCTGACTCGCTACCC
CTGGACGATGGGGCAGCCACGTATGCACAGGAGGTGTGGATGGCCGTCTTCAGCTACCTCAGCCACCAAGACCTGTG
TGTGTGCATGCGGTCTGCAGGACCTGGAACCGTGGTGTGCGATAAGCGGTTGTGGACCCGCATTGACCTGAACCACT
GCAAGTCTATCACACCCCTGATGCTGAGTGGCATCATCCGGCGACAGCCCGTCTCCCTCGACCTCAGCTGGACCAATATC
TCCAAGAAGCAGCTGAGCTGGCTCATCAACCGGCTGCCTGGGCTCCGGACTTGGTGCTGTGAGGCTGCTCATGGATCGC
GGTCTCGGCCCCTTTGAGCTCCAGTTGTCCGTGCTCCGGACCCTGGATGTCCAGTGGGTGGAGGGACTAAAGGATGCCC
AGATGCGGGATCTCCTGTCCCCGCCACAGACAACAGGCCAGGTGAGTGGACAATCGGAGCAAGCTCCGGAACATCGTG
GAGCTGCGCCTGGCAGGCCTGGACATCACAGATGCCTCCCTGCGGCTCATCATCCGCCACATGCCCCGTGCTCTCAAGCT
CCACCTCAGTTACTGTAACCACGTACCGACCACTATCAACCTGCTCACTGCTGTTGGCACCACCACCGAGACTCCT
TAACCGAGATCAACCTGTCTGACTGCAATAAGGTCACTGATCAGTGCCTGTCTTCTTCAAACGCTGTGAAACATCTGT
CATATTGACCTGAGGTACTGCAAGCAAGTCACCAAGGAAGGCTGTGAGCAGTTATAGCCGAGATGTCTGTGAGTGTCCA
GTTTGGGCAAGTAGAAGAAAACTCCTGCAAAAACTGAGTTAGTCCAAGGATAAGTATGTAAATACGGGGCGGGCTCTGG
GAGGGGAGAGACTTTACAAAAATGAGGGCTTTTATTTTCCATTTGGAACGTGGGACAACAGACCACAACGCAATTCCATT
TTGCAAGTCTTTCCAAGGGAGAAGCTGTTCAACCACCGTTTGGGGATGAGTGAGCCGACACTTTCCTTTGGTCTTTCT

GAATCGTAACTGCACTGCTTTCTGGACCATTCTAAGGCGGCCTTTACAAGAAGACATTCTGTGCGGAGAGGAGGGTGA
 CTTGCGGAGAAATTCTCATACTGAAGCATGAGCTTAGGAGTTTCTGTTAGTGGTAGTGGTGTGTTTGGACACTTCATTCCCTT
 GCAACACCGAGGTTTGGGTGTTGACATAAAGTGGACCACACACCACATCTGCTGCCGTCTTGACACTTTTTTTTTGTTG
 GTTGTTTTGTTACATCTTACATTATGCAGAACTATTTTTGTACAAATTGTTTAAAAAGTTATTTATGCAAGGTTTGAATG
 CATACCAGTGTGTTTTATTGTTTTGAGATTGCCAATTTTCCTGATTTCCCTTAAGGTAGGAGAGAATTTAACGTGTACTTCA
 TCGACACAACCCATCTACAAATGTGCCAGATCTAACAAGTAGGCTAAGACCTTCCACTTAAAGCATGTTTAACTGGA
 AGTTGAGAGTCTGCTTTGTACCTCAAGAGTTACATGAGCATGTTGTGGATAAATGTAAATTATAGTCAAAGTAAGATACT
 CTGCCAAGTTTCTCTGTAGAGAATTCATTTTCTCAAATTTTAAAAATTTGACTTCAGCCTTTGCACTCAGGAGGTTCT
 GCTCCAGCATGAGCTCTGTACTTACATAGATCTAATTTATACAGTGAGTCAAGACGTAGAATAAATGCTCCCACATAGC
 CTTTCTTTTGCTTTTGCTTCTCTCTCTGAAGTGTGAGTTGAGTTCTCATTTAGGTTTGTAAACATGGCTATTTCCCTAGTT
 GTAAAGTTCTGCATTTATAAGTGCCATTGTTGTAAAGGTGGTGTTCCTAGACCTTCCCTGATGCGATTTTACCTTTGTTG
 AATTTGTATAAAACAATTGTACAAAAAAACCCTCTTGAACCTTTGAGGGTTTCTGTTCTAGGAGTGGACTAGAAGTTTAA
 GCCCAGAGTCAGTAAACACTGTTTTGAAGTCCAAA

Tip60-dependent acetylation of KDM2B promotes osteosarcoma carcinogenesis
 J Cell Mol Med 23 (9), 6154-6163 (2019)

GTACGTGTGTGTGCCACATCTTTGAGTGCCGGGAGTTTAAAAGTTAGGCAGTCCTTATAGGTATGGAAGCCGAGCTAAT
 TTCCTTCTGAGCCCCCAAATGCCTCCTCCACATGGCGGGTCCGCAAATGGGGGATCTGCAGAGGATCACCCCCACGA
 AAAAGACATGCAGCAGAAAAGCAAAAAAGAAAACAGTTATATATACAAAATGCTTTGAATTTGAGTCGGCCACACAGCG
 CCCGATTGACCGCCAGCGATACGACGAGAACGAGGACTTGTGCGACGTGGAGGAGATCGTCAGCGTCCGCGGCTCAGCC
 TGGAGGAGAAGCTTCGCAGCCAGCTGTACCAGGGGACTTCGTGCACGCCATGGAGGGCAAAGATTTCAACTATGAGTAC
 GTACAGAGAGAAGCTCTCAGGGTTCCCCTGATATTTGAGAAAAGGATGGACTGGGAATTAAGATGCCTGACCCTGATTT
 CACAGTCCGAGACGTCAAACCTCTAGTGGGGAGCCGGCGGCTTGTGGACGTGATGGATGTGAACACCCAGAAGGGCACGG
 AGATGAGCATGTCCCAGTTTGTGCGTTACTACGAGACGCCGAGGCCAGCGGGACAAGCTGTACAACGTATCAGCCTA
 GAGTTCAGCCACACCAAGCTGGAGCACTTGGTCAAGCGTCCGACTGTGGTAGACCTGGTGGACTGGGTGGACAACATGTG
 GCCCCAGCATCTGAAGGAGAAGCAGACAGAAGCCACGAACGCCATTGCAGAGATGAAGTACCCGAAAGTGAAAAAGTACT
 GTCTGATGAGCGTGAAAGGTTGTTTCACCGACTTCCACATCGACTTTGGAGGCACTTCCGTTTGGTACCATGTTTTCCGG
 GGTGGGAAGATTTTTTGGCTGATTCTCCTCAACGCTGCACAATTTGGCGCTGTACGAGGAGTGGGTGCTGTGAGGCAACA
 GAGTGACATCTTTCTGGGAGACCGTGTGGAACGATGCCAAAGAATTGAGCTGAAGCAGGGCTACACATTTTTTCATCCCTT
 CCGGTTGGATCCATGCCGTCTACACCCCTGTAGACTCTTTGGTGTTCGGCGGAAACATCCTGCACAGCTTTAACGTGCCC
 ATGCAGCTCGGATCTACGAGATCGAGGACAGGACGCGGTGCAGCCCAAATTCGTTACCCCTTCTACTATGAGATGTG
 CTGGTATGTCTGGAGAGATACGTGTACTGTGTGACCCAGCGCTCCACCTCACTCAGGAATACCAGAGGGAGTGGATGC
 TTATTGATGCCCCGAGGAAGCCAGCATAGACGGCTTCTCTTCGATTCTCTGGCTGGAGATGGAGGAGGAGGCCTGTGAT
 CAGCAGCCTCAGGAGGAGGAGGAGAAGGACGAGGAGGGCGAGGGCAGGGACAGGGACCCAAACCGCCCACCGATGGCTC
 CACTTACCCACACGACGCCCCTCTGAGGACCAGGAGGCCCTCGGAAGAAGCCCAAAGCACCTGCCCTGCGATTCTCTCA
 AAAGGACTTTGTCTAATGAGTCGGAGGAAAGTGTGAAGTCCACCACATTGGCCGTAGACTACCCCAAGACCCCCACCGGC
 TCTCCCGCCACGGAGGTCTCTGCCAAATGGACCCATCTCACTGAGTTTGAAGTGAAGGGCCTGAAAGCTCTGGTGGAGAA
 ACTGGAATCCCTCCCGGAGAACAAGAAGTGTGTCCCGAGGGCATCGAGGACCCCAAGGCACTCTGGAGGGTGTGAAGA
 ACGTCTGAAGGAGCACGCAGATGATGACCCTAGTCTGGCCATCACTGGGGTCCCTGTGGTGACTTGGCCAAAGAAGACT
 CCAAAGAACCGGGCTGTGGGTGCGCCCAAGGGGAAGCTGGGCCGCGCTCCGCGGTGAAGTTGGCCGCAACCGGACAAC
 GGCAGGAGCTCGGCGGCGCCGACGCGATGCCGCAAGTGCGAGGCCTGCCTGCGGACCGAGTGCAGGAGTGCACCTTCT
 GCAAGGACATGAAGAAGTTCGGGGGCCCCGGGCGCATGAAGCAGAGCTGCATCATGCGGCAGTGCATCGCGCCAGTGCTG
 CCCCACACCGCGGTGTGCCTTGTGTGTGGCGAGGCGGGGAAGGAAGACACGGTGAAGAGGAGGAAGGCAAGTTTAACT
 CATGCTCATGGAGTGCTCCATCTGCAATGAAATCATCCACCCTGGATGCCTTAAGATTAAGGAGTCAGAGGGTGTGGTCA
 ACGACGAGCTTCCAACTGCTGGGAGTGTCCGAAGTGTAAACACGCCGGAAGACCGGGAACAAAAGCGTGGCCCTGGC
 TTTAAGTACGCTCCAACCTGCCCGGCTCCCTGCTCAAGGAGCAGAAGATGAACCGGACAACAAGGAAGGGCAGGAACC
 TGCCAAGCGGAGGAGTGAGTGTGAGGAGGCGCCCGGCGCAGGTGCGATGAGCACTCGAAGAAGGTGCCGCGGACGGCC
 TTCTGCGCAGAAAGTCTGACGACGTGCACCTGAGGAAGAAGCGGAAATACGAGAAGCCCCAGGAGCTGAGTGGACGCAAG

CGGGCCTCATCGCTTCAAACGTCCCCGGTTCCTCCTCTCACCTCTCGCCGAGGCCCCCTCTAGGCAGCAGCCTCAGCCC
CTGGTGGAGATCCAGTCTCACTTACTTCCAGCAGCAGCTCAAACCTGGCAAAGAAGATAAGCTTTTCAGGAAAAAGCGGC
GGTCTTGGAAGAACGCCGAGGACCGCATGGCGCTGGCCAACAAGCCCCCTCCGGCGCTTCAAGCAGGAACCCGAGGACGAA
CTGCCCCGAGGCGCCCCCAAGACCAGGGAGAGCGACCACTCCCGCTCCAGTCCCCACCGCGGGACCCAGCACCGAAGG
GGCCGAGGGCCCGGAGGAGAAGAAGAAGGTGAAGATGCGCCGGAAGCGCGGCTTCCCAACAAGGAGCTGAGCAGGGAGC
TGAGCAAGGAGCTCAACCACGAGATCCAGAGGACGGAGAACAGCCTGGCCAACGAGAACCAGCAGCCCATCAAGTCGGAG
CCTGAGAGCGAGGGCGAGGAGCCCAAGCGGCCCCGGGCATCTGCGAGCGTCCCCACCGCTTCAGCAAGGGGCTCAACGG
CACCCCCCGGGAGCTGCGGCACCAGCTGGGGCCAGCCTGCGCAGCCCGCCCCGTGTCATCTCCCGGCCCCCACCCTCCG
TGTCCCCGCCCAAGTGTATCCAGATGGAGCGCCATGTGATCCGGCCACCCCCATCAGCCCCCGCCTGACTCGCTACCC
CTGGACGATGGGGCAGCCACGTCATGCACAGGGAGGTGTGGATGGCCGTCTTCAGCTACCTCAGCCACCAAGACCTGTG
TGTGTGCATGCGGGTCTGCAGGACCTGGAACCGCTGGTGTGCGATAAGCGTTGTGGACCCGCATTGACCTGAACCACT
GCAAGTCTATCACACCCCTGATGCTGAGTGGCATCATCCGGCGACAGCCCGTCTCCCTCGACCTCAGCTGGACCAATATC
TCCAAGAAGCAGCTGAGCTGGCTCATCAACCGGCTGCCTGGGCTCCGGGACTTGGTGCTGTGAGGCTGCTCATGGATCGC
GGTCTCGGCCCTTTGACGCTCCAGTTGTCCGCTGCTCCGGACCTGGATGTCCAGTGGGTGGAGGGACTAAAGGATGCCC
AGATGCGGGATCTCCTGTCCCCGCCACAGACAACAGGCCAGGTGAGTGGACAATCGGAGCAAGCTCCGGAACATCGTG
GAGCTGCGCCTGGCAGGCCTGGACATCACAGATGCCTCCCTGCGGCTCATCATCCGCCACATGCCCTGCTCTCCAAGCT
CCACCTCAGTTACTGTAACCACGTCACCGACCACTTATCAACCTGCTCACTGCTGTTGGCACCACCACCCGAGACTCCT
TAACCGAGATCAACCTGTCTGACTGCAATAAGGTCACTGATCAGTGCCTGTCTTCTTCAAACGCTGTGGAAACATCTGT
CATATTGACCTGAGGTACTGCAAGCAAGTCACCAAGGAAGGCTGTGAGCAGTTCATAGCCGAGATGTCTGTGAGTGTCCA
GTTTGGGCAAGTAGAAGAAAACTCCTGCAAAAACTGAGTTAGTCCAAGGATAAGTATGTAAATACGGGGCGGGCTCTGG
GAGGGGAGAGACTTTACAAAAATGAGGGCTTTTATTTTCCATTTGGAACGTGGGACAACAGACCACAACGCAATTCATT
TTGCAAGTCTTTCCAAGGGAGAAGCTGTTCAACCACCCGTTTGGGGGATGAGTGAGCCGACACTTTCTTTTGGTCTTTCT
GAATCGTAACTGCACTGCTTTCTGGACCATTCTAAGGCGGCCTTTACAAGAAGACATTCTGTGCGAGAGGAGGGTGA
CTTCGGAGAAATTCTCATACTGAAGCATGAGCTTAGGAGTTTCTGTTAGTGGTAGTGGTGTGTTTGGACACTTCATTCTT
GCAACACCGAGGTTTTGGGTGTTGACATAAAGTGGACCACACACCACATCTGCTGCCGTCTTGACACTTTTTTTTTGTTG
GTTGGTTTTGTACATCTTACATTATGCAGAACTATTTTTGTACAAATTGTTTAAAAGTTATTTATGCAAGGTTTGAATG
CATAACAGTGTGTTTTATTGTTTTGAGATTGCCAATTTTCTGATTTCTTAAAGGTAGGAGAGAATTTAACGTGTACTTCA
TCGACACAACCCATCTACAAATGTGCCCAGATCTAACAAGTAGGCTAAGACCTTCCACTTAAAAGCATGTTTAACTGGA
AGTTGAGAGTCTGCTTTGTACCTCAAGAGTTACATGAGCATGTTGTGGATAAATGTAAATTATAGTCAAAGTAAGTACT
CTGCCAAGTTTCTCTGTAGAGAATTCATTTTCTCAAATTTTAAAATTTGACTTCAGCCTTTGCACTCAGGAGGTTCT
GCTCCAGCATGAGCTCTTGTACTTACATAGATCTAATTTATACAGTGAGTCAAGACGTAGAATAAATGCTCCCACATAGC
CTTTCTTTTGTCTTTGCTTCTCTCTCTGAAGTGTGAGTTGAGTTCTCATTTAGGTTTGTAAACATGGCTATTTCTAGTT
GTAAAGTTCTGCATTTATAAGTGCCATTGTTGTAAGGTGGTGTTCCTAGACCTTCCCTGATGCGATTTTACCTTTGTTG
AATTTGTATAAAACAATTGTACAAAAAAACCACTCTGAACCTTTGAGGGTTTCTGTTCTAGGAGTGGACTAGAAGTTAA
GCCCAGAGTCAGTAAACACTGTTTTGAAGTCCAAA

Regulation of KDM2B and Brg1 on Inflammatory Response of Nasal Mucosa in CRSwNP
Inflammation 42 (4), 1389-1400 (2019)

GTACGTGTGTGTCCACATCTTTGAGTGCCGGGAGTTTAAAAGTTAGGCAGTCCTTATAGGTATGGAAGCCGAGCTAAT
TTCCTTCTGAGCCCCCAAATGCCTCCTCCACATGGCGGGTCCGCAAATGGGGGGATCTGCAGAGGATCACCCCCACGA
AAAAGACATGCAGCAGAAAAGCAAAAAAGAAAAACAGTTATATATACAAAATGCTTTGAATTTGAGTCGGCCACACAGCG
CCCGATTGACCGCCAGCGATACGACGAGAACGAGGACTTGTGCGACGTGGAGGAGATCGTCAGCGTCCGCGGCTTCAGCC
TGGAGGAGAAGCTTCGACGCCAGCTGTACCAGGGGACTTCGTGCACGCCATGGAGGGCAAAGATTTCAACTATGAGTAC
GTACAGAGAGAAGCTCTCAGGGTTCCCCTGATATTTGAGAAAAAGGATGGACTGGGAATTAAGATGCCTGACCTGATTT
CACAGTCCGAGACGTCAAACCTCTAGTGGGGAGCCGGCGGCTTGTGGACGTGATGGATGTGAACACCCAGAAGGGCACGG
AGATGAGCATGTCCAGTTTGTGCGTTACTACGAGACGCCCCGAGGCCAGCGGGACAAGCTGTACAACGTATCAGCCTA
GAGTTCAGCCACACCAAGCTGGAGCACTTGGTCAAGCGTCCGACTGTGGTAGACCTGGTGGACTGGGTGGACAACATGTG
GCCCCAGCATCTGAAGGAGAAGCAGACAGAAGCCACGAACGCCATTGCAGAGATGAAGTACCCGAAAGTGAAAAAGTACT

GTCTGATGAGCGTGAAAGGTTGTTTCACCGACTTCCACATCGACTTTGGAGGCACTTCCGTTTGGTACCATGTTTTCCGG
GGTGGGAAGATTTTTTGGCTGATTCCCTCCAACGCTGCACAATTTGGCGCTGTACGAGGAGTGGGTGCTGTCAGGCAAACA
GAGTGACATCTTTCTGGGAGACCGTGTGGAACGATGCCAAAGAATTGAGCTGAAGCAGGGCTACACATTTTTTCATCCCTT
CCGGTTGGATCCATGCCGTCTACACCCCTGTAGACTCTTTGGTGTTCCGGCGAAACATCCTGCACAGCTTTAACGTGCCC
ATGCAGCTGCCGATCTACGAGATCGAGGACAGGACGCGGGTGCAGCCCAAATTCGGTTACCCCTTCTACTATGAGATGTG
CTGGTATGTCTGGAGAGATACGTGTACTGTGTGACCCAGCGCTCCACCTCACTCAGGAATACCAGAGGGAGTTCGATGC
TTATTGATGCCCCGAGGAAGCCCAGCATAGACGGCTTCTCTTCGGATTCTTGGCTGGAGATGGAGGAGGAGGCCTGTGAT
CAGCAGCCTCAGGAGGAGGAGGAGAAGGACGAGGAGGGCGAGGGCAGGGACAGGGCACCCAAACCGCCACCGATGGCTC
CACTTCACCCACCAGCACGCCCTCTGAGGACCAGGAGGCCCTCGGAAGAAGCCCAAAGCACCTGCCCTGCGATTCTCTCA
AAAGGACTTTGTCTAATGAGTCGGAGGAAAGTGTGAAGTCCACCACATTGGCCGTAGACTACCCCAAGACCCCCACCGGC
TCTCCCGCCACGGAGGTCTCTGCCAAATGGACCCATCTCACTGAGTTTGAAGTGAAGGGCCTGAAAGCTCTGGTGGAGAA
ACTGGAATCCCTCCCGGAGAACAAGAAGTGTGTCCCGAGGGCATCGAGGACCCCAAGGCACTCCTGGAGGGTGTGAAGA
ACGTCCTGAAGGAGCACGCAGATGATGACCCTAGTCTGGCCATCACTGGGGTCCCTGTGGTGACTTGGCCAAAGAAGACT
CCAAAGAACCGGGCTGTGGGTTCGGCCCAAGGGGAAGCTGGGCCCGGCCCTCCGCGGTGAAGTTGGCCGCCAACCGGACAAC
GGCAGGAGCTCGCGCGCGCCGGACGCGATGCCGCAAGTGCAGGGCTGCCTGCGGACCGAGTGCAGGAGTGCACCTTCT
GCAAGGACATGAAGAAGTTCGGGGGCCCCGGGCGCATGAAGCAGAGCTGCATCATGCGGCAGTGCATCGCGCCAGTGTCTG
CCCCACACCGCGCTGTGCCTTGTGTGTGGCGAGGCGGGGAAGGAAGACACGGTGAAGAGGAGGAAGGCAAGTTTAACT
CATGCTCATGGAGTGTCTCCATCTGCAATGAAATCATCCACCCTGGATGCCTTAAGATTAAGGAGTCAGAGGGTGTGGTCA
ACGACGAGCTTCCAACTGCTGGGAGTGTCCGAAGTGTAAACACGCCGGAAGACCGGGAACAAAAGCGTGGCCCTGGC
TTTAAGTACGCTCCAACTGCCCGCTCCCTGTCTAAGGAGCAGAAGATGAACCGGGAACAAGAAGGGCAGGAACC
TGCCAAGCGGAGGAGTGAGTGTGAGGAGGCGCCCCGGCGCAGGTTCGGATGAGCACTCGAAGAAGGTGCCGCCGACCGCC
TTCTGCGCAGAAAGTCTGACGACGTGCACCTGAGGAAGAAGCGGAAATACGAGAAGCCCCAGGAGCTGAGTGGACGCAAG
CGGGCCTCATCGTTCAAACGTCCCCGGTTCCCTCTCACCTCTCGCCGAGGCCCCCTCTAGGCAGCAGCCTCAGCCC
CTGGTGGAGATCCAGTCTCACTTACTTCCAGCAGCAGCTCAAACCTGGCAAAGAAGATAAGCTTTTCAGGAAAAAGCGGC
GGTCTTGAAGAACGCCGAGGACCGCATGGCGTGGCCAACAAGCCCCCTCCGGCGCTTCAAGCAGGAACCCGAGGACGAA
CTGCCCCGAGGCGCCCCCAAGACCAGGGAGAGCGACCACTCCCGCTCCAGTCCCCCACCGCGGGACCCAGCACCGAAGG
GGCCGAGGGCCCGGAGGAGAAGAAGAAGGTGAAGATGCGCCGGAAGCGCGGCTTCCCAACAAGGAGCTGAGCAGGGAGC
TGAGCAAGGAGCTCAACCACGAGATCCAGAGGACGGAGAACAGCCTGGCCAACGAGAACCAGCAGCCCATCAAGTCGGAG
CCTGAGAGCGAGGGCGAGGAGCCCAAGCGGCCCCGGGCATCTGCGAGCGTCCCCACCGCTTCAAGCAAGGGGTCAACGG
CACCCCCCGGAGCTGCGGCACCAGCTGGGGCCAGCCTGCGCAGCCCCGCCCCGTGTCTCTCCGGCCCCCACCCTCCG
TGTCCCCGCCCAAGTGTATCCAGATGGAGCGCCATGTGATCCGGCCACCCCCATCAGCCCCCGCCTGACTCGCTACCC
CTGGACGATGGGGCAGCCACGTATGCACAGGAGGTGTGGATGGCCGTCTTCAGCTACCTCAGCCACCAAGACCTGTG
TGTGTGCATGCGGGTCTGCAGGACCTGGAACCGTGGTGTGCGATAAGCGGTTGTGGACCCGCATTGACCTGAACCACT
GCAAGTCTATCACACCCCTGATGCTGAGTGGCATCATCCGGCGACAGCCCGTCTCCCTCGACCTCAGCTGGACCAATATC
TCCAAGAAGCAGCTGAGCTGGCTCATCAACCGGTGCCTGGGCTCCGGGACTTGGTGCTGTGAGGCTGCTCATGGATCGC
GGTCTCGGCCCCTTTGAGCTCCAGTTGTCCGTGCTCCGGACCCTGGATGTCCAGTGGGTGGAGGGACTAAAGGATGCCC
AGATGCGGGATCTCCTGTCCCCGCCACAGACAACAGGCCAGGTGAGTGGACAATCGGAGCAAGCTCCGGAACATCGTG
GAGCTGCGCCTGGCAGGCCTGGACATCACAGATGCCTCCCTGCGGCTCATCATCCGCCACATGCCCCTGCTCTCCAAGCT
CCACCTCAGTTACTGTAACCACGTACCGACCACTATCAACCTGCTCACTGCTGTTGGCACCACCACCCGAGACTCCT
TAACCGAGATCAACCTGTCTGACTGCAATAAGGTCACTGATCAGTGCCTGTCTTCTTCAAACGCTGTGAAACATCTGT
CATATTGACCTGAGGTACTGCAAGCAAGTCACCAAGGAAGGCTGTGAGCAGTTATAGCCGAGATGTCTGTGAGTGTCCA
GTTTGGGCAAGTAGAAGAAAACTCCTGCAAAAACTGAGTTAGTCCAAGGATAAGTATGTAAATACGGGGCGGGCTCTGG
GAGGGGAGAGACTTTACAAAAATGAGGGCTTTTATTTTCCATTTGGAACGTGGGACAACAGACCACAACGCAATTCCATT
TTGCAAGTCTTTCCAAGGGAGAAGCTGTTCAACCACCCGTTTGGGGGATGAGTGAGCCGACACTTTCCTTTGGTCTTTCT
GAATCGTAACTGCACTGCTTTCTGGACCATTTCTAAGGCGGCCTTTACAAGAAGACATTCTGTGCGAGAGGAGGGTGA
CTTCGGAGAAATCTCATACTGAAGCATGAGCTTAGGAGTTTCTGTTAGTGGTAGTGGTGTGTTTGGACACTTCATTCTT
GCAACACCGAGGTTTTGGGTGTTGACATAAAGTGGACCACACACCACATCTGCTGCCGTCTTGACACTTTTTTTTTGTTT
GTTGGTTTTGTTACATCTTACATTATGCAGAACTATTTTTGTACAAATTGTTTAAAAGTTATTTATGCAAGTTTTGAATG

CATACCAGTGTTTTTATTGTTTTGAGATTGCCAATTTTCCTGATTTCTTAAGGTAGGAGAGAATTTAACGTGTACTTCA
 TCGACACAACCCATCTACAAATGTGCCCAGATCTAACAAAGTAGGCTAAGACCTTCCACTTAAAAGCATGTTTAACTGGA
 AGTTGAGAGTCTGCTTTGTACCTCAAGAGTTACATGAGCATGTTGTGGATAAATGTAAATTATAGTCAAAGTAAGATACT
 CTGCCAAGTTTCTCTGTAGAGAATTCATTTTCTCAAATTTTAAAATTTTCGACTTCAGCCTTTGCACTCAGGAGGTTCT
 GCTCCAGCATGAGCTCTTGTACTTACATAGATCTAATTTATACAGTGAGTCAAGACGTAGAATAAATGCTCCCACATAGC
 CTTTCTTTTGTCTTTGCTTCTCTCTCTGAAGTGTGAGTTGAGTTCTCATTAGGTTTGTAAACATGGCTATTTCTAGTT
 GTAAAGTTCTGCATTTATAAGTGCCATTGTTGTAAGGTGGTGTTCCTAGACCTTCCCTGATGCGATTTTACCTTTGTG
 AATTTGTATAAAACAATTGTACAAAAAAACCCTCTTGAACCTTTGAGGGTTTCTGTTCTAGGAGTGGACTAGAAGTTAA
 GCCCAGAGTCAGTAAACACTGTTTTGAAGTCCAAA

Interplay between the Epigenetic Enzyme Lysine (K)-Specific Demethylase 2B and
 Epstein-Barr Virus Infection

J Virol 93 (13), e00273-19 (2019)

GTACGTGTGTGTGCCACATCTTTGAGTGCCGGGAGTTTAAAAGTTAGGCAGTCCTTATAGGTATGGAAGCCGAGCTAAT
 TTCCTTCTGAGCCCCCAAATGCCTCCTCCACATGGCGGGTCCGCAAATGGGGGGATCTGCAGAGGATCACCCCCACGA
 AAAAGACATGCAGCAGAAAAGCAAAAAAGAAAAACAGTTATATATACAAAATGCTTTGAATTTGAGTCGGCCACACAGCG
 CCGGATTGACCGCCAGCGATACGACGAGAACGAGGACTTGTGCGACGTGGAGGAGATCGTCAGCGTCCGCGGCTTCAGCC
 TGGAGGAGAAGCTTCGCAGCCAGCTGTACCAGGGGACTTCGTGCACGCCATGGAGGGCAAAGATTTCAACTATGAGTAC
 GTACAGAGAGAAGCTCTCAGGGTTCCCCTGATATTTGAGAAAAAGGATGGACTGGGAATTAAGATGCCTGACCCTGATTT
 CACAGTCCGAGACGTCAAACCTCTAGTGGGAGCCGGCGGCTTGTGGACGTGATGGATGTGAACACCCAGAAGGGCACGG
 AGATGAGCATGTCCCAGTTTGTGCGTTACTACGAGACGCCCCGAGGCCAGCGGGACAAGCTGTACAACGTCATCAGCCTA
 GAGTTCAGCCACACCAAGCTGGAGCACTTGGTCAAGCGTCCGACTGTGGTAGACCTGGTGGACTGGGTGGACAACATGTG
 GCCCCAGCATCTGAAGGAGAAGCAGACAGAAGCCACGAACGCCATTGCAGAGATGAAGTACCCGAAAGTGAAAAAGTACT
 GTCTGATGAGCGTGAAAGGTTGTTTACCAGACTTCCACATCGACTTTGGAGGCACTTCCGTTTGGTACCATGTTTTCCGG
 GGTGGGAAGATTTTTTGGCTGATTCTCCAACGCTGCACAATTTGGCGCTGTACGAGGAGTGGGTGCTGTCAGGCAAAACA
 GAGTGACATCTTCTGGGAGACCGTGTGGAACGATGCCAAAGAATTGAGCTGAAGCAGGGCTACACATTTTTTCATCCCTT
 CCGGTTGGATCCATGCCGTCTACACCCCTGTAGACTCTTTGGTGTTCGGCGGAAACATCCTGCACAGCTTTAACGTGCCC
 ATGCAGCTCGGGATCTACGAGATCGAGGACAGGACGCGGGTGCAGCCCAAATTCGGTTACCCCTTCTACTATGAGATGTG
 CTGGTATGTCTGGAGAGATACGTGTACTGTGTGACCCAGCGCTCCACCTCACTCAGGAATACCAGAGGGAGTTCGATGC
 TTATTGATGCCCCGAGGAAGCCAGCATAGACGGCTTCTCTTCGGATTCTTGCTGGAGATGGAGGAGGAGGCCTGTGAT
 CAGCAGCCTCAGGAGGAGGAGGAGAAGGACGAGGAGGGCGAGGGCAGGGACAGGGCACCCAAACCGCCACCGATGGCTC
 CACTTACCCACCAGCACGCCCTCTGAGGACCAGGAGGCCCTCGGGAAGAAGCCCAAAGCACCTGCCCTGCGATTCTCTCA
 AAAGGACTTTGTCTAATGAGTCGGAGGAAAGTGTGAAGTCCACCACATTGGCCGTAGACTACCCCAAGACCCCCACCGGC
 TCTCCCGCCACGAGGTCTCTGCCAAATGGACCCATCTCACTGAGTTTGAAGTGAAGGGCCTGAAAGCTCTGGTGGAGAA
 ACTGGAATCCCTCCCGGAGAACAAGAAGTGTGTCCCGAGGGCATCGAGGACCCCAAGGCACTCCTGGAGGGTGTGAAGA
 ACGTCTGAAGGAGCACGCAGATGATGACCCTAGTCTGGCCATCACTGGGGTCCCTGTGGTGAAGTGGCCAAAGAAGACT
 CCAAAGAACCGGGCTGTGGGTGCGCCCAAGGGGAAGCTGGGCCCGGCCTCCGCGGTGAAGTTGGCCGCCAACCGGACAAC
 GGCAGGAGCTCGGCGGCGCCGACGCGATGCCCAAGTGCAGGCCTGCCTGCGGACCGAGTGCAGGAGAGTGCCACTTCT
 GCAAGGACATGAAGAAGTTCGGGGGCCCCGGGCGCATGAAGCAGAGCTGCATCATGCGGCAGTGCATCGCGCCAGTGCTG
 CCCCACACCGCGGTGTGCTTGTGTGTGGCGAGGCGGGGAAGGAAGACACGGTGAAGAGGAGGAAGGCAAGTTTAACTT
 CATGCTCATGGAGTGCTCCATCTGCAATGAAATCATCCACCCTGGATGCCTTAAGATTAAGGAGTCAGAGGGTGTGGTCA
 ACGACGAGCTTCCAACTGCTGGGAGTGTCCGAAGTGTAACCACGCCGGAAGACCGGGAACAAAAGCGTGGCCCTGGC
 TTTAAGTACGCTTCAACCTGCCCGGCTCCCTGCTCAAGGAGCAGAAGATGAACCGGGACAACAAGGAAGGGCAGGAACC
 TGCCAAGCGGAGGAGTGAGTGTGAGGAGGCGCCCCGGCGCAGGTTCGGATGAGCACTCGAAGAAGGTGCCCGCGACGGCC
 TTCTGCGCAGAAAGTCTGACGACGTGCACCTGAGGAAGAAGCGGAAATACGAGAAGCCCCAGGAGCTGAGTGGACGCAAG
 CGGGCCTCATCGTTCAAACGTCCCCGGTTCTCTCTCACCTCTCGCCGAGGCCCTCTAGGCAGCAGCCTCAGCCC
 CTGGTGGAGATCCAGTCTCACTTACTTCCAGCAGCAGCTCAAACCTGGCAAAGAAGATAAGCTTTTTCAGGAAAAAGCGGC
 GGTCTGGAAGAACGCCGAGGACCGCATGGCGCTGGCCAACAAGCCCCTCCGGCGCTTCAAGCAGGAACCCGAGGACGAA

CTGCCCCGAGGCGCCCCCAAGACCAGGGAGAGCGACCACTCCCGCTCCAGCTCCCCACCGCGGGACCCAGCACCGAAGG
GGCCGAGGGGCCCGGAGGAGAAGAAGAAGGTGAAGATGCGCCGGAAGCGGCGGCTTCCCAACAAGGAGCTGAGCAGGGAGC
TGAGCAAGGAGCTCAACCACGAGATCCAGAGGACGGAGAACAGCCTGGCCAACGAGAACCAGCAGCCCATCAAGTCGGAG
CCTGAGAGCGAGGGCGAGGAGCCCAAGCGGCCCCCGGCATCTGCGAGCGTCCCCACCGCTTCAGCAAGGGGCTCAACGG
CACCCCCCGGGAGCTGCGGCACCAGCTGGGGCCAGCCTGCGCAGCCCCGCCCCGTGTCTATCTCCCGGCCCCCACCCTCCG
TGTCCCCGCCCCAAGTGTATCCAGATGGAGCGCATGTGATCCGGCCACCCCCATCAGCCCCCGCCTGACTCGCTACCC
CTGGACGATGGGGCAGCCACGTCTATGCACAGGGAGGTGTGGATGGCCGTCTTCAGCTACCTCAGCCACCAAGACCTGTG
TGTGTGCATGCGGGTCTGCAGGACCTGGAACCGCTGGTGTGCGATAAGCGGTTGTGGACCCGCATTGACCTGAACCACT
GCAAGTCTATCACACCCCTGATGCTGAGTGGCATCATCCGGCGACAGCCCGTCTCCCTCGACCTCAGCTGGACCAATATC
TCCAAGAAGCAGCTGAGCTGGCTCATCAACCGGCTGCCTGGGCTCCGGGACTTGGTGTGTGAGGCTGTCTATGGATCGC
GGTCTCGGCCCTTTGAGCTCCAGTTGTCCGTGCTCCGGACCCTGGATGTCCAGTGGGTGGAGGGACTAAAGGATGCCC
AGATGCGGGATCTCCTGTCCCCGCCCACAGACAACAGGCCAGGTGAGTGGACAATCGGAGCAAGCTCCGGAACATCGTG
GAGCTGCGCCTGGCAGGCCTGGACATCACAGATGCCTCCCTGCGGCTCATCATCCGCCACATGCCCCCTGCTCTCCAAGCT
CCACCTCAGTTACTGTAACCACGTCACCGACCAGTCTATCAACCTGCTCACTGCTGTTGGCACCACCACCCGAGACTCCT
TAACCGAGATCAACCTGTCTGACTGCAATAAGGTCACTGATCAGTGCCTGTCTTCTTCAAACGCTGTGGAAACATCTGT
CATATTGACCTGAGGTACTGCAAGCAAGTCACCAAGGAAGGCTGTGAGCAGTTCATAGCCGAGATGTCTGTGAGTGTCCA
GTTTGGGCAAGTAGAAGAAAAAATCCTGCAAAAACTGAGTTAGTCCAAGGATAAGTATGTAAATACGGGGCGGGCTCTGG
GAGGGGAGAGACTTTACAAAAATGAGGGCTTTTATTTTCCATTTGGAACGTGGGACAACAGACCACAACGCAATTCCATT
TTGCAAGTCTTTCCAAGGGAGAAGCTGTTCAACCACCCGTTTGGGGGATGAGTGAGCCGACACTTTCTTTGGTCTTTCT
GAATCGTAACTGCACTGCTTTCTGGACCATTTCTAAGGCGGCCTTTACAAGAAGACATTCTGTGCGAGAGGAGGGTGGA
CTTCGGAGAAATTCTCATACTGAAGCATGAGCTTAGGAGTTTCTGTTAGTGGTAGTGGTGTGTTTGGACACTTCATTCCCTT
GCAACACCGAGGTTTTGGGTGTTGACATAAAGTGGACCACACACCACATCTGCTGCCGTCTTGACACTTTTTTTTTGTTTG
GTTGGTTTTGTTACATCTTACATTATGCAGAACTATTTTTGTACAAATTGTTTAAAAGTTATTTATGCAAGTTTTGAATG
CATACCAGTGTTTTTATTGTTTTGAGATTGCCAATTTTCTGATTTCTTAAAGTAGGAGAGAATTTAAGTGTACTTCA
TCGACACAACCCATCTACAAATGTGCCAGATCTAACAAGTAGGCTAAGACCTTCCACTTAAAAGCATGTTTAACTGGA
AGTTGAGAGTCTGCTTTGTACCTCAAGAGTTACATGAGCATGTTGTGGATAAATGTAAATTATAGTCAAAGTAAGATACT
CTGCCAAGTTTCTCTGTAGAGAATTCATTTTCTCAAATTTTAAAATTTGACTTCAGCCTTTGCACTCAGGAGGTTCT
GCTCCAGCATGAGCTCTTGTACTTACATAGATCTAATTTATACAGTGAGTCAAGACGTAGAATAAATGCTCCCACATAGC
CTTTCTTTTGCTTTTGCTTCTCTCTCTGAAGTGTGAGTTGAGTTCTCATTAGGTTTGTAAACATGGCTATTTCTAGTT
GTAAAGTTCTGCATTTATAAGTGCCATTGTTGTAAGGTGGTGTTCCTAGACCTTCCCTGATGCGATTTTACCTTTGTG
AATTTGTATAAAACATTGTACAAAAAAACCACTCTTGAACCTTTGAGGGTTTCTGTTCTAGGAGTGGAAGTTTAA
GCCCAGAGTCAGTAAACACTGTTTTGAAGTCCAAA

Violating the splicing rules: TG dinucleotides function as alternative 3' splice sites in U2-dependent introns

Genome Biol 8 (8), R154 (2007)

GTACGTGTGTGTGCCACATCTTTGAGTGCCGGGAGTTTAAAAGTTAGGCAGTCCTTATAGGTATGGAAGCCGAGCTAAT
TTCTTTCTGAGCCCCCAAATGCCTCCTCCACATGGCGGGTCCGCAAATGGGGGGATCTGCAGAGGATCACCCCCACGA
AAAAGACATGCAGCAGAAAAGCAAAAAAGAAAAACAGTTATATATACAAAATGCTTTGAATTTGAGTCGGCCACACAGCG
CCCGATTGACCGCCAGCGATACGACGAGAACGAGGACTTGTGCGACGTGGAGGAGATCGTCAGCGTCCGCGGCTTCAGCC
TGGAGGAGAAGCTTCGCAGCCAGCTGTACCAGGGGGACTTCGTGCACGCCATGGAGGGCAAAGATTTCAACTATGAGTAC
GTACAGAGAGAAGCTCTCAGGGTTCCCCTGATATTCGAGAAAAGGATGGACTGGGAATTAAGATGCCTGACCCTGATTT
CACAGTCCGAGACGTCAAACCTCTAGTGGGGAGCCGGCGGCTTGTGGACGTGATGGATGTGAACACCCAGAAGGGCACGG
AGATGAGCATGTCCCAGTTTGTGCGTTACTACGAGACGCCCCGAGGCCAGCGGGACAAGCTGTACAACGTATCAGCCTA
GAGTTACGCCACACCAAGCTGGAGCACTTGGTCAAGCGTCCGACTGTGGTAGACCTGGTGGACTGGGTGGACAACATGTG
GCCCCAGCATCTGAAGGAGAAGCAGACAGAAGCCACGAACGCCATTGCAGAGATGAAGTACCCGAAAGTGAAAAAGTACT
GTCTGATGAGCGTGAAAGGTTGTTTACCAGACTTCCACATCGACTTTGGAGGCACTTCCGTTTGGTACCATGTTTTCCGG
GGTGGGAAGATTTTTTGGCTGATTCTCCAACGCTGCACAATTTGGCGCTGTACGAGGAGTGGGTGCTGTGAGGCAACA

GAGTGACATCTTTCTGGGAGACCGTGTGGAACGATGCCAAAGAATTGAGCTGAAGCAGGGCTACACATTTTTTCATCCCTT
CCGGTTGGATCCATGCCGTCTACACCCCTGTAGACTCTTTGGTGTTCGGCGGAAACATCCTGCACAGCTTTAACGTGCCC
ATGCAGCTGCGGATCTACGAGATCGAGGACAGGACGCGGGTGCAGCCCAAATTCCGTTACCCCTTCTACTATGAGATGTG
CTGGTATGTCTGGAGAGATACGTGTACTGTGTGACCCAGCGCTCCACCTCACTCAGGAATACCAGAGGGAGTCCGATGC
TTATTGATGCCCCGAGGAAGCCCAGCATAGACGGCTTCTCTTCGGATTCCCTGGCTGGAGATGGAGGAGGAGGCCTGTGAT
CAGCAGCCTCAGGAGGAGGAGGAGAAGGACGAGGAGGGCGAGGGCAGGGACAGGGACCCCAAACCGCCACCGATGGCTC
CACTTCACCCACCAGCACGCCCTCTGAGGACCAGGAGGCCCTCGGGAAGAAGCCCAAAGCACCTGCCCTGCGATTCTCTCA
AAAGGACTTTTGTCTAATGAGTCGGAGGAAAGTGTGAAGTCCACCACATTGGCCGTAGACTACCCCAAGACCCCCACCGGC
TCTCCCGCCACGGAGGTCTCTGCCAAATGGACCCATCTCACTGAGTTTGAAGTGAAGGGCCTGAAAGCTCTGGTGGAGAA
ACTGGAATCCCTCCCGGAGAACAAGAAGTGTGTCCCGAGGGCATCGAGGACCCCGAGGCACTCCTGGAGGGTGTGAAGA
ACGTCTGAAGGAGCACGCAGATGATGACCCTAGTCTGGCCATCACTGGGGTCCCTGTGGTGACTTGGCCAAAGAAGACT
CCAAAGAACCGGGCTGTGGGTGCGCCCAAGGGGAAGCTGGGCCGCGCTCCGCGGTGAAGTTGGCCGCCAACCGGACAAC
GGCAGGAGCTCGGCGGCGCCGGACGCGATGCCCAAGTGCGAGGCCTGCCTGCGGACCGAGTGGGAGAGTGCCACTTCT
GCAAGGACATGAAGAAGTTCGGGGGCCCCGGGCGCATGAAGCAGAGCTGCATCATGCGGCAGTGCATCGCGCCAGTGCTG
CCCCACACCGCGGTGTGCCTTGTGTGTGGCGAGGCGGGGAAGGAAGACACGGTGAAGAGGAGGAAGGCAAGTTTAACTT
CATGCTCATGGAGTGCTCCATCTGCAATGAAATCATCCACCCTGGATGCCTTAAGATTAAGGAGTCAGAGGGTGTGGTCA
ACGACGAGCTTCCAAACTGCTGGGAGTGTCCGAAGTGTAAACCAGCCGCAAGACCGGGAACAAAAGCGTGGCCCTGGC
TTTAAGTACGCCTCCAACCTGCCCGCTCCCTGCTCAAGGAGCAGAAGATGAACCGGACAACAAGGAAGGGCAGGAACC
TGCCAAGCGGAGGAGTGAGTGTGAGGAGGCGCCCGGCGCAGGTGCGATGAGCACTCGAAGAAGGTGCCGCCGACGGCC
TTCTGCGCAGAAAAGTCTGACGACGTGCACCTGAGGAAGAAGCGGAAATACGAGAAGCCCCAGGAGCTGAGTGGACGCAAG
CGGGCCTCATCGCTTCAAACGTCCCCCGGTTCCCTCTCTACCTCTCGCCGAGGCCCCCTCTAGGCAGCAGCCTCAGCCC
CTGGTGGAGATCCAGTCTCACTTACTTCCAGCAGCAGCTCAAACCTGGCAAAGAAGATAAGCTTTTCAGGAAAAAGCGGC
GGTCTTGAAGAACGCCGAGGACCGCATGGCGCTGGCCAACAAGCCCTCCGGCGCTTCAAGCAGGAACCCGAGGACGAA
CTGCCCGAGGCGCCCCCAAGACCAGGGAGAGCGACCACTCCCGCTCCAGTCCCCCACCAGCGGACCCAGCACCGAAGG
GGCCGAGGGCCCGGAGGAGAAGAAGAAGGTGAAGATGCGCCGGAAGCGGCGGCTTCCCAACAAGGAGCTGAGCAGGGAGC
TGAGCAAGGAGCTCAACCACGAGATCCAGAGGACGAGAACAGCCTGGCCAACGAGAACCAGCAGCCCATCAAGTCGGAG
CCTGAGAGCGAGGGCGAGGAGCCCAAGCGCCCCCGGGCATCTGCGAGCGTCCCCACCGCTTCAAGCAAGGGCTCAACGG
CACCCCCCGGAGCTGCGGCACCAGCTGGGGCCAGCCTGCGCAGCCCGCCCCGTGTCTCTCCGGCCCCCACCCTCCG
TGTCCCCGCCAAGTGTATCCAGATGGAGCGCATGTGATCCGGCCACCCCCATCAGCCCCCGCCTGACTCGCTACCC
CTGGACGATGGGGCAGCCACGTCTATGCACAGGGAGGTGTGGATGGCCGTCTTACGTACCTCAGCCACCAAGACCTGTG
TGTGTGCATGCGGGTCTGCAGGACCTGGAACCGTGGTGTGCGATAAGCGGTTGTGGACCCGATTGACCTGAACCACT
GCAAGTCTATCACACCCCTGATGCTGAGTGGCATCATCCGGCGACAGCCCGTCTCCCTCGACCTCAGCTGGACCAATATC
TCCAAGAAGCAGCTGAGCTGGCTCATCAACCGGCTGCCTGGGCTCCGGGACTTGGTGTGTGAGGCTGCTCATGGATCGC
GGTCTCGGCCCTTTGCAGCTCCAGTTGTCCGTGCTCCGACCCCTGGATGTCCAGTGGGTGGAGGGACTAAAGGATGCCC
AGATGCGGGATCTCCTGTCCCCGCCACAGACAACAGGCCAGGTGAGTGGACAATCGGAGCAAGCTCCGGAACATCGTG
GAGCTGCGCCTGGCAGGCCTGGACATCACAGATGCCTCCCTGCGGCTCATCATCCGCCACATGCCCCTGCTCTCCAAGCT
CCACCTCAGTTACTGTAACCACGTACCGACCACTATCAACCTGCTCACTGCTGTTGGCACCAACCACCGAGACTCCT
TAACCGAGATCAACCTGTCTGACTGCAATAAGGTCACTGATCAGTGCCTGTCTTCTTCAAACGCTGTGGAAACATCTGT
CATATTGACCTGAGGTACTGCAAGCAAGTCACCAAGGAAGGCTGTGAGCAGTTCATAGCCGAGATGTCTGTGAGTGTCCA
GTTTGGGCAAGTAGAAGAAAACTCCTGCAAAAACTGAGTTAGTCCAAGGATAAGTATGTAAATACGGGGCGGGCTCTGG
GAGGGGAGAGACTTTACAAAAATGAGGGCTTTTATTTTCCATTTGGAACGTGGGACAACAGACCACAACGCAATTCCATT
TTGCAAGTCTTTCCAAGGGAGAAGCTGTTCAACCACCGTTTGGGGGATGAGTGAGCCGACACTTTCCTTTGGTCTTTCT
GAATCGTAACTGCACTGCTTTCTGGACATTTCTAAGGCGGCCTTTACAAGAAGACATTCCTGTGCGAGAGGAGGGTGA
CTTCGGAGAAATTCTCATACTGAAGCATGAGCTTAGGAGTTTCTGTTAGTGGTAGTGGTGTGTTGGACACTTCATTCCCTT
GCAACACCGAGGTTTTGGGTGTTGACATAAAGTGGACCACACACCACATCTGCTGCCGTCTTGACACTTTTTTTTTGTTG
GTTGGTTTTGTACATCTTACATTATGCAGAACTATTTTTGTACAAATTGTTTAAAAAGTATTTATGCAAGTTTTGAATG
CATACCAGTGTTTTTATTGTTTTGAGATTGCCAATTTTCTGATTTCTTAAAGGTAGGAGAGAATTTAACGTGTACTTCA
TCGACACAACCCATCTACAAATGTGCCAGATCTAACAAGTAGGCTAAGACCTTCCACTTAAAGCATGTTTAACTGGA

AGTTGAGAGTCTGCTTTGTACCTCAAGAGTTACATGAGCATGTTGTGGATAAATGTAAATTATAGTCAAAGTAAGATACT
 CTGCCAAGTTTCTCTGTAGAGAATTCACCTTTTCTCAAATTTTAAAATTTTCGACTTCAGCCTTTGCACTCAGGAGGTTCT
 GCTCCAGCATGAGCTCTTGTACTTACATAGATCTAATTTATACAGTGAGTCAAGACGTAGAATAAATGCTCCACATAGC
 CTTTCTTTTGTCTTTGCTTCTCTCTCTGAAGTGTGAGTTGAGTTCTCATTTAGGTTTGTAAACATGGCTATTTCCCTAGTT
 GTAAAGTTCTGCATTTATAAGTGCCATTGTTGTAAGGTGGTGTTCCTAGACCTTCCCTGATGCGATTTTACCTTTGTTG
 AATTTGTATAAAACAATTGTACAAAAAAACCCTCTTGAACCTTTGAGGGTTTCTGTTCTAGGAGTGGACTAGAAGTTTAA
 GCCCAGAGTCAGTAAACACTGTTTTGAAGTCCAAA

Polycomb group and SCF ubiquitin ligases are found in a novel BCOR complex that
 is recruited to BCL6 targets

Mol Cell Biol 26 (18), 6880-6889 (2006)

GTACGTGTGTGTGCCACATCTTTGAGTGCCGGGAGTTTAAAAGTTAGGCAGTCCTTATAGGTATGGAAGCCGAGCTAAT
 TTCCTTCTGAGCCCCCAAATGCCTCCTCCACATGGCGGGTCCGCAAATGGGGGGATCTGCAGAGGATCACCCCCACGA
 AAAAGACATGCAGCAGAAAAGCAAAAAAGAAAAACAGTTATATATACAAAATGCTTTGAATTTGAGTCGGCCACACAGCG
 CCCGATTGACCGCCAGCGATACGACGAGAACGAGGACTTGTGCGACGTGGAGGAGATCGTCAGCGTCCGCGGCTTCAGCC
 TGGAGGAGAAGCTTCGCAGCCAGCTGTACCAGGGGACTTCGTGCACGCCATGGAGGGCAAAGATTTCAACTATGAGTAC
 GTACAGAGAGAAGCTCTCAGGGTTCCCCTGATATTTGAGAAAAAGGATGGACTGGGAATTAAGATGCCTGACCTGATTT
 CACAGTCCGAGACGTCAAACCTCTAGTGGGGAGCCGGCGGCTTGTGGACGTGATGGATGTGAACACCCAGAAGGGCACGG
 AGATGAGCATGTCCAGTTTGTGCGTTACTACGAGACGCCCCAGGCCCCAGCGGACAAGCTGTACAACGTATCAGCCTA
 GAGTTCAGCCACACCAAGCTGGAGCACTTGGTCAAGCGTCCGACTGTGGTAGACCTGGTGGACTGGGTGGACAACATGTG
 GCCCCAGCATCTGAAGGAGAAGCAGACAGAAGCCACGAACGCCATTGCAGAGATGAAGTACCCGAAAGTGAAAAAGTACT
 GTCTGATGAGCGTGAAAGGTTGTTTTACCGACTTCCACATCGACTTTGGAGGCACTTCCGTTTGGTACCATGTTTTCCGG
 GGTGGGAAGATTTTTTGGCTGATTCTCCAACGCTGCACAATTTGGCGCTGTACGAGGAGTGGGTGCTGTCAGGCAAAACA
 GAGTGACATCTTTCTGGGAGACCGTGTGGAACGATGCCAAAGAATTGAGCTGAAGCAGGGCTACACATTTTTTCATCCCTT
 CCGGTTGGATCCATGCCGTCTACACCCCTGTAGACTCTTTGGTGTTCGGCGGAAACATCCTGCACAGCTTTAACGTGCCC
 ATGCAGCTGCGGATCTACGAGATCGAGGACAGGACGCGGGTGCAGCCCAAATTCCGTTACCCCTTCTACTATGAGATGTG
 CTGGTATGTCTGGAGAGATACGTGTACTGTGTGACCCAGCGCTCCACCTCACTCAGGAATACCAGAGGGAGTCGATGC
 TTATTGATGCCCCGAGGAAGCCAGCATAGACGGCTTCTCTTCGGATTCTTGGCTGGAGATGGAGGAGGAGCCTGTGAT
 CAGCAGCCTCAGGAGGAGGAGGAGAAGGACGAGGAGGGCGAGGGCAGGGACAGGGACCCCAAACCGCCCACCGATGGCTC
 CACTTCACCCACCAGCACGCCCTCTGAGGACCAGGAGGCCCTCGGGAAGAAGCCCAAAGCACCTGCCCTGCGATTCTCTCA
 AAAGGACTTTGTCTAATGAGTCGGAGGAAAGTGTGAAGTCCACCACATTGGCCGTAGACTACCCCAAGACCCCCACCGGC
 TCTCCCGCCACGGAGGTCTCTGCCAAATGGACCCATCTCACTGAGTTTGAAGTGAAGGGCCTGAAAGCTCTGGTGGAGAA
 ACTGGAATCCCTCCCGGAGAACAAGAAGTGTGTCCCGAGGGCATCGAGGACCCCAAGGCACTCCTGGAGGGTGTGAAGA
 ACGTCTGAAGGAGCACGCAGATGATGACCCTAGTCTGGCCATCACTGGGGTCCCTGTGGTGACTTGGCCAAAGAAGACT
 CCAAAGAACCGGGCTGTGGGTGCGCCCAAGGGGAAGCTGGGCCGCGCTCCGCGGTGAAGTTGGCCGCCAACCGGACAAC
 GGCAGGAGCTCGGCGGCGCCGACGCGATGCCGCAAGTGCGAGGCCTGCCTGCGGACCGAGTGCGGAGAGTGCCACTTCT
 GCAAGGACATGAAGAAGTTCGGGGGCCCCGGGCGCATGAAGCAGAGCTGCATCATGCGGCAGTGCATCGCGCCAGTGCTG
 CCCCACACCGCGTGTGCCTTGTGTGTGGCGAGGCGGGGAAGGAAGACACGGTGAAGAGGAGGAAGGCAAGTTTAACCT
 CATGCTCATGGAGTGCTCCATCTGCAATGAAATCATCCACCCTGGATGCCTTAAGATTAAGGAGTCAGAGGGTGTGGTCA
 ACGACGAGCTTCCAAACTGCTGGGAGTGTCCGAAGTGTAAACACGCCGCAAGACCGGGAAACAAAAGCGTGGCCCTGGC
 TTTAAGTACGCCTCCAACCTGCCCGCTCCCTGTCTAAGGAGCAGAAGATGAACCGGGACAACAAGGAAGGGCAGGAACC
 TGCCAAGCGGAGGAGTGAGTGTGAGGAGGCGCCCGGCGCAGGTGCGATGAGCACTCGAAGAAGGTGCCGCCGACGGCC
 TTCTGCGCAGAAAAGTCTGACGACGTGCACCTGAGGAAGAAGCGGAAATACGAGAAGCCCCAGGAGCTGAGTGGACGCAAG
 CGGGCCTCATCGCTTCAAACGTCCCCCGGTTCCCTCTCACCTCTCGCCGAGGCCCCCTTAGGCAGCAGCCTCAGCCC
 CTGGTGGAGATCCAGTCTCACTTACTTCCAGCAGCAGCTCAAACCTGGCAAAGAAGATAAGCTTTTTCAGGAAAAAGCGGC
 GGTCTTGAAGAACGCGGAGGACCGCATGGCGCTGGCCAACAAGCCCTCCGCGCTTCAAGCAGGAACCCGAGGACGAA
 CTGCCCCAGGCGCCCCCAAGACCAGGAGAGCGACCACTCCCGCTCCAGTCCCCCACCAGCGGGACCCAGCACCAGGAAGG
 GGCCGAGGGCCCCGAGGAGAAGAAGAAGGTGAAGATGCGCCGGAAGCGCGGCTTCCCAACAAGGAGCTGAGCAGGGAGC

TGAGCAAGGAGCTCAACCACGAGATCCAGAGGACGGAGAACAGCCTGGCCAACGAGAACCAGCAGCCCATCAAGTCGGAG
CCTGAGAGCGAGGGCGAGGAGCCCAAGCGGCCCCGGGCATCTGCGAGCGTCCCCACCGCTTCAGCAAGGGGCTCAACGG
CACCCCCCGGAGCTGCGGCACCAGCTGGGGCCCAGCCTGCGCAGCCCGCCCCGTGTCATCTCCCGGCCCCACCCTCCG
TGTCCCCGCCAAGTGTATCCAGATGGAGCGCCATGTGATCCGGCCACCCCCATCAGCCCCCGCCTGACTCGCTACCC
CTGGACGATGGGGCAGCCCACGTATGCACAGGGAGGTGTGGATGGCCGTCTTCAGCTACCTCAGCCACCAAGACCTGTG
TGTGTGCATGCGGGTCTGACAGGACCTGGAACCGTGGTGCTGCGATAAGCGGTTGTGGACCCGCATTGACCTGAACCACT
GCAAGTCTATCACACCCCTGATGCTGAGTGGCATCATCCGGCGACAGCCCGTCTCCCTCGACCTCAGCTGGACCAATATC
TCCAAGAAGCAGCTGAGCTGGCTCATCAACCGGCTGCCTGGGCTCCGGGACTTGGTGCTGTCAGGCTGCTCATGGATCGC
GGTCTCGGCCCCTTTGAGCTCCAGTTGTCCGTGCTCCGGACCCTGGATGTCCAGTGGGTGGAGGGACTAAAGGATGCCC
AGATGCGGGATCTCCTGTCCCCGCCCACAGACAACAGGCCAGGTGAGTGGACAATCGGAGCAAGCTCCGGAACATCGTG
GAGCTGCGCCTGGCAGGCCTGGACATCACAGATGCCTCCCTGCGGCTCATCATCCGCCACATGCCCCGTGCTCTCAAGCT
CCACCTCAGTTACTGTAACCACGTCACCGACCAGTCTATCAACCTGCTCACTGCTGTTGGCACCACCACCGAGACTCCT
TAACCGAGATCAACCTGTCTGACTGCAATAAGGTCACTGATCAGTGCCTGTCTTCTTCAAACGCTGTGGAAACATCTGT
CATATTGACCTGAGGTACTGCAAGCAAGTCACCAAGGAAGGCTGTGAGCAGTTCATAGCCGAGATGTCTGTGAGTGTCCA
GTTTGGGCAAGTAGAAGAAAACTCCTGCAAAAACTGAGTTAGTCCAAGGATAAGTATGTAAATACGGGGCGGGCTCTGG
GAGGGGAGAGACTTTACAAAAATGAGGGCTTTTATTTTCCATTTGGAACGTGGGACAACAGACCACAACGCAATTCATT
TTGCAAGTCTTTTCCAAGGGAGAAGCTGTTCAACCACCCGTTTGGGGGATGAGTGAGCCGACACTTTCCTTTGGTCTTTCT
GAATCGTAACTGCACTGCTTTCTGGACCATTCTAAGGCGGCCTTTACAAGAAGACATTCTGTGCGAGAGGAGGGTGA
CTTCGGAGAAATCTCATACTGAAGCATGAGCTTAGGAGTTTCTGTTAGTGGTAGTGGTGTGTTTGGACACTTCATTCTCT
GCAACACCGAGGTTTTGGGTGTTGACATAAAGTGGACCACACACCACATCTGCTGCCGTCTTGACACTTTTTTTTTGTTG
GTTGGTTTTGTTACATCTTACATTATGCAGAACTATTTTTGTACAAATTGTTTAAAAGTTATTTATGCAAGTTTTGAATG
CATACCAGTGTTTTTATTGTTTTGAGATTGCCAATTTCTCTGATTTCTTAAAGTAGGAGAGAATTTAACGTGTACTTCA
TCGACACAACCCATCTACAAATGTGCCAGATCTAACAAGTAGGCTAAGACCTTCCACTTAAAAGCATGTTTAACTGGA
AGTTGAGAGTCTGCTTTGTACCTCAAGAGTTACATGAGCATGTTGTGGATAAATGTAAATTATAGTCAAAGTAAGATACT
CTGCCAAGTTTCTCTGTAGAGAATTCATTTTCTCAAATTTTAAAATTCGACTTCAGCCTTTGCACTCAGGAGGTTCT
GCTCCAGCATGAGCTCTTGTACTTACATAGATCTAATTTATACAGTGAGTCAAGACGTAGAATAAATGCTCCCACATAGC
CTTTCTTTTGCTTTGCTTCTCTCTCTGAAGTGTGAGTTGAGTTCTCATTTAGGTTTGTAAACATGGCTATTTCTAGTT
GTAAAGTTCTGCATTTATAAGTGCCATTGTTGTAAGGTGGTGTTCCTAGACCTTCCCTGATGCGATTTTACCTTTGTTG
AATTTGTATAAACAATTGTACAAAAAAACCCTCTTGAACCTTTGAGGGTTTCTGTTCTAGGAGTGGACTAGAAGTTTAA
GCCCAGAGTCAGTAAACACTGTTTTGAAGTCCAAA

Histone demethylation by a family of JmjC domain-containing proteins
Nature 439 (7078), 811-816 (2006)

GTACGTGTGTGTGCCACATCTTTGAGTGCCGGGAGTTTAAAAGTTAGGCAGTCCTTATAGGTATGGAAGCCGAGCTAAT
TTCCTTCTGAGCCCCCAAATGCCTCCTCCACATGGCGGGTCCGCAAATGGGGGATCTGCAGAGGATCACCCCCACGA
AAAAGACATGCAGCAGAAAAGCAAAAAAGAAAAAGCACTTATATATACAAAATGCTTTGAATTTGAGTCGGCCACACAGCG
CCCGATTGACCGCCAGCGATACGACGAGAACGAGGACTTGTGCGACGTGGAGGAGATCGTCAGCGTCCGCGGCTTCAGCC
TGGAGGAGAAGCTTCGCAGCCAGCTGTACCAGGGGACTTCGTGCACGCCATGGAGGGCAAAGATTTCAACTATGAGTAC
GTACAGAGAGAAGCTCTCAGGGTTCCCCTGATATTTGAGAAAAAGGATGGACTGGGAATTAAGATGCCTGACCCTGATTT
CACAGTCCGAGACGTCAAACCTCTAGTGGGGAGCCGGCGGCTTGTGGACGTGATGGATGTGAACACCCAGAAGGGCACGG
AGATGAGCATGTCCCAGTTTGTGCGTTACTACGAGACGCCCCAGGCCAGCGGACAAGCTGTACAACGTCATCAGCCTA
GAGTTCAGCCACACCAAGCTGGAGCACTTGGTCAAGCGTCCGACTGTGGTAGACCTGGTGGACTGGGTGGACAACATGTG
GCCCCAGCATCTGAAGGAGAAGCAGACAGAAGCCACGAACGCCATTGCAGAGATGAAGTACCCGAAAGTGAAAAAGTACT
GTCTGATGAGCGTGAAAGGTTGTTTACCGACTTCCACATCGACTTTGGAGGCACTTCCGTTTGGTACCATGTTTTCCGG
GGTGGGAAGATTTTTTGGCTGATTCTCCTCAACGCTGCACAATTTGGCGCTGTACGAGGAGTGGGTGCTGTGAGGCAACA
GAGTGACATCTTTCTGGGAGACCGTGTGGAACGATGCCAAGAATTGAGCTGAAGCAGGGCTACACATTTTTTATCCCTT
CCGGTTGGATCCATGCCGTCTACACCCCTGTAGACTCTTTGGTGTTCGGCGGAAACATCCTGCACAGCTTTAACGTGCCC
ATGCAGCTGCGGATCTACGAGATCGAGGACAGGACGCGGGTGCAGCCCAAATTCGGTTACCCCTTCTACTATGAGATGTG

CTGGTATGTCCTGGAGAGATACGTGTACTGTGTGACCCAGCGCTCCCACCTCACTCAGGAATACCAGAGGGAGTCGATGC
TTATTGATGCCCCGAGGAAGCCCAGCATAGACGGCTTCTCTTCGGATTCTGCTGGAGATGGAGGAGGAGGCCTGTGAT
CAGCAGCCTCAGGAGGAGGAGGAGAAGGACGAGGAGGGCGAGGGCAGGGACAGGGCACCCAAACCGCCCACCGATGGCTC
CACTTCACCCACCAGCACGCCCTCTGAGGACCAGGAGGCCCTCGGGAAGAAGCCCAAAGCACCTGCCCTGCGATTCTCTCA
AAAGGACTTTGTCTAATGAGTCGGAGGAAAGTGTGAAGTCCACCACATTGGCCGTAGACTACCCCAAGACCCCCACCGGC
TCTCCCGCCACGGAGGTCTCTGCCAAATGGACCCATCTCACTGAGTTTGAAGTGAAGGGCCTGAAAGCTCTGGTGGAGAA
ACTGGAATCCCTCCCGGAGAACAAGAAGTGTGTCCCGAGGGCATCGAGGACCCCAAGGCACTCCTGGAGGGTGTGAAGA
ACGTCCTGAAGGAGCACGCAGATGATGACCCTAGTCTGGCCATCACTGGGGTCCCTGTGGTGAAGTGGCCAAAGAAGACT
CCAAAGAACCGGGCTGTGGGTGCGGCCAAGGGGAAGCTGGGCCCGGCCCTCCGCGGTGAAGTTGGCCGCCAACCGGACAAC
GGCAGGAGCTCGGCGGCGCCGGACGCGATGCCGCAAGTGCAGGGCCTGCCTGCGGACCGAGTGCAGGAGTGCACCTTCT
GCAAGGACATGAAGAAGTTCGGGGGCCCCGGGCGCATGAAGCAGAGCTGCATCATGCGGCAGTGCATGCGCCAGTGTCTG
CCCCACACCGCGTGTGCCTTGTGTGTGGCGAGGCGGGGAAGGAAGACACGGTGAAGAGGAGGAAGGCAAGTTTAACT
CATGCTCATGGAGTGTCTCCATCTGCAATGAAATCATCCACCCTGGATGCCTTAAGATTAAGGAGTCAGAGGGTGTGGTCA
ACGACGAGCTTCCAAACTGCTGGGAGTGTCCGAAGTGTAAACACGCCGGAAGACCGGGAACAAAAGCGTGGCCCTGGC
TTTAAGTACGCTTCAACCTGCCCGGCTCCCTGCTCAAGGAGCAGAAGATGAACCGGACAACAAGGAAGGGCAGGAACC
TGCCAAGCGGAGGAGTGAGTGTGAGGAGGCGCCCGGCGCAGGTGCGATGAGCACTCGAAGAAGGTGCCGCCGACGGCC
TTCTGCGCAGAAAGTCTGACGACGTGCACCTGAGGAAGAAGCGGAAATACGAGAAGCCCCAGGAGCTGAGTGGACGCAAG
CGGGCCTCATCGCTTCAAACGTCCCCCGGTTCTCTCTCACCTCTCGCCGAGGCCCTCTAGGCAGCAGCCTCAGCCC
CTGGTGGAGATCCAGTCTCACTTACTTCCAGCAGCAGCTCAAACCTGGCAAAGAAGATAAGCTTTTCAGGAAAAAGCGGC
GGTCTTGGAAGAACGCCGAGGACCGCATGGCGCTGGCCAACAAGCCCCCTCCGCGCTTCAAGCAGGAACCCGAGGACGAA
CTGCCCGAGGCGCCCCCAAGACCAGGGAGAGCGACCACTCCCGCTCCAGTCCCCCACCGCGGGACCCAGCACCGAAGG
GGCCGAGGGCCCCGAGGAGAAGAAGAAGGTGAAGATGCGCCGGAAGCGGCGGCTTCCCAACAAGGAGCTGAGCAGGGAGC
TGAGCAAGGAGCTCAACCACGAGATCCAGAGGACGGAACAGCCTGGCCAACGAGAACCAGCAGCCCATCAAGTCGGAG
CCTGAGAGCGAGGGCGAGGAGCCCAAGCGGCCCCCGGCATCTGCGAGCGTCCCCACCGCTTCAAGCAAGGGCTCAACGG
CACCCCCCGGGAGCTGCGGCACCAGCTGGGGCCAGCCTGCGCAGCCCCGCCCCGTGTCATCTCCCGGCCCCACCTCCG
TGTCCCCGCCAAGTGTATCCAGATGGAGCGCCATGTGATCCGGCCACCCCCATCAGCCCCCGCCTGACTCGCTACCC
CTGGACGATGGGGCAGCCACGTCTATGCACAGGAGGTGTGGATGGCCGTCTTCAGCTACCTCAGCCACCAAGACCTGTG
TGTGTGCATGCGGGTCTGCAGGACCTGGAACCGTGGTGTGCGATAAGCGGTTGTGGACCCGCATTGACCTGAACCACT
GCAAGTCTATCACACCCCTGATGCTGAGTGGCATCATCCGGCGACAGCCCGTCTCCCTCGACCTCAGCTGGACCAATATC
TCCAAGAAGCAGCTGAGCTGGCTCATCAACCGGTGCTGCTGGGCTCCGGGACTTGGTGTGTGTCAGGCTGCTCATGGATCGC
GGTCTCGGCCCTTTGAGCTCCAGTTGTCCGTGCTCCGACCTGGATGTCCAGTGGGTGGAGGGACTAAAGGATGCCC
AGATGCGGGATCTCTGTCCCCGCCACAGACAACAGGCCAGGTGAGTGGACAATCGGAGCAAGCTCCGGAACATCGTG
GAGCTGCGCCTGGCAGGCCTGGACATCACAGATGCCTCCCTGCGGCTCATCATCCGCCACATGCCCCGTCTCTCAAGCT
CCACCTCAGTTACTGTAACCACGTACCGACCACTATCAACCTGCTCACTGCTGTTGGCACCACCACCCGAGACTCCT
TAACCGAGATCAACCTGTCTGACTGCAATAAGGTCACTGATCAGTGCCTGTCTTCTTCAAACGCTGTGGAAACATCTGT
CATATTGACCTGAGGTACTGCAAGCAAGTCACCAAGGAAGGCTGTGAGCAGTTCATAGCCGAGATGTCTGTGAGTGTCCA
GTTTGGGCAAGTAGAAGAAAACTCCTGCAAAAACTGAGTTAGTCCAAGGATAAGTATGTAAATACGGGGCGGGCTCTGG
GAGGGGAGAGACTTTACAAAAATGAGGGCTTTTATTTTCCATTTGGAACGTGGGACAACAGACCACAACGCAATTCCATT
TTGCAAGTCTTTCCAAGGGAGAAGCTGTTCAACCACCCGTTTGGGGATGAGTGAGCCGACACTTTCCTTTGGTCTTTCT
GAATCGTAACTGCACTGCTTTCTGGACCATTTCTAAGGCGGCCTTTACAAGAAGACATTCTGTGCGAGAGGAGGGTGA
CTTCGGAGAAAATTCTCATACTGAAGCATGAGCTTAGGAGTTTCTGTTAGTGGTAGTGGTGTGTTTGGACACTTCATTCTT
GCAACACCGAGGTTTTGGGTGTTGACATAAAGTGGAACACACACCACATCTGCTGCCGTCTTGACACTTTTTTTTGTGTTG
GTTGGTTTTGTACATCTTACATTATGCAGAACTATTTTGTACAAATTGTTTAAAAAGTTATTTATGCAAGTTTTGAATG
CATACAGTGTGTTTTATTGTTTTGAGATTGCCAATTTTCTGATTTCTTAAGGTAGGAGAGAATTTAACGTGTACTTCA
TCGACACAACCATCTACAAATGTGCCAGATCTAACAAGTAGGCTAAGACCTTCCACTTAAAGCATGTTTAACTGGA
AGTTGAGAGTCTGCTTTGTACCTCAAGAGTTACATGAGCATGTTGTGGATAAATGTAAATTATAGTCAAAGTAAGATACT
CTGCCAAGTTTCTCTGTAGAGAATTCATTTTCTCAAATTTTAAAAATTTGACTTCAGCCTTTGCACTCAGGAGTTCT
GCTCCAGCATGAGCTCTTGTACTTACATAGATCTAATTTATACAGTGAGTCAAGACGTAGAATAAATGCTCCCACATAGC

CTTCTTTTGGCTTTTGGCTTCTCTCTCTGAAGTGTGAGTTGAGTTCTCATTTAGGTTTGTAAACATGGCTATTTCTAGTT
GTAAAGTTCTGCATTATAAGTGCCATTGTTGTAAGGTGGTGTTCCTAGACCTTCCCTGATGCGATTTTACCTTTGTTG
AATTTGTATAAAACAATTGTACAAAAAACCACCTCTGAACCTTTGAGGGTTTCTGTTCTAGGAGTGGACTAGAAGTTAA
GCCCAGAGTCAGTAAACACTGTTTTGAAGTCCAAA

Systematic analysis and nomenclature of mammalian F-box proteins

Genes Dev 18 (21), 2573-2580 (2004)

GTACGTGTGTGTGCCACATCTTTGAGTGCCGGGAGTTTAAAAGTTAGGCAGTCCTTATAGGTATGGAAGCCGAGCTAAT
TTCCTTCTGAGCCCCCAAATGCCTCCTCCACATGGCGGGTCCGCAAATGGGGGGATCTGCAGAGGATCACCCCCACGA
AAAAGACATGCAGCAGAAAAGCAAAAAAGAAAACAGTTATATATACAAAATGCTTTGAATTTGAGTCGGCCACACAGCG
CCCGATTGACCGCCAGCGATACGACGAGAACGAGGACTTGTGCGACGTGGAGGAGATCGTCAGCGTCCGCGGCTTCAGCC
TGGAGGAGAAGCTTCGCAGCCAGCTGTACCAGGGGACTTCGTGCACGCCATGGAGGGCAAAGATTTCAACTATGAGTAC
GTACAGAGAGAAGCTCTCAGGGTTCCCCTGATATTTGAGAAAAGGATGGACTGGGAATTAAGATGCCTGACCCCTGATTT
CACAGTCCGAGACGTCAAACCTCCTAGTGGGGAGCCGGCGGCTTGTGGACGTGATGGATGTGAACACCCAGAAGGGCACGG
AGATGAGCATGTCCCAGTTTGTGCGTTACTACGAGACGCCCCGAGGCCACGCGGACAAGCTGTACAACGTCATCAGCCTA
GAGTTCAGCCACACCAAGCTGGAGCACTTGGTCAAGCGTCCGACTGTGGTAGACCTGGTGGACTGGGTGGACAACATGTG
GCCCCAGCATCTGAAGGAGAAGCAGACAGAAGCCACGAACGCCATTGCAGAGATGAAGTACCCGAAAGTGAAAAAGTACT
GTCTGATGAGCGTGAAAGGTTGTTTCACCGACTTCCACATCGACTTTGGAGGCACTTCCGTTTGGTACCATGTTTTCCGG
GGTGGGAAGATTTTTTGGCTGATTCTCCAACGCTGCACAATTTGGCGCTGTACGAGGAGTGGGTGCTGTACGGCAAACA
GAGTGACATCTTTCTGGGAGACCGTGTGGAACGATGCCAAAGAATTGAGCTGAAGCAGGGCTACACATTTTTTCATCCCTT
CCGGTTGGATCCATGCCGTCTACACCCCTGTAGACTCTTTGGTGTTCGGCGGAAACATCCTGCACAGCTTTAACGTGCCC
ATGCAGCTGCGGATCTACGAGATCGAGGACAGGACGCGGGTGCAGCCCAAATTCCGTTACCCCTTCTACTATGAGATGTG
CTGGTATGTCTGGAGAGATACGTGTACTGTGTGACCCAGCGCTCCACCTCACTCAGGAATACCAGAGGGAGTCGATGC
TTATTGATGCCCCGAGGAAGCCAGCATAGACGGCTTCTCTTCGGATTCTGGCTGGAGATGGAGGAGGAGGCCTGTGAT
CAGCAGCCTCAGGAGGAGGAGGAGAAGGACGAGGAGGGCGAGGGCAGGGACAGGGCACCCAAACCGCCACCGATGGCTC
CACTTACCCACCAGCACGCCCTCTGAGGACCAGGAGGCCCTCGGGAAGAAGCCCAAAGCACCTGCCCTGCGATTCTCTCA
AAAGGACTTTGTCTAATGAGTCGGAGGAAAGTGTGAAGTCCACCACATTGGCCGTAGACTACCCCAAGACCCCCACCGGC
TCTCCCGCCACGGAGGTCTCTGCCAAATGGACCCATCTCACTGAGTTTGAAGTGAAGGGCCTGAAAGCTCTGGTGGAGAA
ACTGGAATCCCTCCCGGAGAACAAGAAGTGTGTCCCGAGGGCATCGAGGACCCCGAGGCACTCCTGGAGGGTGTGAAGA
ACGTCTGAAGGAGCACGCAGATGATGACCCTAGTCTGGCCATCACTGGGGTCCCTGTGGTGACTTGGCCAAAGAAGACT
CCAAAGAACCGGGCTGTGGGTGCGCCCAAGGGGAAGCTGGGCCCGGCTCCGCGGTGAAGTTGGCCGCCAACCGGACAAC
GGCAGGAGCTCGGCGGCGCCGACGCGATGCCGAAGTGCAGGCGCTGCCTGCGGACCGAGTGCAGGAGAGTGCCACTTCT
GCAAGGACATGAAGAAGTTCGGGGGCCCCGGGCGCATGAAGCAGAGCTGCATCATGCGGCAGTGCATCGCGCCAGTGTCTG
CCCCACACCGCGTGTGCCTTGTGTGTGGCGAGGCGGGGAAGGAAGACACGGTGAAGAGGAGGAAGGCAAGTTTAACCT
CATGCTCATGGAGTGCTCCATCTGCAATGAAATCATCCACCCTGGATGCCTTAAGATTAAGGAGTCAGAGGGTGTGGTCA
ACGACGAGCTTCCAAACTGCTGGGAGTGTCCGAAGTGTAAACACGCCGGAAGACCGGGAAACAAAAGCGTGGCCCTGGC
TTTAAGTACGCCTCCAACCTGCCCGGCTCCCTGTCTAAGGAGCAGAAGATGAACCGGACAACAAGGAAGGGCAGGAACC
TGCCAAGCGGAGGAGTGAGTGTGAGGAGGCGCCCGGCGCAGGTGCGATGAGCACTCGAAGAAGGTGCCCGCGACGGCC
TTCTGCGCAGAAAGTCTGACGACGTGCACCTGAGGAAGAAGCGGAAATACGAGAAGCCCCAGGAGCTGAGTGGACGCAAG
CGGGCCTCATCGCTTCAAACGTCCCCCGGTTCTCTCTCACCTCTCGCCGAGGCCCCCTCTAGGCAGCAGCCTCAGCCC
CTGGTGGAGATCCAGTCTCACTTACTTCCAGCAGCAGCTCAAACCTGGCAAAGAAGATAAGCTTTTCAGGAAAAAGCGGC
GGTCTTGAAGAACGCGGAGGACCGCATGGCGCTGGCCAACAAGCCCCCTCCGGCGCTTCAAGCAGGAACCCGAGGACGAA
CTGCCCGAGGCGCCCCCAAGACCAGGAGAGCGACCACTCCCGCTCCAGTCCCCACCGCGGGACCCAGCACCGAAGG
GGCCGAGGGCCCCGAGGAGAAGAAGAAGGTGAAGATGCGCCGGAAGCGGCGGCTTCCCAACAAGGAGCTGAGCAGGGAGC
TGAGCAAGGAGCTCAACCACGAGATCCAGAGGACGAGAACAGCCTGGCCAACGAGAACCAGCAGCCCATCAAGTCGGAG
CCTGAGAGCGAGGGCGAGGAGCCCAAGCGGCCCCGGGCATCTGCGAGCGTCCCCACCGCTTCAGCAAGGGGCTCAACGG
CACCCCCCGGAGCTGCGGCACCAGCTGGGGCCAGCCTGCGCAGCCCGCCCCGTGTCATCTCCCGGCCCCCACCCTCCG
TGTCCCCGCCAAGTGTATCCAGATGGAGCGCCATGTGATCCGGCCACCCCCATCAGCCCCCGCCTGACTCGCTACCC

CTGGACGATGGGGCAGCCACGTCATGCACAGGGAGGTGTGGATGGCCGTCTTCAGCTACCTCAGCCACCAAGACCTGTG
TGTGTGCATGCGGGTCTGCAGGACCTGGAACCGTGGTGTGCGATAAGCGGTTGTGGACCCGCATTGACCTGAACCACT
GCAAGTCTATCACACCCCTGATGCTGAGTGGCATCATCCGGCGACAGCCCGTCTCCCTCGACCTCAGCTGGACCAATATC
TCCAAGAAGCAGCTGAGCTGGCTCATCAACCGGTGCCTGGGCTCCGGGACTTGGTGCTGTCAGGCTGCTCATGGATCGC
GGTCTCGGCCCCTTTGAGCTCCAGTTGTCCGTGCTCCGGACCCTGGATGTCCAGTGGGTGGAGGGACTAAAGGATGCCC
AGATGCGGGATCTCCTGTCCCCGCCACAGACAACAGGCCAGGTGAGATGGACAATCGGAGCAAGCTCCGGAACATCGTG
GAGCTGCGCCTGGCAGGCCTGGACATCACAGATGCCTCCCTGCGGCTCATCATCCGCCACATGCCCCTGCTCTCCAAGCT
CCACCTCAGTTACTGTAACCACGTCACCGACCAGTCTATCAACCTGCTCACTGCTGTTGGCACCACCACCCGAGACTCCT
TAACCGAGATCAACCTGTCTGACTGCAATAAGGTCACTGATCAGTGCCTGTCTTCTTCAAACGCTGTGAAACATCTGT
CATATTGACCTGAGGTACTGCAAGCAAGTCACCAAGGAAGGCTGTGAGCAGTTCATAGCCGAGATGTCTGTGAGTGTCCA
GTTTGGGCAAGTAGAAGAAAACTCCTGCAAAAACTGAGTTAGTCCAAGGATAAGTATGTAAATACGGGGCGGGCTCTGG
GAGGGGAGAGACTTTACAAAAATGAGGGCTTTTATTTTCCATTTGGAACGTGGGACAACAGACCACAACGCAATTCCATT
TTGCAAGTCTTTCCAAGGGAGAAGCTGTTCAACCACCCGTTTGGGGGATGAGTGAGCCGACACTTTTCTTTGGTCTTTCT
GAATCGTAACTGCACTGCTTTCTGGACCATTCTAAGGCGGCCTTTACAAGAAGACATTCTGTGCGAGAGGAGGGTGA
CTTCGGAGAAATCTCATACTGAAGCATGAGCTTAGGAGTTTCTGTTAGTGGTAGTGGTGTGTTTGGACACTTCATTCTT
GCAACACCGAGGTTTTGGGTGTTGACATAAAGTGGACCACACACCACATCTGCTGCCGTCTTGACACTTTTTTTTTGTTG
GTTGGTTTTGTTACATCTTACATTATGCAGAACTATTTTTGTACAAATTGTTTAAAAGTTATTTATGCAAGTTTTGAATG
CATACCAGTGTTTTTATTGTTTTGAGATTGCCAATTTTCTGATTTCTTAAGGTAGGAGAGAATTTAACGTGTACTTCA
TCGACACAACCCATCTACAAATGTGCCCAGATCTAACAAAGTAGGCTAAGACCTTCCACTTAAAAGCATGTTTAACTGGA
AGTTGAGAGTCTGCTTTGTACCTCAAGAGTTACATGAGCATGTTGTGGATAAATGTAAATTATAGTCAAAGTAAGATACT
CTGCCAAGTTTCTCTGTAGAGAATTCATTTTCTCAAATTTTAAAATTTGACTTCAGCCTTTGCACTCAGGAGGTTCT
GCTCCAGCATGAGCTCTTGTACTTACATAGATCTAATTTATACAGTGAGTCAAGACGTAGAATAAATGCTCCCACATAGC
CTTTCTTTTGTCTTTGCTTCTCTCTCTGAAGTGTGAGTTGAGTTCTCATTTAGGTTTGTAAACATGGCTATTTCTAGTT
GTAAAGTTCTGCATTTATAAGTGCCATTGTTGTAAGGTGGTGTTCCTAGACCTTCCCTGATGCGATTTTACCTTTGTTG
AATTTGTATAAACAATTGTACAAAAAAACCCTCTTGAACCTTTGAGGGTTTCTGTTCTAGGAGTGGACTAGAAGTTTAA
GCCCAGAGTCAGTAAACACTGTTTTGAAGTCCAAA

Large-scale characterization of HeLa cell nuclear phosphoproteins

Proc Natl Acad Sci U S A 101 (33), 12130-12135 (2004)

GTACGTGTGTGTGCCACATCTTTGAGTGCCGGGAGTTTAAAAGTTAGGCAGTCTTATAGGTATGGAAGCCGAGCTAAT
TTCCTTCTGAGCCCCCAAATGCCTCCTCCACATGGCGGGTCCGCAAATGGGGGGATCTGCAGAGGATACCCCCACGA
AAAAGACATGCAGCAGAAAAGCAAAAAAGAAAAACAGTTATATATACAAAATGCTTTGAATTTGAGTCGGCCACACAGCG
CCCGATTGACCGCCAGCGATACGACGAGAACGAGGACTTGTGCGACGTGGAGGAGATCGTCAGCGTCCGCGGCTTCAGCC
TGGAGGAGAAGCTTCGCAGCCAGCTGTACCAGGGGACTTCGTGCACGCCATGGAGGGCAAAGATTTCAACTATGAGTAC
GTACAGAGAGAAGCTCTCAGGGTTCCCTGATATTCGAGAAAAGGATGGACTGGGAATTAAGATGCCTGACCTGATTT
CACAGTCCGAGACGTCAAACCTCTAGTGGGGAGCCGGCGGCTTGTGGACGTGATGGATGTGAACACCCAGAAGGGCACGG
AGATGAGCATGTCCCAGTTTGTGCGTTACTACGAGACGCCCCGAGGCCAGCGGACAAGCTGTACAACGTATCAGCCTA
GAGTTCAGCCACACCAAGCTGGAGCACTTGGTCAAGCGTCCGACTGTGGTAGACCTGGTGGACTGGGTGGACAACATGTG
GCCCCAGCATCTGAAGGAGAAGCAGACAGAAGCCACGAACGCCATTGCAGAGATGAAGTACCCGAAAGTGAAAAAGTACT
GTCTGATGAGCGTGAAAGGTTGTTTCACCGACTTCCACATCGACTTTGGAGGCACTTCCGTTTGGTACCATGTTTTCCGG
GGTGGGAAGATTTTTTGGCTGATTCTCCAACGCTGCACAATTTGGCGCTGTACGAGGAGTGGGTGCTGTGAGGCAACA
GAGTGACATCTTTCTGGGAGACCGTGTGGAACGATGCCAAGAATTGAGCTGAAGCAGGGCTACACATTTTTTCATCCCTT
CCGGTTGGATCCATGCCGTCTACACCCCTGTAGACTCTTTGGTGTTCGGCGGAAACATCCTGCACAGCTTTAACGTGCCC
ATGCAGCTCGGGATCTACGAGATCGAGGACAGGACGCGGGTGCAGCCCAAATTCGGTTACCCCTTCTACTATGAGATGTG
CTGGTATGTCTGGAGAGATACGTGTACTGTGTGACCCAGCGCTCCACCTCACTCAGGAATACCAGAGGGAGTTCGATGC
TTATTGATGCCCCGAGGAAGCCAGCATAGACGGCTTCTCTTCGGATTCTGGCTGGAGATGGAGGAGGAGGCCTGTGAT
CAGCAGCTCAGGAGGAGGAGGAGAAGGACGAGGAGGGCGAGGGCAGGGACAGGGCACCCAAACCGCCACCGATGGCTC
CACTTCACCCACCAGCACGCCCTCTGAGGACCAGGAGGCCCTCGGGAAGAAGCCCAAAGCACCTGCCCTGCGATTCTCTCA

AAAGGACTTTGTCTAATGAGTCGGAGGAAAGTGTGAAGTCCACCACATTGGCCGTAGACTACCCCAAGACCCCCACCGGC
TCTCCCGCCACGGAGGTCTCTGCCAAATGGACCCATCTCACTGAGTTTGAAGTGAAGGGCCTGAAAGCTCTGGTGGAGAA
ACTGGAATCCCTCCCGGAGAACAAGAAGTGTGTCCCGAGGGCATCGAGGACCCCAGGCACTCCTGGAGGGTGTGAAGA
ACGTCCTGAAGGAGCACGCAGATGATGACCCTAGTCTGGCCATCACTGGGGTCCCTGTGGTGACTTGGCCAAAGAAGACT
CCAAAGAACCGGGCTGTGGGTGCGCCCAAGGGGAAGCTGGGCCCGGCCTCCGCGGTGAAGTTGGCCGCCAACCGGACAAC
GGCAGGAGCTCGGCGGCGCCGGACGCGATGCCGAAGTGCGAGGCCTGCCTGCGGACCGAGTGCGGAGAGTGCCACTTCT
GCAAGGACATGAAGAAGTTCGGGGGCCCCGGGCGCATGAAGCAGAGCTGCATCATGCGGCAGTGATCGCGCCAGTGCTG
CCCCACACCGCGTGTGCCTTGTGTGTGGCGAGGCGGGGAAGGAAGACACGGTGAAGAGGAGGAAGGCAAGTTTAACT
CATGCTCATGGAGTGCTCCATCTGCAATGAAATCATCCACCCTGGATGCCTTAAGATTAAGGAGTCAGAGGGTGTGGTCA
ACGACGAGCTTCCAAACTGCTGGGAGTGTCGGAAGTGTAAACCACGCCGGAAGACCGGGAAACAAAAGCGTGGCCCTGGC
TTTAAGTACGCCTCAACCTGCCCCGCTCCCTGCTCAAGGAGCAGAAGATGAACCGGGACAACAAGGAAGGGCAGGAACC
TGCCAAGCGGAGGAGTGAGTGTGAGGAGGCGCCCCGGCGCAGGTGCGATGAGCACTCGAAGAAGGTGCCGCCGACGGCC
TTCTGCGCAGAAAAGTCTGACGACGTGCACCTGAGGAAGAAGCGGAAATACGAGAAGCCCCAGGAGCTGAGTGGACGCAAG
CGGGCCTCATCGCTTCAAACGTCCCCCGTTCCTCCTCTCACCTCTCGCCGAGGCCCCCTCTAGGCAGCAGCCTCAGCCC
CTGGTGGAGATCCAGTCTCACTTACTTCCAGCAGCAGCTCAAACCTGGCAAAGAAGATAAGCTTTTCAGGAAAAAGCGGC
GGTCTTGAAGAACGCCGAGGACCGCATGGCGTGGCCAACAAGCCCCCTCCGCGCTTCAAGCAGGAACCCGAGGACGAA
CTGCCCGAGGCGCCCCCAAGACCAGGAGAGCGACCACTCCCGTCCAGTCCCCACCGCGGGACCCAGCACCAGGAAGG
GGCCGAGGGCCCGGAGGAGAAGAAGAAGGTGAAGATGCGCCGGAAGCGCGGCTTCCCAACAAGGAGCTGAGCAGGGAGC
TGAGCAAGGAGCTCAACCACGAGATCCAGAGGACGGAACAGCCTGGCCAACGAGAACCAGCAGCCCATCAAGTCGGAG
CCTGAGAGCGAGGGCGAGGAGCCCAAGCGCCCCCGGCATCTGCGAGCGTCCCCACCGCTTCAAGCAAGGGCTCAACGG
CACCCCCCGGAGCTGCGGCACCAGCTGGGGCCAGCCTGCGCAGCCCCGCCCCGTGTCTCTCCCGCCCCCACCTCCG
TGTCCCCGCCAAGTGTATCCAGATGGAGCGCATGTGATCCGGCCACCCCCATCAGCCCCCGCCTGACTCGCTACCC
CTGGACGATGGGCGAGCCACGTATGCACAGGAGGTGTGGATGGCGTCTTCAGTACCTCAGCCACCAAGACCTGTG
TGTGTGCATGCGGGTCTGCAGGACCTGGAACCGTGGTGTGCGATAAGCGGTTGTGGACCCGATTGACCTGAACCACT
GCAAGTCTATCACACCCTGATGCTGAGTGGCATCATCCGGCGACAGCCCGTCTCCCTCGACCTCAGCTGGACCAATATC
TCCAAGAAGCAGCTGAGCTGGCTCATCAACCGGCTGCCTGGGCTCCGGGACTTGGTGCTGTCAGGCTGCTCATGGATCGC
GGTCTCGGCCCTTTGAGCTCCAGTTGTCCGTGCTCCGACCCCTGGATGTCCAGTGGGTGGAGGGACTAAAGGATGCCC
AGATGCGGGATCTCCTGTCCCCGCCACAGACAACAGGCCAGGTGAGTGGACAATCGGAGCAAGCTCCGGAACATCGTG
GAGCTGCGCCTGGCAGGCCTGGACATCACAGATGCCTCCCTGCGGCTCATCATCCGCCACATGCCCCGTCTCTCAAGCT
CCACCTCAGTTACTGTAACCACGTACCGACCACTATCAACCTGCTCACTGCTGTTGGCACCACCACCCGAGACTCCT
TAACCGAGATCAACCTGTCTGACTGCAATAAGGTCACTGATCAGTGCCTGTCTTCTTCAAACGCTGTGGAAACATCTGT
CATATTGACCTGAGGTACTGCAAGCAAGTCACCAAGGAAGGCTGTGAGCAGTTCATAGCCGAGATGTCTGTGAGTGTCCA
GTTTGGGCAAGTAGAAGAAAACTCCTGCAAAAACTGAGTTAGTCCAAGGATAAGTATGTAAATACGGGGCGGGCTCTGG
GAGGGGAGAGACTTTACAAAAATGAGGGCTTTTATTTTCCATTTGGAACGTGGGACAACAGACCACAACGCAATTCCATT
TTGCAAGTCTTTCCAAGGGAGAAGCTGTTCAACCACCCGTTTGGGGGATGAGTGAGCCGACACTTTCTTTTGGTCTTTCT
GAATCGTAACTGCACTGCTTTCTGGACCATTTCTAAGGCGGCCTTTACAAGAAGACATTCCTGTGCGAGAGGAGGGTGGA
CTTCGGAGAAATTCTCATACTGAAGCATGAGCTTAGGAGTTTCTGTTAGTGGTAGTGGTGTGTTTGGACACTTCATTCCCT
GCAACACCGAGGTTTGGGTGTTGACATAAAGTGGACCACACACCACATCTGCTGCCGTCTTGACACTTTTTTTTGTGTTG
GTTGGTTTTGTTACATCTTACATTATGCAGAACTATTTTTGTACAAATTGTTTAAAAAGTTATTTATGCAAGTTTTGAATG
CATACCAGTGTTTTTATTGTTTTGAGATTGCCAATTTTCTGATTTCTTAAGGTAGGAGAGAATTTAACGTGTACTTCA
TCGACACAACCCATCTACAAATGTGCCAGATCTAACAAGTAGGCTAAGACCTTCCACTTAAAGCATGTTTAACTGGA
AGTTGAGAGTCTGCTTTGTACCTCAAGAGTTACATGAGCATGTTGTGGATAAATGTAAATTATAGTCAAAGTAAGATACT
CTGCCAAGTTTCTCTGTAGAGAATTCATTTTCTCAAATTTTAAAAATTCGACTTCAGCCTTTGCACTCAGGAGGTTCT
GCTCCAGCATGAGCTCTTGTACTTACATAGATCTAATTTATACAGTGAGTCAAGACGTAGAATAAATGCTCCCACATAGC
CTTTCTTTTGTCTTTGCTTCTCTCCTCTGAAGTGTGAGTTGAGTTCTCATTTAGGTTTGTAAACATGGCTATTTCTAGTT
GTAAAGTTCTGCATTTATAAGTGCCATTGTTGTAAAGGTGGTGTTCCTAGACCTTCCCTGATGCGATTTTACCTTTGTG
AATTTGTATAAACAATTGTACAAAAAAACCACTCTTGAACCTTTGAGGGTTTCTGTTCTAGGAGTGGACTAGAAGTTTAA
GCCAGAGTCAGTAAACACTGTTTTGAAGTCCAAA

[Knockdown of B7-H4/VTCN1 promotes apoptosis and autophagy of Huh7 cells by inhibiting phosphorylation of JNK]

Xi Bao Yu Fen Zi Mian Yi Xue Za Zhi 36 (7), 603-608 (2020)

GTGAGTCACCAAGGAAGGCAGCGGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
GTATTTTCAGGGAGACACTCCATCACAGTCACTACTGTGCCTCAGCTGGGAACATTGGGGAGGATGGAATCCTGAGCTGC
ACTTTTGAACCTGACATCAAACCTTTCTGATATCGTGATACAATGGCTGAAGGAAGGTGTTTTAGGCTTGGTCCATGAGTT
CAAAGAAGGCAAAGATGAGCTGTGCGAGCAGGATGAAATGTTTCAGAGGCCGGACAGCAGTGTTTGCTGATCAAGTGATAG
TTGGCAATGCCTCTTTGCGGCTGAAAAACGTGCAACTCACAGATGCTGGCACCTACAAATGTTATATCATCACTTCTAAA
GGCAAGGGGAATGCTAACCTTGAGTATAAACTGGAGCCTTCAGCATGCCGGAAGTGAATGTGGACTATAATGCCAGCTC
AGAGACCTTGCGGTGTGAGGCTCCCCGATGGTTCCCCCAGCCACAGTGGTCTGGGCATCCCAAGTTGACCAGGGAGCCA
ACTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGAATGTGACCATGAAGGTTGTGTCTGTGCTCTACAAT
GTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATTGCCAAAGCAACAGGGGATATCAAAGTGACAGAAATC
GGAGATCAAAAGCGGAGTCACCTACAGCTGCTAACTCAAAGGCTTCTCTGTGTGTCTCTTCTTTTCCCATCAGCT
GGGCACTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTGCCTCGGCCACAAAAAGCATGCAAAGTCATTGTTA
CAACAGGGATCTACAGAATATTTACCACCAGATATGACCTAGTTTTATATTTCTGGGAGGAAATGAATTCATATCTAG
AAGTCTGGAGTGAGCAAAACAAGAGCAAGAAACAAAAAGAAGCCAAAAGCAGAAGGCTCCAATATGAACAAGATAAAATCTA
TCTTCAAAGACATATTAGAAGTTGGGAAAATAATTCATGTGAACTAGACAAGTGTGTTAAGAGTGATAAGTAAATGCAC
GTGGAGACAAGTGCATCCCCAGATCTCAGGGACCTCCCCCTGCCTGTACCTGGGGAGTGAGAGGACAGGATAGTGCATG
TTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTCTGAGGAAGCCCCTGGAAAGTCTATCCCAACATATC
CACATCTTATATTCACAAAATTAAGCTGTAGTATGTACCCTAAGACGCTGCTAATTGACTGCCACTTCGCAACTCAGGGG
CGGCTGCATTTTAGTAATGGGTCAAATGATTCACCTTTTTATGATGCTTCCAAAGTGCCTTGGCTTCTCTTCCCAACTGA
CAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACAGAGCAGTCGGCGACACCGATTTTATAAATAAACTG
AGCACCTTCTTTTTAAACAAACAAATGCGGGTTTATTTCTCAGATGATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTT
TCACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGAGACAGCTAAGACCTCA
GTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTTCGCCCCCATCTCCGGGGGAATGTCTGAAGACAAT
TTTGTTTACCTCAATGAGGGAGTGGAGGAGGATACAGTGCTACTACCAACTAGTGGATAGAGGCCAGGGATGCTGCTCAA
CCTCCTACCATGTACAGGACGTCTCCCCATTAGAACTACCCAATCCGAAGTGTCAACTGTGTGTCAGGGCTAAGAAACCCCTG
GTTTTGAGTAGAAAAGGGCCTGGAAAGAGGGGAGCCAAACAATCTGTCTGCTTCTCACATTAGTCATTGGCAAATAAGC
ATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTCTATCGGGCACCAGGATAACATCTCTCAGTGAACAG
AGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGCTTGTGAGCTTCTAAGTTTCTTTCCCTTCATTCTA
CCCTGCAAGCCAAGTTCTGTAAAGAGAAATGCCTGAGTTCTAGCTCAGGTTTTCTTACTCTGAATTTAGATCTCCAGACCC
TGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCATGAAGCACACACAGACTTTTGAAAGCAAGGACAAT
GACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAAGAATACTTTGTTTCCAGCCCCCTTCCCACACTCTT
CATGTGTTAACCCTGCCTTCTGACCTTGGAGCCACGGTGACTGTATTACATGTTGTTATAGAAAAGTGAATTTTAGAG
TTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTACACCA

B7-H4 is a potential prognostic biomarker of prostate cancer

Exp Mol Pathol 114, 104406 (2020)

GTGAGTCACCAAGGAAGGCAGCGGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
GTATTTTCAGGGAGACACTCCATCACAGTCACTACTGTGCCTCAGCTGGGAACATTGGGGAGGATGGAATCCTGAGCTGC
ACTTTTGAACCTGACATCAAACCTTTCTGATATCGTGATACAATGGCTGAAGGAAGGTGTTTTAGGCTTGGTCCATGAGTT
CAAAGAAGGCAAAGATGAGCTGTGCGAGCAGGATGAAATGTTTCAGAGGCCGGACAGCAGTGTTTGCTGATCAAGTGATAG
TTGGCAATGCCTCTTTGCGGCTGAAAAACGTGCAACTCACAGATGCTGGCACCTACAAATGTTATATCATCACTTCTAAA
GGCAAGGGGAATGCTAACCTTGAGTATAAACTGGAGCCTTCAGCATGCCGGAAGTGAATGTGGACTATAATGCCAGCTC
AGAGACCTTGCGGTGTGAGGCTCCCCGATGGTTCCCCCAGCCACAGTGGTCTGGGCATCCCAAGTTGACCAGGGAGCCA

ACTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGAATGTGACCATGAAGGTTGTGTCTGTGCTCTACAAT
 GTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATTGCCAAAGCAACAGGGGATATCAAAGTGACAGAATC
 GGAGATCAAAAAGGCGGAGTCACCTACAGCTGCTAAACTCAAAGGCTTCTCTGTGTGTCTCTTCTTTCTTTGCCATCAGCT
 GGGCACTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTGCCTCGGCCACAAAAAAGCATGCAAAGTCATTGTTA
 CAACAGGGATCTACAGAACTATTTACCACCAGATATGACCTAGTTTTATATTTCTGGGAGGAAATGAATTCATATCTAG
 AAGTCTGGAGTGAGCAACAAGAGCAAGAAACAAAAAGAAGCCAAAAGCAGAAGGCTCCAATATGAACAAGATAAACTTA
 TCTTCAAAGACATATTAGAAGTTGGGAAAATAATTCATGTGAACTAGACAAGTGTGTTAAGAGTGATAAGTAAATGCAC
 GTGGAGACAAGTGCATCCCCAGATCTCAGGGACCTCCCCCTGCCTGTACCTGGGGAGTGAGAGGACAGGATAGTGCATG
 TTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTCTGAGGAAGCCCTGGAAAGTCTATCCCAACATATC
 CACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGACGCTGCTAATTGACTGCCACTTCGCAACTCAGGGG
 CGGCTGCATTTTAGTAATGGGTCAAATGATTCACTTTTTATGATGCTTCCAAAGTGCTTGGCTTCTCTTCCCAACTGA
 CAAATGCCAAAGTTGAGAAAAATGATCATAATTTAGCATAAACAGAGCAGTCGGCGACACCGATTTTATAAATAAACTG
 AGCACCTTCTTTTTAAACAAACAAATGCGGGTTATTTCTCAGATGATGTTTATCCGTGAATGGTCCAGGGAAGGACCTT
 TCACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGGACAGCTAAGACCTCA
 GTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTTTCGCCCCCATCTCCGGGGGAATGTCTGAAGACAAT
 TTTGGTTACCTCAATGAGGGAGTGGAGGAGGATACAGTGCTACTACCAACTAGTGGATAGAGGCCAGGGATGCTGCTCAA
 CCTCCTACCATGTACAGGACGTCTCCCCATTACAACTACCCAATCCGAAGTGTCAACTGTGTGTCAGGGCTAAGAAACCTG
 GTTTTGAGTAGAAAAGGGCCTGGAAAGAGGGGAGCCAACAAATCTGTCTGCTTCCCTCACATTAGTCATTGGCAAATAAGC
 ATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAATCTATCGGGCACCAGGATAACATCTCTCAGTGAACAG
 AGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGCTTGTGAGCTTCTAAGTTTCTTTCCCTTCATTCTA
 CCCTGCAAGCCAAGTTCTGTAAAGAGAAATGCCTGAGTTCTAGCTCAGGTTTTCTTACTCTGAATTTAGATCTCCAGACCC
 TGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCATGAAGCACACACAGACTTTTGAAAGCAAGGACAAT
 GACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAAGAATACTTTGTTTCCAGCCCCCTTCCCACTCTT
 CATGTGTTAACCACTGCCTTCTGACCTTGGAGCCACGGTGACTGTATTACATGTTGTTATAGAAAAGTGAATTTAGAG
 TTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTACACCA

B7H4 expression in tumor cells impairs CD8 T cell responses and tumor immunity
 Cancer Immunol Immunother 69 (2), 163-174 (2020)

GTGAGTCACCAAGGAAGGCAGCGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
 CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
 GTATTTTCAGGGAGACACTCCATCACAGTCACTACTGTGCCTCAGCTGGGAACATTGGGGAGGATGGAATCCTGAGCTGC
 ACTTTTGAACCTGACATCAAACCTTTCTGATATCGTGATACAATGGCTGAAGGAAGGTGTTTTAGGCTTGGTCCATGAGTT
 CAAAGAAGGCAAAGATGAGCTGTGCGAGCAGGATGAAATGTTGAGAGGCCGACAGCAGTGTGTTGCTGATCAAGTGATAG
 TTGGCAATGCCTCTTTGCGGCTGAAAAACGTGCAACTCACAGATGCTGGCACCTACAAATGTTATATCATCACTTCTAAA
 GGCAAGGGGAATGCTAACCTTGAGTATAAACTGGAGCCTTCAGCATGCCGGAAGTGAATGTGGACTATAATGCCAGCTC
 AGAGACCTTGGCGTGTGAGGCTCCCCGATGGTTCCCCCAGCCACAGTGGTCTGGGCATCCCAAGTTGACCAGGGAGCCA
 ACTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGAATGTGACCATGAAGGTTGTGTCTGTGCTCTACAAT
 GTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATTGCCAAAGCAACAGGGGATATCAAAGTGACAGAATC
 GGAGATCAAAAAGGCGGAGTCACCTACAGCTGCTAAACTCAAAGGCTTCTCTGTGTGTCTCTTCTTTCTTTGCCATCAGCT
 GGGCACTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTGCCTCGGCCACAAAAAAGCATGCAAAGTCATTGTTA
 CAACAGGGATCTACAGAACTATTTACCACCAGATATGACCTAGTTTTATATTTCTGGGAGGAAATGAATTCATATCTAG
 AAGTCTGGAGTGAGCAACAAGAGCAAGAAACAAAAAGAAGCCAAAAGCAGAAGGCTCCAATATGAACAAGATAAACTTA
 TCTTCAAAGACATATTAGAAGTTGGGAAAATAATTCATGTGAACTAGACAAGTGTGTTAAGAGTGATAAGTAAATGCAC
 GTGGAGACAAGTGCATCCCCAGATCTCAGGGACCTCCCCCTGCCTGTACCTGGGGAGTGAGAGGACAGGATAGTGCATG
 TTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTCTGAGGAAGCCCTGGAAAGTCTATCCCAACATATC
 CACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGACGCTGCTAATTGACTGCCACTTCGCAACTCAGGGG
 CGGCTGCATTTTAGTAATGGGTCAAATGATTCACTTTTTATGATGCTTCCAAAGTGCTTGGCTTCTCTTCCCAACTGA
 CAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACAGAGCAGTCGGCGACACCGATTTTATAAATAAACTG

AGCACCTTCTTTTTAAACAAACAAATGCGGGTTTATTTCTCAGATGATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTT
TCACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGGACAGCTAAGACCTCA
GTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTTGCCCCCATCTCCGGGGGAATGTCTGAAGACAAT
TTTGTTTACCTCAATGAGGGAGTGGAGGAGGATACAGTGCTACTACCAACTAGTGGATAGAGGCCAGGGATGCTGCTCAA
CCTCCTACCATGTACAGGACGTCTCCCCATTACAACACCAATCCGAAGTGCAACTGTGTGTCAGGGCTAAGAAACCCTG
GTTTTGAGTAGAAAAGGGCCTGGAAAGAGGGGAGCCAACAAATCTGTCTGCTTCCCTCACATTAGTCATTGGCAAATAAGC
ATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTCTATCGGGCACCAGGATAACATCTCTCAGTGAACAG
AGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGCTTGTGAGCTTCTAAGTTTCTTTCCCTTCATTCTA
CCCTGCAAGCCAAGTTCTGTAAAGAGAAATGCCTGAGTTCTAGCTCAGGTTTTCTTACTCTGAATTTAGATCTCCAGACCC
TGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCATGAAGCACACACAGACTTTTGAAAGCAAGGACAAT
GACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAAGAATACTTTGTTCCAGCCCCCTTCCCACACTCTT
CATGTGTTAACCCTGCCTTCCCTGGACCTTGGAGCCACGGTGACTGTATTACATGTTGTTATAGAAAAGTATTTTAGAG
TTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTACACCA

B7-H4, a promising target for immunotherapy

Cell Immunol 347, 104008 (2020)

GTGAGTCACCAAGGAAGGCAGCGGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
GTATTTTCAGGGAGACACTCCATCACAGTCACTACTGTGCCTCAGCTGGGAACATTGGGGAGGATGGAATCCTGAGCTGC
ACTTTTGAACCTGACATCAAACCTTTCTGATATCGTGATACAATGGCTGAAGGAAGGTGTTTTAGGCTTGGTCCATGAGTT
CAAAGAAGGCAAGATGAGCTGTGCGAGCAGGATGAAATGTTGAGAGGCCGGACAGCAGTGTTTGCTGATCAAGTGATAG
TTGGCAATGCCTCTTTGCGGCTGAAAAACGTGCAACTCACAGATGCTGGCACCTACAAATGTTATATCATCACTTCTAAA
GGCAAGGGGAATGCTAACCTTGAGTATAAACTGGAGCCTTCAGCATGCCGGAAGTGAATGTGGACTATAATGCCAGCTC
AGAGACCTTGGCGTGTGAGGCTCCCCGATGGTTCCCCCAGCCACAGTGGTCTGGGCATCCCAAGTTGACCAGGGAGCCA
ACTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGAATGTGACCATGAAGGTTGTGTCTGTGCTCTACAAT
GTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATTGCCAAAGCAACAGGGGATATCAAAGTGACAGAATC
GGAGATCAAAAGGCGGAGTCACCTACAGCTGCTAAACTCAAAGGCTTCTCTGTGTGTCTCTTCTTTCTTTGCCATCAGCT
GGGCACTTCTGCCTCTCAGCCCTTACCTGATGCTAAAAATAATGTGCCTCGGCCACAAAAAGCATGCAAAGTCATTGTTA
CAACAGGGATCTACAGAACTATTTACCACCAGATATGACCTAGTTTTATATTTCTGGGAGGAAATGAATTCATATCTAG
AAGTCTGGAGTGAGCAAAACAAGAGCAAGAAACAAAAAGAAGCCAAAAGCAGAAGGCTCCAATATGAACAAGATAAATCTA
TCTTCAAAGACATATTAGAAGTTGGGAAAATAATTCATGTGAACTAGACAAGTGTGTTAAGAGTGATAAGTAAAATGCAC
GTGGAGACAAGTGCATCCCCAGATCTCAGGGACCTCCCCCTGCCTGTACCTGGGGAGTGAGAGGACAGGATAGTGCATG
TTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTCTGAGGAAGCCCTGGAAAAGTCTATCCCAACATATC
CACATCTTATATCCACAAATTAAGCTGTAGTATGTACCCTAAGACGCTGCTAATTGACTGCCACTTCGCAACTCAGGGG
CGGCTGCATTTTAGTAATGGGTCAAATGATTCATTTTTATGATGCTTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGA
CAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACAGAGCAGTCGGCGACACCGATTTTATAAATAAACTG
AGCACCTTCTTTTTAAACAAACAAATGCGGGTTTATTTCTCAGATGATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTT
TCACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGGACAGCTAAGACCTCA
GTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTTGCCCCCATCTCCGGGGGAATGTCTGAAGACAAT
TTTGTTTACCTCAATGAGGGAGTGGAGGAGGATACAGTGCTACTACCAACTAGTGGATAGAGGCCAGGGATGCTGCTCAA
CCTCCTACCATGTACAGGACGTCTCCCCATTACAACACCAATCCGAAGTGCAACTGTGTGTCAGGGCTAAGAAACCCTG
GTTTTGAGTAGAAAAGGGCCTGGAAAGAGGGGAGCCAACAAATCTGTCTGCTTCCCTCACATTAGTCATTGGCAAATAAGC
ATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTCTATCGGGCACCAGGATAACATCTCTCAGTGAACAG
AGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGCTTGTGAGCTTCTAAGTTTCTTTCCCTTCATTCTA
CCCTGCAAGCCAAGTTCTGTAAAGAGAAATGCCTGAGTTCTAGCTCAGGTTTTCTTACTCTGAATTTAGATCTCCAGACCC
TGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCATGAAGCACACACAGACTTTTGAAAGCAAGGACAAT
GACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAAGAATACTTTGTTTCCAGCCCCCTTCCCACACTCTT
CATGTGTTAACCCTGCCTTCCCTGGACCTTGGAGCCACGGTGACTGTATTACATGTTGTTATAGAAAAGTATTTTAGAG

TTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTACACCA

Expression of co-inhibitory molecules B7-H4 and B7-H1 in Epstein-Barr virus positive diffuse large B-cell lymphoma and their roles in tumor invasion
Pathol Res Pract 215 (12), 152684 (2019)

GTGAGTCACCAAGGAAGGCAGCGGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
GTATTTTCAGGGAGACACTCCATCACAGTCACTACTGTGCGCTCAGCTGGGAACATTGGGGAGGATGGAATCCTGAGCTGC
ACTTTTGAACCTGACATCAAACCTTTCTGATATCGTGATACAATGGCTGAAGGAAGGTGTTTTAGGCTTGGTCCATGAGTT
CAAAGAAGGCAAAGATGAGCTGTGCGAGCAGGATGAAATGTTTCAGAGGCCGGACAGCAGTGTGTTGCTGATCAAGTGATAG
TTGGCAATGCCTCTTTGCGGCTGAAAAACGTGCAACTCACAGATGCTGGCACCTACAAATGTTATATCATCACTTCTAAA
GGCAAGGGGAATGCTAACCTTGAGTATAAACTGGAGCCTTCAGCATGCCGGAAGTGAATGTGGACTATAATGCCAGCTC
AGAGACCTTGCGGTGTGAGGCTCCCCGATGGTTCCTCCAGCCACAGTGGTCTGGGCATCCCAAGTTGACCAGGGAGCCA
ACTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGAATGTGACCATGAAGGTTGTGTCTGTGCTCTACAAT
GTTACGATCAACAACATACTCCTGTATGATTGAAAATGACATTGCCAAAGCAACAGGGGATATCAAAGTGACAGAATC
GGAGATCAAAGGCGGAGTCACCTACAGCTGCTAAACTCAAAGGCTTCTCTGTGTGTCTCTTTCTTTGCCATCAGCT
GGGCACTTCTGCTCTCAGCCCTTACCTGATGCTAAAATAATGTGCTCGGCCACAAAAAGCATGCAAAGTCATTGTTA
CAACAGGGATCTACAGAACTATTTACCACCAGATATGACCTAGTTTTATATTTCTGGGAGGAAATGAATTCATATCTAG
AAGTCTGGAGTGAGCAAAACAAGAGCAAGAAACAAAAAGAAGCCAAAAGCAGAAGGCTCCAATATGAACAAGATAAACTA
TCTTCAAAGACATATTAGAAGTTGGGAAAATAATTCATGTGAAGTAGACAAGTGTGTTAAGAGTGATAAGTAAATGCAC
GTGGAGACAAGTGCATCCCCAGATCTCAGGGACCTCCCCCTGCCTGTACCTGGGGAGTGAGAGGACAGGATAGTGCATG
TTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTCTGAGGAAGCCCTGGAAAGTCTATCCCAACATATC
CACATCTTATATTCACAAATTAAGCTGTAGTATGTACCCTAAGACGCTGCTAATTGACTGCCACTTCGCAACTCAGGGG
CGGCTGCATTTTAGTAATGGGTCAAATGATCACTTTTTATGATGCTTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGA
CAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACAGAGCAGTCGGCGACACCGATTTTATAAATAAACTG
AGCACCTTCTTTTAAACAAACAAATGCGGGTTATTTCTCAGATGATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTT
TCACCTTGTCTATATGGCATTATGTCATCACAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGGACAGCTAAGACCTCA
GTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTTCCGCCCCCATCTCCGGGGGAATGTCTGAAGACAAT
TTTGTTACCTCAATGAGGGAGTGGAGGAGGATACAGTGCTACTACCAACTAGTGGATAGAGGCCAGGGATGCTGCTCAA
CCTCCTACCATGTACAGGACGTCTCCCCATTACAACTACCCAATCCGAAGTGTCAACTGTGTGTCAGGGCTAAGAAACCTG
GTTTTGAGTAGAAAAGGGCCTGGAAAGAGGGGAGCCAAACAAATCTGTCTGCTTCTCATTAGTCATTGGCAAATAAGC
ATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTCTATCGGGCACCAGGATAACATCTCTCAGTGAACAG
AGTTGACAAGGCCATGGGAAATGCCTGATGGGATTATCTTCAGCTTGTGAGCTTCTAAGTTTCTTTCCCTTCATTCTA
CCCTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTCAGGTTTTCTACTCTGAATTTAGATCTCCAGACCC
TGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCATGAAGCACACAGACTTTTGAAAGCAAGGACAAT
GACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAAGAATACTTTGTTTCCAGCCCCCTTCCCACTCTT
CATGTGTTAACCACTGCCTTCTGACCTTGAGCCACGGTGACTGTATTACATGTTGTTATAGAAAAGTATTTTAGAG
TTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTACACCA

The secreted protein discovery initiative (SPDI), a large-scale effort to identify novel human secreted and transmembrane proteins: a bioinformatics assessment

Genome Res 13 (10), 2265-2270 (2003)

GTGAGTCACCAAGGAAGGCAGCGGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
GTATTTTCAGGGAGACACTCCATCACAGTCACTACTGTGCGCTCAGCTGGGAACATTGGGGAGGATGGAATCCTGAGCTGC
ACTTTTGAACCTGACATCAAACCTTTCTGATATCGTGATACAATGGCTGAAGGAAGGTGTTTTAGGCTTGGTCCATGAGTT
CAAAGAAGGCAAAGATGAGCTGTGCGAGCAGGATGAAATGTTTCAGAGGCCGGACAGCAGTGTGTTGCTGATCAAGTGATAG

TTGGCAATGCCTCTTTGCGGCTGAAAAACGTGCAACTCACAGATGCTGGCACCTACAAATGTTATATCATCACTTCTAAA
GGCAAGGGGAATGCTAACCTTGAGTATAAACTGGAGCCTTCAGCATGCCGGAAGTGAATGTGGACTATAATGCCAGCTC
AGAGACCTTGCGGTGTGAGGCTCCCCGATGGTTCCCCAGCCACAGTGGTCTGGGCATCCCAAGTTGACCAGGGAGCCA
ACTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGAATGTGACCATGAAGGTTGTGTCTGTGCTCTACAAT
GTTACGATCAACAACACATACTCCTGTATGATTGAAAAATGACATTGCCAAAGCAACAGGGGATATCAAAGTGACAGAATC
GGAGATCAAAAGGCGGAGTCACCTACAGCTGCTAAACTCAAAGGCTTCTCTGTGTGTCTCTTTCTTTGCCATCAGCT
GGGCACTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTGCCTCGGCCACAAAAAGCATGCAAAGTCATTGTTA
CAACAGGGATCTACAGAACTATTTACCACCAGATATGACCTAGTTTTATATTTCTGGGAGGAAATGAATTCATATCTAG
AAGTCTGGAGTGAGCAAAACAAGAGCAAGAAACAAAAAGAAGCCAAAAGCAGAAGGCTCCAATATGAACAAGATAAATCTA
TCTTCAAAGACATATTAGAAGTTGGGAAAATAATTCATGTGAACTAGACAAGTGTGTTAAGAGTGATAAGTAAATGCAC
GTGGAGACAAGTGACATCCCCAGATCTCAGGGACCTCCCCCTGCCTGTACCTGGGGAGTGAGAGGACAGGATAGTGCATG
TTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTCTGAGGAAGCCCTGGAAAGTCTATCCCAACATATC
CACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGACGCTGCTAATTGACTGCCACTTCGCAACTCAGGGG
CGGCTGCATTTTAGTAATGGGTCAAATGATTCACTTTTTATGATGCTTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGA
CAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACAGAGCAGTCGGCGACACCGATTTTATAAATAAACTG
AGCACCTTCTTTTTAAACAAACAAATGCGGGTTATTTCTCAGATGATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTT
TCACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGGACAGCTAAGACCTCA
GTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTTGCCCCCATCTCCGGGGGAATGTCTGAAGACAAT
TTTGTTTACCTCAATGAGGGAGTGGAGGAGGATACAGTGCTACTACCAACTAGTGATAGAGGCCAGGGATGCTGCTCAA
CCTCCTACCATGTACAGGACGTCTCCCCATTACAACTACCCAATCCGAAGTGCAACTGTGTGTCAGGGCTAAGAAACCTG
GTTTTGAGTAGAAAAGGGCCTGGAAAGAGGGGAGCCAACAAATCTGTCTGCTTCCCTCACATTAGTCATTGGCAAATAAGC
ATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTCTATCGGGCACCAGGATAACATCTCTCAGTGAACAG
AGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGCTTGTGAGCTTCTAAGTTTCTTTCCCTTCATTCTA
CCCTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTCAGGTTTTCTTACTCTGAATTTAGATCTCCAGACCC
TGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCATGAAGCACACACAGACTTTTGAAAGCAAGGACAAT
GACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAAGAATACTTTGTTTCCAGCCCCCTTCCACACTCTT
CATGTGTTAACCCTGCCTTCCCTGGACCTTGGAGCCACGGTGACTGTATTACATGTTGTTATAGAAAAGTATTTTAGAG
TTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTACACCA

B7x: a widely expressed B7 family member that inhibits T cell activation

Proc Natl Acad Sci U S A 100 (18), 10388-10392 (2003)

GTGAGTCACCAAGGAAGGCAGCGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
GTATTTTCAAGGAGACACTCCATCACAGTCACTACTGTGCCTCAGCTGGGAACATTGGGGAGGATGGAATCCTGAGCTGC
ACTTTTGAACCTGACATCAAACCTTTCTGATATCGTGATACAATGGCTGAAGGAAGGTGTTTTAGGCTTGGTCCATGAGTT
CAAAGAAGGCAAGATGAGCTGTGCGAGCAGGATGAAATGTTGAGAGCCGGACAGCAGTGTTTGCTGATCAAGTGATAG
TTGGCAATGCCTCTTTGCGGCTGAAAAACGTGCAACTCACAGATGCTGGCACCTACAAATGTTATATCATCACTTCTAAA
GGCAAGGGGAATGCTAACCTTGAGTATAAACTGGAGCCTTCAGCATGCCGGAAGTGAATGTGGACTATAATGCCAGCTC
AGAGACCTTGCGGTGTGAGGCTCCCCGATGGTTCCCCAGCCACAGTGGTCTGGGCATCCCAAGTTGACCAGGGAGCCA
ACTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGAATGTGACCATGAAGGTTGTGTCTGTGCTCTACAAT
GTTACGATCAACAACACATACTCCTGTATGATTGAAAAATGACATTGCCAAAGCAACAGGGGATATCAAAGTGACAGAATC
GGAGATCAAAAGGCGGAGTCACCTACAGCTGCTAAACTCAAAGGCTTCTCTGTGTGTCTCTTTCTTTGCCATCAGCT
GGGCACTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTGCCTCGGCCACAAAAAGCATGCAAAGTCATTGTTA
CAACAGGGATCTACAGAACTATTTACCACCAGATATGACCTAGTTTTATATTTCTGGGAGGAAATGAATTCATATCTAG
AAGTCTGGAGTGAGCAAAACAAGAGCAAGAAACAAAAAGAAGCCAAAAGCAGAAGGCTCCAATATGAACAAGATAAATCTA
TCTTCAAAGACATATTAGAAGTTGGGAAAATAATTCATGTGAACTAGACAAGTGTGTTAAGAGTGATAAGTAAATGCAC
GTGGAGACAAGTGACATCCCCAGATCTCAGGGACCTCCCCCTGCCTGTACCTGGGGAGTGAGAGGACAGGATAGTGCATG
TTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTCTGAGGAAGCCCTGGAAAGTCTATCCCAACATATC

CACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGACGCTGCTAATTGACTGCCACTTCGCAACTCAGGGG
CGGCTGCATTTTAGTAATGGGTCAAATGATTCACCTTTTTATGATGCTTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGA
CAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACAGAGCAGTCGGCGACACCGATTTTATAAATAAACTG
AGCACCTTCTTTTTAAACAAACAAATGCGGGTTTATTTCTCAGATGATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTT
TCACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGGACAGCTAAGACCTCA
GTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTTTCGCCCCCATCTCCGGGGGAATGTCTGAAGACAAT
TTTGTTTACCTCAATGAGGGAGTGGAGGAGGATACAGTGCTACTACCAACTAGTGGATAGAGGCCAGGGATGCTGCTCAA
CCTCCTACCATGTACAGGACGTCTCCCCATTACAACCTACCCAATCCGAAGTGTCAACTGTGTCAGGGCTAAGAAACCTG
GTTTTGAGTAGAAAAGGGCCTGGAAAGAGGGGAGCCAACAAATCTGTCTGCTTCCCTCACATTAGTCATTGGCAAATAAGC
ATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTCTATCGGGCACCAGGATAACATCTCTCAGTGAACAG
AGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGCTTGTGAGCTTCTAAGTTTCTTTCCCTTCATTCTA
CCCTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTCAGGTTTTCTTACTCTGAATTTAGATCTCCAGACCC
TGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCATGAAGCACACAGACTTTTGAAAGCAAGGACAAT
GACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAAGAATACTTTGTTTCCAGCCCCCTTCCCACTCTT
CATGTGTTAACTACTGCCTTCTGACCTTGGAGCCACGGTGACTGTATTACATGTTGTTATAGAAAAGTATTTTAGAG
TTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTACACCA

BTLA is a lymphocyte inhibitory receptor with similarities to CTLA-4 and PD-1
Nat Immunol 4 (7), 670-679 (2003)

GTGAGTCACCAAGGAAGGCAGCGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
GTATTTTCAAGGAGACACTCCATCACAGTCACTACTGTGCGCTCAGCTGGGAACATTGGGGAGGATGGAATCCTGAGCTGC
ACTTTTGAACCTGACATCAAACCTTTCTGATATCGTGATAACAATGGCTGAAGGAAGGTGTTTTAGGCTTGGTCCATGAGTT
CAAAGAAGGCAAAGATGAGCTGTGCGAGCAGGATGAAATGTTGAGAGCGCGACAGCAGTGTGCTGATCAAGTGATAG
TTGGCAATGCCTCTTTGCGGCTGAAAAACGTGCAACTCACAGATGCTGGCACCTACAAATGTTATATCATCACTTCTAAA
GGCAAGGGGAATGCTAACCTTGAGTATAAACTGGAGCCTTACAGCATGCCGGAAGTGAATGTGGACTATAATGCCAGCTC
AGAGACCTTGGGTGTGAGGCTCCCCGATGGTTCCCCCAGCCACAGTGGTCTGGGCATCCCAAGTTGACCAGGGAGCCA
ACTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGAATGTGACCATGAAGGTTGTGTCTGTGCTCTACAAT
GTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATTGCCAAAGCAACAGGGGATATCAAAGTGACAGAAATC
GGAGATCAAAAGCGGAGTCACCTACAGCTGCTAAACTCAAAGGCTTCTCTGTGTGTCTCTTCTTTTGGCCATCAGCT
GGGCACTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTGCCTCGGCCACAAAAAGCATGCAAAGTCATTGTTA
CAACAGGGATCTACAGAATATTTACCACCAGATATGACCTAGTTTTATATTTCTGGGAGGAAATGAATTCATATCTAG
AAGTCTGGAGTGAGCAAAACAAGAGCAAGAAACAAAAAGAAGCCAAAAGCAGAAGGCTCCAATATGAACAAGATAAATCTA
TCTTCAAAGACATATTAGAAGTTGGGAAAATAATTCATGTGAACTAGACAAGTGTGTTAAGAGTGATAAGTAAATGCAC
GTGGAGACAAGTGATCCCCAGATCTCAGGGACCTCCCCCTGCCTGTACCTGGGGAGTGAGAGGACAGGATAGTGCATG
TTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTCTGAGGAAGCCCCTGGAAAGTCTATCCCAACATATC
CACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGACGCTGCTAATTGACTGCCACTTCGCAACTCAGGGG
CGGCTGCATTTTAGTAATGGGTCAAATGATTCACCTTTTTATGATGCTTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGA
CAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACAGAGCAGTCGGCGACACCGATTTTATAAATAAACTG
AGCACCTTCTTTTTAAACAAACAAATGCGGGTTTATTTCTCAGATGATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTT
TCACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGGACAGCTAAGACCTCA
GTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTTTCGCCCCCATCTCCGGGGGAATGTCTGAAGACAAT
TTTGTTTACCTCAATGAGGGAGTGGAGGAGGATACAGTGCTACTACCAACTAGTGGATAGAGGCCAGGGATGCTGCTCAA
CCTCCTACCATGTACAGGACGTCTCCCCATTACAACCTACCCAATCCGAAGTGTCAACTGTGTCAGGGCTAAGAAACCTG
GTTTTGAGTAGAAAAGGGCCTGGAAAGAGGGGAGCCAACAAATCTGTCTGCTTCCCTCACATTAGTCATTGGCAAATAAGC
ATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTCTATCGGGCACCAGGATAACATCTCTCAGTGAACAG
AGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGCTTGTGAGCTTCTAAGTTTCTTTCCCTTCATTCTA
CCCTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTCAGGTTTTCTTACTCTGAATTTAGATCTCCAGACCC

TGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCATGAAGCACACACAGACTTTTGAAGCAAGGACAAT
GACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAAGAATACTTTGTTTCCAGCCCCCTTCCCACACTCTT
CATGTGTTAAACCACTGCCTTCCTGGACCTTGGAGCCACGGTGACTGTATTACATGTTGTTATAGAAAAGTATTTTAGAG
TTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTACACCA

B7S1, a novel B7 family member that negatively regulates T cell activation
Immunity 18 (6), 863-873 (2003)

GTGAGTCACCAAGGAAGGCAGCGGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTTGGCTTTG
GTATTTTCAGGGAGACACTCCATCACAGTCACTACTGTGCGCTCAGCTGGGAACATTGGGGAGGATGGAATCCTGAGCTGC
ACTTTTGAACCTGACATCAAACCTTTCTGATATCGTGATAACAATGGCTGAAGGAAGGTGTTTTAGGCTTGGTCCATGAGTT
CAAAGAAGGCAAGATGAGCTGTGCGAGCAGGATGAAATGTTTCAGAGGCCGGACAGCAGTGTGCTGATCAAGTGATAG
TTGGCAATGCCCTCTTTGCGGCTGAAAAACGTGCAACTCACAGATGCTGGCACCTACAAATGTTATATCATCACTTCTAAA
GGCAAGGGGAATGCTAACCTTGAGTATAAACTGGAGCCTTCAGCATGCCGGAAGTGAATGTGGACTATAATGCCAGCTC
AGAGACCTTGCGGTGTGAGGCTCCCCGATGGTTCCCCCAGCCACAGTGGTCTGGGCATCCCAAGTTGACCAGGGAGCCA
ACTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGAATGTGACCATGAAGGTTGTGTCTGTGCTCTACAAT
GTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATTGCCAAAGCAACAGGGGATATCAAAGTGACAGAATC
GGAGATCAAAAAGGCGGAGTCACCTACAGCTGCTAACTCAAAGGCTTCTCTGTGTCTCTTTCTTTGCCATCAGCT
GGGCACTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTGCCTCGGCCACAAAAAGCATGCAAAGTCATTGTTA
CAACAGGGATCTACAGAACTATTTACACCAGATATGACCTAGTTTTATATTCTGGGAGGAAATGAATTCATATCTAG
AAGTCTGGAGTGAGCAAAACAAGAGCAAGAAACAAAAAGAAGCCAAAAGCAGAAGGCTCCAATATGAACAAGATAAACTTA
TCTTCAAAGACATATTAGAAGTTGGGAAAATAATTCATGTGAACTAGACAAGTGTGTTAAGAGTGATAAGTAAATGCAC
GTGGAGACAAGTGCATCCCCAGATCTCAGGGACCTCCCCCTGCCTGTACCTGGGGAGTGAGAGGACAGGATAGTGCATG
TTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTCTGAGGAAGCCCTTGAAAGTCTATCCCAACATATC
CACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGACGCTGCTAATTGACTGCCACTTCGCAACTCAGGGG
CGGCTGCATTTTAGTAATGGGTCAAATGATTCACCTTTTTATGATGCTTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGA
CAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACAGAGCAGTCGCGGACACCGATTTTATAAATAAACTG
AGCACCTTCTTTTTAAACAAACAAATGCGGGTTATTTCTCAGATGATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTT
TCACCTTGTCTATATGGCATTATGTCATCACAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGGACAGCTAAGACCTCA
GTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTTTCGCCCCCATCTCCGGGGGAATGTCTGAAGACAAT
TTTGTTTACCTCAATGAGGGAGTGGAGGAGGATACAGTCTACTACCACTAGTGGATAGAGGCCAGGGATGCTGCTCAA
CCTCCTACCATGTACAGGACGTCTCCCCATTACAACACCCAATCCGAAGTGTCAACTGTGTCAGGGCTAAGAAACCCTG
GTTTTGAGTAGAAAAGGGCCTGGAAAGAGGGGAGCCAACAAATCTGTCTGCTTCTCACATTAGTCATTGGCAAATAAGC
ATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAATCTATCGGGCACCAGGATAACATCTCTCAGTGAACAG
AGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGCTTGTGAGCTTCTAAGTTTCTTTCCCTTCATTCTA
CCCTGCAAGCCAAGTTCTGTAAAGAGAAATGCCTGAGTTCTAGCTCAGGTTTTCTTACTCTGAATTTAGATCTCCAGACCC
TGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCATGAAGCACACACAGACTTTTGAAGCAAGGACAAT
GACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAAGAATACTTTGTTTCCAGCCCCCTTCCCACACTCTT
CATGTGTTAAACCACTGCCTTCCTGGACCTTGGAGCCACGGTGACTGTATTACATGTTGTTATAGAAAAGTATTTTAGAG
TTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTACACCA

B7-H4, a molecule of the B7 family, negatively regulates T cell immunity
Immunity 18 (6), 849-861 (2003)

GTGAGTCACCAAGGAAGGCAGCGGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTTGGCTTTG
GTATTTTCAGGGAGACACTCCATCACAGTCACTACTGTGCGCTCAGCTGGGAACATTGGGGAGGATGGAATCCTGAGCTGC
ACTTTTGAACCTGACATCAAACCTTTCTGATATCGTGATAACAATGGCTGAAGGAAGGTGTTTTAGGCTTGGTCCATGAGTT
CAAAGAAGGCAAGATGAGCTGTGCGAGCAGGATGAAATGTTTCAGAGGCCGGACAGCAGTGTGCTGATCAAGTGATAG

TTGGCAATGCCTCTTTGCGGCTGAAAAACGTGCAACTCACAGATGCTGGCACCTACAAATGTTATATCATCACTTCTAAA
GGCAAGGGGAATGCTAACCTTGAGTATAAACTGGAGCCTTCAGCATGCCGGAAGTGAATGTGGACTATAATGCCAGCTC
AGAGACCTTGCGGTGTGAGGCTCCCCGATGGTTCCCCAGCCACAGTGGTCTGGGCATCCCAAGTTGACCAGGGAGCCA
ACTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGAATGTGACCATGAAGGTTGTGTCTGTGCTCTACAAT
GTTACGATCAACAACACATACTCCTGTATGATTGAAAAATGACATTGCCAAAGCAACAGGGGATATCAAAGTGACAGAATC
GGAGATCAAAAAGGCGGAGTCACCTACAGCTGCTAAACTCAAAGGCTTCTCTGTGTGTCTCTTTCTTTGCCATCAGCT
GGGCACTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTGCCTCGGCCACAAAAAGCATGCAAAGTCATTGTTA
CAACAGGGATCTACAGAACTATTTACCACCAGATATGACCTAGTTTTATATTTCTGGGAGGAAATGAATTCATATCTAG
AAGTCTGGAGTGAGCAAAACAAGAGCAAGAAACAAAAAGAAGCCAAAAGCAGAAGGCTCCAATATGAACAAGATAAATCTA
TCTTCAAAGACATATTAGAAGTTGGGAAAATAATTCATGTGAACTAGACAAGTGTGTTAAGAGTGATAAGTAAATGCAC
GTGGAGACAAGTGACATCCCCAGATCTCAGGGACCTCCCCCTGCCTGTACCTGGGGAGTGAGAGGACAGGATAGTGCATG
TTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTCTGAGGAAGCCCTGGAAAGTCTATCCCAACATATC
CACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGACGCTGCTAATTGACTGCCACTTCGCAACTCAGGGG
CGGCTGCATTTTAGTAATGGGTCAAATGATTCACCTTTTTATGATGCTTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGA
CAAATGCCAAAGTTGAGAAAAATGATCATAATTTAGCATAAACAGAGCAGTCGGCGACACCGATTTTATAAATAAACTG
AGCACCTTCTTTTTAAACAAACAAATGCGGGTTATTTCTCAGATGATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTT
TCACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGGACAGCTAAGACCTCA
GTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTTGCCCCCATCTCCGGGGGAATGTCTGAAGACAAT
TTTGGTTACCTCAATGAGGGAGTGGAGGAGGATACAGTGCTACTACCAACTAGTGATAGAGGCCAGGGATGCTGCTCAA
CCTCCTACCATGTACAGGACGTCTCCCCATTACAACACCAATCCGAAGTGCAACTGTGTGTCAGGGCTAAGAAACCTG
GTTTTGAGTAGAAAAGGGCCTGGAAAGAGGGGAGCCAAACAAATCTGTCTGCTTCCCTCACATTAGTCATTGGCAAATAAGC
ATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTCTATCGGGCACCAGGATAACATCTCTCAGTGAACAG
AGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGCTTGTGAGCTTCTAAGTTTCTTTCCCTTCATTCTA
CCCTGCAAGCCAAGTTCTGTAAAGAGAAATGCCTGAGTTCTAGCTCAGGTTTTCTTACTCTGAATTTAGATCTCCAGACCC
TGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCATGAAGCACACACAGACTTTTGAAAGCAAGGACAAT
GACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAAGAATACTTTGTTTCCAGCCCCCTTCCACACTCTT
CATGTGTTAACCCTGCCTTCCCTGGACCTTGAGCCACGGTGACTGTATTACATGTTGTTATAGAAAAGTATTTTAGAG
TTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTACACCA

[Expression and Significance of BTLA and Its Ligand HVEM in Patients with
Chronic Myelomonocytic Leukemia]

Zhongguo Shi Yan Xue Ye Xue Za Zhi 28 (1), 56-62 (2020)

AGTTATTTACAGATGCCACTGGGGTAGGTAACTGACCCAACTCTGCAGCACTCAGAAGACGAAGCAAAGCCTTCTACT
TGAGCAGTTTTTCCATCACTGATATGTGCAGGAAATGAAGACATTGCCTGCCATGCTTGGAAGTGGGAAATTATTTGGG
TCTTCTTCTTAATCCCATATCTGGACATCTGGAACATCCATGGGAAAGAATCATGTGATGTACAGCTTTATATAAAGAGA
CAATCTGAACACTCCATCTTAGCAGGAGATCCCTTTGAACTAGAATGCCCTGTGAAATACTGTGCTAACAGGCCTCATGT
GACTTGGTGCAAGCTCAATGGAACAACATGTGTAAAACCTTGAAGATAGACAAACAAGTTGGAAGGAAGAGAAGAACATTT
CATTTTTTATTCTACATTTTGAACCACTGCTTCTAATGACAATGGGTCTACCGCTGTTCTGCAATTTTTCAGTCTAAT
CTCATTGAAAGCCACTCAACAACCTTTTATGTGACAGGAAAGCAAAATGAACTCTCTGACACAGCAGGAAGGGAATTA
CCTGGTTGATGCTCACCTTAAGAGTGAGCAACAGAAGCAAGCACCAGGCAAAATTTCCCAAGTACTGCTATCAGAACTG
GAATTTATGATAATGACCCTGACCTTTGTTTCAGGATGCAGGAAGGGTCTGAAGTTTATTCTAATCCATGCCTGGAAGAA
AACAACCAAGGCATTGTTTATGCTTCCCTGAACCATCTGTGATTGGACCGAACTCAAGACTGGCAAGAAATGTAAAAAGA
AGCACCACAGAAATATGCATCCATATGTGTGAGGAGTTAAGTCTGTTTCTGACTCCAACAGGGACCATTTGAATGATCAGC
ATGTTGACATCATTGTCTGGGCTCAACAGGATGTCAAATAATATTTCTCAATTTGAGAATTTTTACTTTAGAAATGTTCA
TGTTAGTGCTTGGGTCTTAAGGGTCCATAGGATAAATGATTAAAATTTCTCTCAGAACTTATTTGGGAGCTTTTTATAT
TATAGCCTTGAATAACAAAATCTCTCCAAAACCTGGTTGACATCATGAGTAGCAGAATAGTAGAACGTTTAACTTAGCTA
CATTTTACCCAATATACAACTCGATCTTGCCCTTTGAAGCTATTGGAAGACTTGTAGGGAAAAGAGGTTTGTGTTACCT
GCATCAGTTCACTACACACTCTTGAAAACAAAATGTCCCAATTTGACTAACCAACCATAAATACAGTAATGATTGTATAT

Proc Natl Acad Sci U S A 102 (37), 13218-13223 (2005)

[illegible]

A coreceptor interaction between the CD28 and TNF receptor family members B and T lymphocyte attenuator and herpesvirus entry mediator

Proc Natl Acad Sci U S A 102 (4), 1116-1121 (2005)

AGTTATTTTCACAGATGCCACTGGGGTAGGTAAACTGACCCAACTCTGCAGCACTCAGAAGACGAAGCAAAGCCTTCTACT
TGAGCAGTTTTTCCATCACTGATATGTGCAGGAAATGAAGACATTGCCCTGCCATGCTTGAACTGGGAAATTATTTTGGG
TCTTCTTCTTAATCCCATATCTGGACATCTGGAACATCCATGGGAAAGAATCATGTGATGTACAGCTTTATATAAAGAGA
CAATCTGAACACTCCATCTTAGCAGGAGATCCCTTTGAACTAGAATGCCCTGTGAAATACTGTGCTAACAGGCCTCATGT

B and T lymphocyte attenuator regulates T cell activation through interaction with herpesvirus entry mediator

AGTTATTTTCACAGATGCCACTGGGGGTAGGTAAACTGACCCAACTCTGCAGCACTCAGAAGACGAAGCAAAGCCTTCTACT
TGAGCAGTTTTTCCATCACTGATATGTGCAGGAAATGAAGACATTGCCTGCCATGCTTGGAAGCTGGGAAATTATTTTGGG
TCTTCTTCTTAATCCCATATCTGGACATCTGGAACATCCATGGGAAAGAATCATGTGATGTACAGCTTTATATAAAGAGA
CAATCTGAACACTCCATCTTAGCAGGAGATCCCTTTGAACTAGAATGCCTGTGAAATACTGTGCTAACAGGCCTCATGT
GACTTGGTGCAAGCTCAATGGAACAACATGTGTAAGAACTTGAAGATAGACAAACAAGTTGGAAGGAAGAGAAGAACATTT
CATTTTTTCATTCTACATTTTGAACCAAGTGCCTTCTAATGACAATGGGTATACCGCTGTTTCTGCAAATTTTCAGTCTAAT
CTCATTGAAAGCCACTCAACAACCTTTTATGTGACAGGAAAGCAAAATGAACTCTCTGACACAGCAGGAAGGGAAATTAA
CCTGGTTGATGCTCACCTTAAGAGTGAGCAAAACAGAAGCAAGCACCAGGCAAAATTCCCAAGTACTGCTATCAGAACTG
GAATTTATGATAATGACCTGACCTTTGTTTCAGGATGCAGGAAGGGTCTGAAGTTTATTCTAATCCATGCCTGGAAGAA
AACAAACCAGGCATTGTTTATGCTTCCCTGAACCATCTGTGATTGGACCGAACTCAAGACTGGCAAGAAATGTAAAGA

[illegible]

BTLA is a lymphocyte inhibitory receptor with similarities to CTLA-4 and PD-1
Nat Immunol 4 (7), 670-679 (2003)

AGTTATTTCACAGATGCCACTGGGGTAGGTAAACTGACCAACTCTGCAGCACTCAGAAGACGAAGCAAAGCCTTCTACT
TGAGCAGTTTTTCCATCACTGATATGTGCAGGAAATGAAGACATTGCCTGCCATGCTTGAACTGGGAAATTATTTTGGG
TCTTCTTCTTAATCCCATATCTGGACATCTGGAACATCCATGGGAAAGAATCATGTGATGTACAGCTTTATATAAAGAGA
CAATCTGAACACTCCATCTTAGCAGGAGATCCCTTTGAACTAGAATGCCCTGTGAAATACTGTGCTAACAGGCCTCATGT
GACTTGGTGCAAGCTCAATGGAACAACATGTGTA AAACTTGAAAGATAGACAAAAGTTGGAAGGAAGAGAAGAACATTT
CATTTTTTCATTCTACATTTTGAACCAGTGCTTCTAATGACAATGGGTGCATACCGCTGTTCTGCAAATTTTCAGTCTAAT
CTCATTGAAAGCCACTCAACAACTCTTTATGTGACAGGAAAGCAAAATGAACTCTCTGACACAGCAGGAAGGGAAATTAA
CCTGGTTGATGCTCACCTTAAGAGTGAGCAAACAGAAGCAAGCACCAGGCAAAATTCCCAAGTACTGCTATCAGAACTG
GAATTTATGATAATGACCTGACCTTTGTTTCAGGATGCAGGAAGGGTCTGAAGTTTATTCTAATCCATGCCTGGAAGAA
AACAAACCAGGCATTGTTTATGCTTCCCTGAACCATTCTGTCA TTGGACCGAACTCAAGACTGGCAAGAAATGTAAAAGA
AGCACCAACAGAATATGCATCCATATGTGTGAGGAGTTAAGTCTGTTTCTGACTCCAACAGGGACCATTGAATGATCAGC
ATGTTGACATCATTGTCTGGGCTCAACAGGATGTCAAATAATATTTCTCAATTTGAGAATTTTTACTTTAGAAATGTTCA
TGTTAGTGCTTGGGTCTTAAGGGTCCATAGGATAAATGATTA AAAATTTCTCTCAGAACTTATTTGGGAGCTTTTTTATAT
TATAGCCTTGAAATAACAAAATCTCTCCAAAACCTGGTTGACATCATGAGTAGCAGAATAGTAGAACGTTTAAACTTAGCTA
CATTTTACCCAATATACAAAACCTCGATCTTGCCCTTTGAAGCTATTGGAAGACTTGTAGGGAAAAGAGGTTTGTGTTACCT
GCATCAGTTCACTACACACTCTTGAAAACAAAATGTCCCAATTTGACTAACCAACCATAAATACAGTAATGATTGTATAT
TTCAAGTCAGTCTTCCAAAATAAGAAATTTTTGCTGTGTCA GTCTAAGAATGGTGTTTCTTAAATGCAAAGGAGAAATCA
TTTTAGGCTTGATGTAAGAAAATGAAAATAATAAATGGTGCAATAAAAAATAGAATATACCAATTGGATATAGGGTAGA
TGTTCCACATACCTGGCAAAACAAATGCTTATATCTACTCTGTTAGATTGATAAGCAAATATAGGTATTAATGGAGCAGTC
AACGTATAGCACATTTATGAGGAAAGTAGAGACTCACTGGGTACATAGACTAATGGATAGGAATGTGACATAATGCTGC
TGAATTAATATACTTATGGGCATCTGAATAGTTTAAAAGTTAGTCAGAATAGGTATCACTGGGCAAGTGAAGATAGCTTA
AACTGCTTCATGCTTGACTTGATAGCAAGTTAAAGTGCAATTAATGGAATGGAGGAAAACCCAGAATATTTAATTGGTCT

A coreceptor interaction between the CD28 and TNF receptor family members B and T lymphocyte attenuator and herpesvirus entry mediator
Proc Natl Acad Sci U S A 102 (4), 1116-1121 (2005)

374

BTLA is a lymphocyte inhibitory receptor with similarities to CTLA-4 and PD-1
Nat Immunol 4 (7), 670-679 (2003)

377

TGCTCTAGAGAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCTGTCAGGGTCAGTAAGGAAAACGGTGGCCTAGGGT
ACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAGAGGCAGAGATAGAACCTGGAGCCACTTCTATCTG
GGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCAACAAGCCATAGTGGAGAGAACTGAATAAACAGGAAAATGCCAGA
GCTTGTGAACCCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCCTGGGGAAGCTGTGAAAGAACCAAAAGAGATCACA
ATACTCAAAAGAGAGAGAGAGAGAGAAAAAGAGAGATCTTGATCCACAGAAATACATGAAATGTCTGGTCTGTCCACCCCA
TCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATGGACATAAGACAGACAGCAGTTTCCCTGGTGGTCA
GGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCCTGGAAGCAGAGCTGGGGAGGGAGAGCCATCACCTT
GATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCTACTCTGGCTGAGAGAGGAAGAGCTGCAACGGAATTAGGAAGA
CCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCCTACGGGAACGTGGGCTGGCCCAGCATAGGGCTAGCA
AATTTGAGTTGGATGATTGTTTTTGGCTCAAGGCAACCAGAGGAACTTGCATACAGAGACAGATATACTGGGAGAAATGA
CTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAGTCTCTGCCCCAACATAAAGAGAACTCTGGGGAGC
CTGAGCCACAAAAATGTTCCCTTTATTTTATGTAAACCTCAAGGGTTATAGACTGCCATGCTAGACAAGCTTGTCCATGT
AATATCCCATGTTTTTACCCTGCCCCTGCCTTGATTAGACTCCTAGCACCTGGCTAGTTTCTAACATGTTTTGTGCAGC
ACAGTTTTTAATAAATGCTTGTTACATTCA

Cowpox virus encodes a protein that binds B7.1 and B7.2 and subverts T cell
costimulation

Proc Natl Acad Sci U S A 116 (42), 21113-21119 (2019)

AGTCATTGCCGAGGAAGGCTTGACAGGGTGAAAAGCTTTGCTTCTCTGCTGCTGTAACAGGGACTAGCACAGACACACGG
ATGAGTGGGGTCATTTCCAGATATTAGGTCACAGCAGAAGCAGCCAAAATGGATCCCCAGTGGTGCTGCTCCTCTGAAGA
TTCAAGCTTATTTCAATGAGACTGCAGACCTGCCATGCCAATTTGCAAACCTCTCAAAACCAAAGCCTGAGTGAGCTAGTA
GTATTTTGGCAGGACCAGGAAAACCTTGGTTCTGAATGAGGTATACTTAGGCAAAGAGAAAATTTGACAGTGTTTATTCCAA
GTATATGGGCCGCACAAGTTTTGATTCCGACAGTTGGACCCTGAGACTTCACAATCTTCAGATCAAGGACAAGGGCTTGT
ATCAATGTATCATCCATCAGAAAAAGCCACAGGAATGATTGCGATCCACCAGATGAATTCTGAACTGTCAGTGCTTGCT
AACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAAATGTGTACATAAAATTTGACCTGCTCATCTATACA
CGGTTACCCAGAACCTAAGAAGATGAGTGTTTTGCTAAGAACCAAGAATTCAACTATCGAGTATGATGGTGTATGCAGA
AATCTCAAGATAATGTACAGAACTGTACGACGTTTCCATCAGCTTGTCTGTTTCAATCCCTGATGTTACGAGCAATATG
ACCATCTTCTGTATTCTGGAACTGACAAGACGCGGCTTTTATCTTCACCTTTCTCTATAGAGCTTGAGGACCCCTCAGCC
TCCCCCAGACCACATTCCCTTGATTACAGCTGTACTTCCAACAGTTATTATATGTGTGATGGTTTTCTGTCTAATTCTAT
GGAAATGGAAGAAGAAGAAGCGGCCTCGCAACTCTTATAAATGTGGAACCAACACAATGGAGAGGGAAGAGAGTGAACAG
ACCAAGAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAGCCAGCGTGTTTTTAAAAGTTCAAGACATCTTC
ATGCGACAAAAGTGATACATGTTTTTAATTAAGAGTAAAGCCCATAACAAGTATTCATTTTTTCTACCCTTTCTTTTGT
AGTTCCTGGGCAACCTTTTTGATTTCTTCCAGAAGGCAAAAAGACATTACCATGAGTAATAAGGGGGCTCCAGGACTCCC
TCTAAGTGGAATAGCCTCCCTGTAACCTCAGCTCTGCTCCGTATGCCAAGAGGAGACTTTAATTCTCTTACTGCTTCTTT
TCACTTCAGAGCACACTTATGGGCCAAGCCAGCTTAATGGCTCATGACCTGGAAATAAAATTTAGGACCAATACCTCCT
CCAGATCAGATTCTTCTCTTAATTTCTAGATTGTGTTTTTTTTTAAATAGACCTCTCAATTTCTGGAAAACCTGCCTTT
TATCTGCCCAGAAATCTAAGCTGGTGCCCCACTGAATTTTGTGTGTACCTGTGACTAAACAACCTACCTCCTCAGTCTGGG
TGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAAACATAGAGATCTATGTACTGTAATAGTGTGATTACTA
TGCTCTAGAGAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCTGTCAGGGTCAGTAAGGAAAACGGTGGCCTAGGGT
ACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAGAGGCAGAGATAGAACCTGGAGCCACTTCTATCTG
GGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCAACAAGCCATAGTGGAGAGAACTGAATAAACAGGAAAATGCCAGA
GCTTGTGAACCCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCCTGGGGAAGCTGTGAAAGAACCAAAAGAGATCACA
ATACTCAAAAGAGAGAGAGAGAGAGAAAAAGAGAGATCTTGATCCACAGAAATACATGAAATGTCTGGTCTGTCCACCCCA
TCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATGGACATAAGACAGACAGCAGTTTCCCTGGTGGTCA
GGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCCTGGAAGCAGAGCTGGGGAGGGAGAGCCATCACCTT
GATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCTACTCTGGCTGAGAGAGGAAGAGCTGCAACGGAATTAGGAAGA
CCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCCTACGGGAACGTGGGCTGGCCCAGCATAGGGCTAGCA
AATTTGAGTTGGATGATTGTTTTTGGCTCAAGGCAACCAGAGGAACTTGCATACAGAGACAGATATACTGGGAGAAATGA

CTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAGTCTCTGCCCCAAACATAAAGAGAACTCTGGGGAGC
CTGAGCCACAAAAATGTTCTTTATTTTATGTAAACCTCAAGGGTTATAGACTGCCATGCTAGACAAGCTTGTCCATGT
AATATTTCCCATGTTTTTACCCTGCCCCCTGCCTTGATTAGACTCCTAGCACCTGGCTAGTTTCTAACATGTTTTGTGCAGC
ACAGTTTTTAATAAATGCTTGTTACATTCA

Genetic association between cluster of differentiation 86 variations and sepsis
risk: A case-control study

Medicine (Baltimore) 98 (43), e17482 (2019)

AGTCATTGCCGAGGAAGGCTTGCACAGGGTGAAGCTTTGCTTCTCTGCTGCTGTAACAGGGACTAGCACAGACACACGG
ATGAGTGGGGTCATTTCCAGATATTAGGTCACAGCAGAAGCAGCCAAAATGGATCCCCAGTGGTGCTGCTCCTCTGAAGA
TTCAAGCTTATTTCAATGAGACTGCAGACCTGCCATGCCAATTTGCAAACCTCTCAAAACCAAAGCCTGAGTGAGCTAGTA
GTATTTTGGCAGGACCAGGAAAACCTTGGTTCTGAATGAGGTATACTTAGGCAAAGAGAAAATTTGACAGTGTTTCATTCCAA
GTATATGGGCCGCACAAGTTTTGATTTCGGACAGTTGGACCCTGAGACTTCACAATCTTCAGATCAAGGACAAGGGCTTGT
ATCAATGTATCATCCATCACAAAAAGCCCACAGGAATGATTTCGCATCCACCAGATGAATTCTGAACTGTCAGTGCTTGTCT
AACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAAATGTGTACATAAATTTGACCTGCTCATCTATACA
CGGTTACCCAGAACCTAAGAAGATGAGTGTTTTGCTAAGAACCAAGAATTCAACTATCGAGTATGATGGTGTTATGCAGA
AATCTCAAGATAATGTACAGAACTGTACGACGTTTCCATCAGCTTGTCTGTTTCATTCCCTGATGTTACGAGCAATATG
ACCATCTTCTGTATTCTGGAACTGACAAGACGCGGCTTTTATCTTCACCTTTCTCTATAGAGCTTGAGGACCCTCAGCC
TCCCCCAGACCACATTCTTGGATTACAGCTGTACTTCCAACAGTTATTATATGTGTGATGGTTTTCTGTCTAATTCTAT
GGAAATGGAAGAAGAAGAAGCGGCCTCGCAACTCTTATAAATGTGGAACCAACACAATGGAGAGGGAAGAGAGTGAACAG
ACCAAGAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAGCCCAGCGTGTTTTTAAAAGTTCGAAGACATCTTC
ATGCGACAAAAGTGATACATGTTTTTAAATTAAGAGTAAAGCCCATAACAAGTATTCATTTTTTCTACCCTTTCTTTTGT
AGTTCCTGGGCAACCTTTTTGATTTCTTCCAGAAGGCAAAAAGACATTACCATGAGTAATAAGGGGGCTCCAGGACTCCC
TCTAAGTGGAATAGCCTCCCTGTAACCTCCAGCTCTGCTCCGTATGCCAAGAGGAGACTTTAATTCTCTTACTGCTTCTTT
TCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCATGACCTGGAATAAAATTTAGGACCAATACCTCCT
CCAGATCAGATTCTTCTCTTAATTTTCATAGATTGTGTTTTTTTTTAAATAGACCTCTCAATTTCTGGAAAACCTGCCTTT
TATCTGCCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGTACCTGTGACTAAACAACCTACCTCCTCAGTCTGGG
TGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAAACATAGAGATCTATGTAAGTGAATAGTGTGATTACTA
TGCTCTAGAGAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCTGTCTAGGGTCAGTAAGGAAAACGGTGCCCTAGGGT
ACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAGAGGCAGAGATAGAACCTGGAGCCACTTCTATCTG
GGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCAACAAGCCATAGTGAGAGAACTGAATAAACAGGAAAATGCCAGA
GCTTGTGAACCCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCCTGGGGAAGCTGTGAAAGAACCAAAAGAGATCACA
ATACTCAAAAGAGAGAGAGAGAGAGAAAAAGAGAGATCTTGATCCACAGAAATACATGAAATGTCTGGTCTGTCCACCCCA
TCAACAAGTCTTGAAACAAGCAACAGATGGTAGTCTGTCCAAATGGACATAAGACAGACAGCAGTTTCCCTGGTGGTCA
GGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCTGGAAGCAGAGCTGGGGAGGGAGAGCCATCACCTT
GATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGCTGAGAGAGGAAGAGCTGCAACGGAATTAGGAAGA
CCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCCTACGGGAACGTGGGCTGGCCCAGCATAGGGCTAGCA
AATTTGAGTTGGATGATTGTTTTTGTCTCAAGGCAACCAGAGGAACTTGCATACAGAGACAGATATACTGGGAGAAATGA
CTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAGTCTCTGCCCCAAACATAAAGAGAACTCTGGGGAGC
CTGAGCCACAAAAATGTTCTTTATTTTATGTAAACCTCAAGGGTTATAGACTGCCATGCTAGACAAGCTTGTCCATGT
AATATTTCCCATGTTTTTACCCTGCCCCCTGCCTTGATTAGACTCCTAGCACCTGGCTAGTTTCTAACATGTTTTGTGCAGC
ACAGTTTTTAATAAATGCTTGTTACATTCA

Silencing of CD86 in dendritic cells by small interfering RNA regulates cytokine
production in T cells from patients with allergic rhinitis in vitro

Mol Med Rep 20 (4), 3893-3900 (2019)

AGTCATTGCCGAGGAAGGCTTGCACAGGGTGAAGCTTTGCTTCTCTGCTGCTGTAACAGGGACTAGCACAGACACACGG
ATGAGTGGGGTCATTTCCAGATATTAGGTCACAGCAGAAGCAGCCAAAATGGATCCCCAGTGGTGCTGCTCCTCTGAAGA

TTCAAGCTTATTTCAATGAGACTGCAGACCTGCCATGCCAATTTGCAAACCTCTCAAAAACCAAAGCCTGAGTGAGCTAGTA
 GTATTTTGGCAGGACCAGGAAAACCTTGGTTCTGAATGAGGTATACTTAGGCAAAGAGAAAATTTGACAGTGTTTCATTCCAA
 GTATATGGGCCGCACAAGTTTTGATTTCGGACAGTTGGACCCTGAGACTTCACAATCTTCAGATCAAGGACAAGGGCTTGT
 ATCAATGTATCATCCATCACAAAAAGCCCACAGGAATGATTTCGCATCCACCAGATGAATTCTGAACTGTCAGTGCTTGCT
 AACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAAATGTGTACATAAAATTTGACCTGCTCATCTATACA
 CGGTTACCCAGAACCTAAGAAGATGAGTGTGTTTGGCTAAGAACCAAGAATTCAACTATCGAGTATGATGGTGTATGCAGA
 AATCTCAAGATAATGTACAGAACTGTACGACGTTTCCATCAGCTTGTCTGTTTCATTCCCTGATGTTACGAGCAATATG
 ACCATCTTCTGTATTCTGGAACTGACAAGACGGGCTTTTATCTTCACCTTTCTCTATAGAGCTTGAGGACCCTCAGCC
 TCCCCCAGACCACATTCTTGGATTACAGCTGTACTTCCAACAGTTATTATATGTGTGATGGTTTTCTGTCTAATTCTAT
 GGAAATGGAAGAAGAAGAAGCGGCCTCGCAACTCTTATAAATGTGGAACCAACACAATGGAGAGGGAAGAGAGTGAACAG
 ACCAAGAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAGCCCAGCGTGTTTTTAAAAGTTCTGAAGACATCTTC
 ATGCGACAAAAGTGATACATGTTTTTAATTAAGAGTAAAGCCCATACAAGTATTCATTTTTTCTACCCTTTCTTTTGT
 AGTTCCTGGGCAACCTTTTTGATTTCTTCCAGAAGGCAAAAAGACATTACCATGAGTAATAAGGGGGCTCCAGGACTCCC
 TCTAAGTGAATAGCCTCCCTGTAACCTCCAGCTCTGCTCCGTATGCCAAGAGGAGACTTTAATTCTCTTACTGCTTCTTT
 TCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCATGACCTGGAAATAAAATTTAGGACCAATACCTCCT
 CCAGATCAGATTCTTCTCTTAATTTTCATAGATTGTGTTTTTTTTTAAATAGACCTCTCAATTTCTGGAAAACCTGCCTTT
 TATCTGCCCAGAATTCTAAGCTGGTGCCCACTGAATTTTGTGTGTACCTGTGACTAAACAACCTACCTCCTCAGTCTGGG
 TGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAAACATAGAGATCTATGTACTGTAATAGTGTGATTACTA
 TGCTCTAGAGAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCTGTCTAGGGTCAGTAAGGAAAACGGTGGCCTAGGGT
 ACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAGAGGCAGAGATAGAACCTGGAGCCACTTCTATCTG
 GGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCCAACAAGCCATAGTGGAGAGAACTGAATAAACAGGAAAATGCCAGA
 GCTTGTGAACCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCCTGGGGAAGCTGTGAAAGAACCAAAAGAGATCACA
 ATACTCAAAAGAGAGAGAGAGAGAAAAAAGAGAGATCTTGATCCACAGAAATACATGAAATGTCTGGTCTGTCCACCCCA
 TCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATGGACATAAGACAGACAGCAGTTTCCCTGGTGGTCA
 GGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCTCTTCTGGAAGCAGAGCTGGGGAGGGAGAGCCATCACCTT
 GATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGCTGAGAGAGGAAGAGCTGCAACGGAATTAGGAAGA
 CCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCTACGGGAACGTGGGCTGGCCCAGCATAGGGCTAGCA
 AATTTGAGTTGGATGATTGTTTTTGCTCAAGGCAACCAGAGGAACTTGCATACAGAGACAGATATACTGGGAGAAATGA
 CTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAGTCTCTGCCCCAACATAAAGAGAACTCTGGGGAGC
 CTGAGCCACAAAAATGTTTCCTTTATTTTATGTAAACCTCAAGGGTTATAGACTGCCATGCTAGACAAGCTTGTCCATGT
 AATATTTCCCATGTTTTTACCCTGCCCCTGCCTTGATTAGACTCCTAGCACCTGGCTAGTTTCTAACATGTTTTGTGCAGC
 ACAGTTTTTAATAAATGCTTGTTACATTCA

Staphylococcal and Streptococcal Superantigens Trigger B7/CD28 Costimulatory Receptor Engagement to Hyperinduce Inflammatory Cytokines

Front Immunol 10, 942 (2019)

AGTCATTGCCGAGGAAGGCTTGACAGGGTGAAAGCTTTGCTTCTCTGCTGCTGTAACAGGGACTAGCACAGACACACGG
 ATGAGTGGGGTCATTTCCAGATATTAGGTCACAGCAGAAGCAGCCAAAATGGATCCCCAGTGGTGCTGCTCCTCTGAAGA
 TTCAAGCTTATTTCAATGAGACTGCAGACCTGCCATGCCAATTTGCAAACCTCTCAAAAACCAAAGCCTGAGTGAGCTAGTA
 GTATTTTGGCAGGACCAGGAAAACCTTGGTTCTGAATGAGGTATACTTAGGCAAAGAGAAAATTTGACAGTGTTTCATTCCAA
 GTATATGGGCCGCACAAGTTTTGATTTCGGACAGTTGGACCCTGAGACTTCACAATCTTCAGATCAAGGACAAGGGCTTGT
 ATCAATGTATCATCCATCACAAAAAGCCCACAGGAATGATTTCGCATCCACCAGATGAATTCTGAACTGTCAGTGCTTGCT
 AACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAAATGTGTACATAAAATTTGACCTGCTCATCTATACA
 CGGTTACCCAGAACCTAAGAAGATGAGTGTGTTTGGCTAAGAACCAAGAATTCAACTATCGAGTATGATGGTGTATGCAGA
 AATCTCAAGATAATGTACAGAACTGTACGACGTTTCCATCAGCTTGTCTGTTTCATTCCCTGATGTTACGAGCAATATG
 ACCATCTTCTGTATTCTGGAACTGACAAGACGGGCTTTTATCTTCACCTTTCTCTATAGAGCTTGAGGACCCTCAGCC
 TCCCCCAGACCACATTCTTGGATTACAGCTGTACTTCCAACAGTTATTATATGTGTGATGGTTTTCTGTCTAATTCTAT
 GGAAATGGAAGAAGAAGAAGCGGCCTCGCAACTCTTATAAATGTGGAACCAACACAATGGAGAGGGAAGAGAGTGAACAG

ACCAAGAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAGCCCAGCGTGTTTTTAAAAGTTTGAAGACATCTTC
 ATGCGACAAAAGTGATACATGTTTTTAATTAAGAGTAAAGCCCATACAAGTATTCATTTTTTCTACCCTTTCCTTTGTA
 AGTTCCTGGGCAACCTTTTTGATTTCTTCCAGAAGGCAAAAAGACATTACCATGAGTAATAAGGGGGCTCCAGGACTCCC
 TCTAAGTGGAATAGCCTCCCTGTAACCTCCAGCTCTGCTCCGTATGCCAAGAGGAGACTTTAATTCTCTTACTGCTTCTTT
 TCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCATGACCTGGAAATAAAATTTAGGACCAATACCTCCT
 CCAGATCAGATTCTTCTCTTAATTTTCATAGATTGTGTTTTTTTTTAAATAGACCTCTCAATTTCTGGAAAACCTGCCTTT
 TATCTGCCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGTACCTGTGACTAAACAACCTACCTCCTCAGTCTGGG
 TGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAAACATAGAGATCTATGTAAGTGTGATTACTA
 TGCTCTAGAGAAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCTGTGAGGGTCAGTAAGGAAAACGGTGGCCTAGGGT
 ACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAGAGGCAGAGATAGAACCTGGAGCCACTTCTATCTG
 GGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCAACAAGCCATAGTGGAGAGAACTGAATAAACAGGAAAATGCCAGA
 GCTTGTGAACCCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCCTGGGGAAGCTGTGAAAGAACCAAAAGAGATCACA
 ATACTCAAAAGAGAGAGAGAGAGAAAAAAGAGAGATCTTGATCCACAGAAATACATGAAATGTCTGGTCTGTCCACCCCA
 TCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATGGACATAAGACAGACAGCAGTTTCCCTGGTGGTCA
 GGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCTGGAAGCAGAGCTGGGGAGGGAGAGCCATCACCTT
 GATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGCTGAGAGAGGAAGAGCTGCAACGGAATTAGGAAGA
 CCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCTACGGGAACGTGGGCTGGCCCAGCATAGGGCTAGCA
 AATTTGAGTTGGATGATTGTTTTTGTCTCAAGGCAACCAGAGGAACTTGCATACAGAGACAGATATACTGGGAGAAATGA
 CTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAGTCTCTGCCCCAACATAAAGAGAACTCTGGGGAGC
 CTGAGCCACAAAAATGTTCCCTTTATTTTATGTAAACCTCAAGGGTTATAGACTGCCATGCTAGACAAGCTTGTCCATGT
 AATATCCCATGTTTTTACCCTGCCCCCTGCCTTGATTAGACTCCTAGCACCTGGCTAGTTTCTAACATGTTTTGTGCAGC
 ACAGTTTTTAATAAATGCTTGTTACATTCA

Localization in situ of the co-stimulatory molecules B7.1, B7.2, CD40 and their
 ligands in normal human lymphoid tissue

Eur J Immunol 25 (11), 3023-3029 (1995)

AGTCATTGCCGAGGAAGGCTTGACAGGGTGAAAGCTTTGCTTCTCTGCTGCTGTAACAGGGACTAGCACAGACACACGG
 ATGAGTGGGGTCATTTCCAGATATTAGGTCACAGCAGAAGCAGCCAAAATGGATCCCCAGTGGTGCTGCTCCTCTGAAGA
 TTCAAGCTTATTTCAATGAGACTGCAGACCTGCCATGCCAATTTGCAAACCTCTCAAAACCAAGCCTGAGTGAGCTAGTA
 GTATTTTGGCAGGACCAGGAAAACCTTGGTTCTGAATGAGGTATACTTAGGCAAAGAGAAATTTGACAGTGTTTCATTCCAA
 GTATATGGGCCGCACAAGTTTTGATTCCGACAGTTGGACCCTGAGACTTCACAATCTTCAGATCAAGGACAAGGGCTTGT
 ATCAATGTATCATCCATCACAAAAAGCCCACAGGAATGATTGCGATCCACCAGATGAATTCTGAACTGTCAGTGCTTGCT
 AACTTCAGTCAACCTGAAAATAGTACCAATTTCTAATATAACAGAAAATGTGTACATAAAATTTGACCTGCTCATCTATACA
 CGGTTACCCAGAACCTAAGAAGATGAGTGTTTTGCTAAGAACCAAGAATTCAACTATCGAGTATGATGGTGTTATGCAGA
 AATCTCAAGATAATGTACAGAACTGTACGACGTTTCCATCAGCTTGTCTGTTTCATTCCCTGATGTTACGAGCAATATG
 ACCATCTTCTGTATTCTGGAAACTGACAAGACGGGCTTTTATCTTCACCTTTCTCTATAGAGCTTGAGGACCCCTCAGCC
 TCCCCCAGACCACATTCCCTTGATTACAGCTGTACTTCCAACAGTTATTATATGTGTGATGGTTTTCTGTCTAATTCTAT
 GGAAATGGAAGAAGAAGAAGCGGCCTCGCAACTCTTATAAATGTGGAACCAACACAATGGAGAGGGAAGAGAGTGAACAG
 ACCAAGAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAGCCCAGCGTGTTTTTAAAAGTTTGAAGACATCTTC
 ATGCGACAAAAGTGATACATGTTTTTAATTAAGAGTAAAGCCCATACAAGTATTCATTTTTTCTACCCTTTCCTTTGTA
 AGTTCCTGGGCAACCTTTTTGATTTCTTCCAGAAGGCAAAAAGACATTACCATGAGTAATAAGGGGGCTCCAGGACTCCC
 TCTAAGTGGAATAGCCTCCCTGTAACCTCCAGCTCTGCTCCGTATGCCAAGAGGAGACTTTAATTCTCTTACTGCTTCTTT
 TCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCATGACCTGGAAATAAAATTTAGGACCAATACCTCCT
 CCAGATCAGATTCTTCTCTTAATTTTCATAGATTGTGTTTTTTTTTAAATAGACCTCTCAATTTCTGGAAAACCTGCCTTT
 TATCTGCCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGTACCTGTGACTAAACAACCTACCTCCTCAGTCTGGG
 TGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAAACATAGAGATCTATGTAAGTGTGATTACTA
 TGCTCTAGAGAAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCTGTGAGGGTCAGTAAGGAAAACGGTGGCCTAGGGT
 ACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAGAGGCAGAGATAGAACCTGGAGCCACTTCTATCTG

GGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCCAACAAGCCATAGTGGAGAGAACTGAATAAACAGGAAAATGCCAGA
GCTTGTGAACCCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCCTGGGGAAGCTGTGAAAGAACCAAAAGAGATCACA
ATACTCAAAAGAGAGAGAGAGAGAGAAAAAGAGAGATCTTGATCCACAGAAATACATGAAATGTCTGGTCTGTCCACCCCA
TCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATGGACATAAGACAGACAGCAGTTTCCCTGGTGGTCA
GGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCCTGGAAGCAGAGCTGGGGAGGGAGAGCCATCACCTT
GATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGCTGAGAGAGGAAGAGCTGCAACGGAATTAGGAAGA
CCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCCTACGGGAACGTGGGCTGGCCCAGCATAGGGCTAGCA
AATTTGAGTTGGATGATTGTTTTGCTCAAGGCAACCAGAGGAACTTGCATACAGAGACAGATATACTGGGAGAAATGA
CTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAGTCTCTGCCCCAACATAAAGAGAACTCTGGGGAGC
CTGAGCCACAAAAATGTTCTTTATTTTATGTAAACCTCAAGGGTTATAGACTGCCATGCTAGACAAGCTTGTCCATGT
AATATTTCCCATGTTTTTACCCTGCCCCTGCCTTGATTAGACTCCTAGCACCTGGCTAGTTTCTAACATGTTTTGTGCAGC
ACAGTTTTTAATAAATGCTTGTTACATTCA

CD86 (B70/B7-2) on endothelial cells co-stimulates allogeneic CD4+ T cells
Int Immunol 7 (8), 1331-1337 (1995)

AGTCATTGCCGAGGAAGGCTTGACAGGGTGAAGCTTTGCTTCTCTGCTGCTGTAACAGGGACTAGCACAGACACACGG
ATGAGTGGGGTCATTTCCAGATATTAGGTCACAGCAGAAGCAGCCAAAATGGATCCCCAGTGGTGCTGCTCCTCTGAAGA
TTCAAGCTTATTTCAATGAGACTGCAGACCTGCCATGCCAATTTGCAAACCTCTCAAAACCAAGCCTGAGTGAGCTAGTA
GTATTTTGGCAGGACCAGGAAAACCTTGGTTCTGAATGAGGTATACTTAGGCAAAGAGAAATTTGACAGTGTTTATTCCAA
GTATATGGGCCGCACAAGTTTTGATTCCGACAGTTGGACCCCTGAGACTTCACAATCTTCAGATCAAGGACAAGGGCTTGT
ATCAATGTATCATCCATCACAAAAAGCCCACAGGAATGATTGCGATCCACCAGATGAATTCTGAACTGTCAGTGCTTGCT
AACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAAATGTGTACATAAATTTGACCTGCTCATCTATACA
CGGTTACCCAGAACCTAAGAAGATGAGTGTTTTGCTAAGAACCAAGAATTCAACTATCGAGTATGATGGTGTTATGCAGA
AATCTCAAGATAATGTACAGAACTGTACGACGTTTCCATCAGCTTGTCTGTTTCATTCCCTGATGTTACGAGCAATATG
ACCATCTTCTGTATTCTGGAAGCTGACAAGACGCGGCTTTTATCTTCACCTTTCTCTATAGAGCTTGAGGACCCTCAGCC
TCCCCCAGACCACATTCCTTGGATTACAGCTGTACTTCCAACAGTTATTATATGTGTGATGGTTTTCTGTCTAATTCTAT
GGAATGGAAGAAGAAGAAGCGGCCTCGCAACTCTTATAAATGTGGAACCAACACAATGGAGAGGGAAGAGAGTGAACAG
ACCAAGAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAGCCCAGCGTGTTTTTAAAAGTTCGAAGACATCTTC
ATGCGACAAAAGTGATACATGTTTTTAATTAAGAGTAAAGCCCATACAAGTATTCATTTTTTCTACCCTTTCCTTTGTA
AGTTCCTGGGCAACCTTTTTGATTTCTTCCAGAAGGCAAAAAGACATTACCATGAGTAATAAGGGGGCTCCAGGACTCCC
TCTAAGTGGAATAGCCTCCCTGTAAGTCCAGCTCTGCTCCGTATGCCAAGAGGAGACTTTAATTCTCTTACTGCTTCTTT
TCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCATGACCTGGAAATAAAATTTAGGACCAATACCTCCT
CCAGATCAGATTCTTCTCTTAATTTCATAGATTGTGTTTTTTTTTAAATAGACCTCTCAATTTCTGAAAACCTGCCTTT
TATCTGCCCAGAAATCTAAGCTGGTGCCCCACTGAATTTTGTGTGTACCTGTGACTAAACAACTACCTCCTCAGTCTGGG
TGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAAACATAGAGATCTATGTAAGTGTGATTACTA
TGCTCTAGAGAAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCTGTGAGGGTCAGTAAGGAAAACGGTGGCCTAGGGT
ACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAGAGGCAGAGATAGAACCTGGAGCCACTTCTATCTG
GGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCCAACAAGCCATAGTGGAGAGAACTGAATAAACAGGAAAATGCCAGA
GCTTGTGAACCCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCCTGGGGAAGCTGTGAAAGAACCAAAAGAGATCACA
ATACTCAAAAGAGAGAGAGAGAGAGAAAAAGAGAGATCTTGATCCACAGAAATACATGAAATGTCTGGTCTGTCCACCCCA
TCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATGGACATAAGACAGACAGCAGTTTCCCTGGTGGTCA
GGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCCTGGAAGCAGAGCTGGGGAGGGAGAGCCATCACCTT
GATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGCTGAGAGAGGAAGAGCTGCAACGGAATTAGGAAGA
CCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCCTACGGGAACGTGGGCTGGCCCAGCATAGGGCTAGCA
AATTTGAGTTGGATGATTGTTTTGCTCAAGGCAACCAGAGGAACTTGCATACAGAGACAGATATACTGGGAGAAATGA
CTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAGTCTCTGCCCCAACATAAAGAGAACTCTGGGGAGC
CTGAGCCACAAAAATGTTCTTTATTTTATGTAAACCTCAAGGGTTATAGACTGCCATGCTAGACAAGCTTGTCCATGT
AATATTTCCCATGTTTTTACCCTGCCCCTGCCTTGATTAGACTCCTAGCACCTGGCTAGTTTCTAACATGTTTTGTGCAGC

ACAGTTTTTAATAAATGCTTGTTACATTCA

CD80 (B7) and CD86 (B70) provide similar costimulatory signals for T cell proliferation, cytokine production, and generation of CTL

J Immunol 154 (1), 97-105 (1995)

AGTCATTGCCGAGGAAGGCTTGCACAGGGTAAAAGCTTTGCTTCTCTGCTGCTGTAACAGGGACTAGCACAGACACACGG
ATGAGTGGGGTCATTTCCAGATATTAGGTCACAGCAGAAGCAGCCAAAATGGATCCCCAGTGGTGCTGCTCCTCTGAAGA
TTCAAGCTTATTTCAATGAGACTGCAGACCTGCCATGCCAATTTGCAAACCTCTCAAAACCAAAGCCTGAGTGAGCTAGTA
GTATTTTGGCAGGACCAGGAAAACCTTGGTTCTGAATGAGGTATACTTAGGCAAAGAGAAAATTTGACAGTGTTTCATTCCAA
GTATATGGGCCGCACAAGTTTTGATTTCGGACAGTTGGACCCTGAGACTTCACAATCTTCAGATCAAGGACAAGGGCTTGT
ATCAATGTATCATCCATCACAAAAGCCCACAGGAATGATTTCGCATCCACCAGATGAATTCTGAACTGTCAGTGCTTGCT
AACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAAATGTGTACATAAATTTGACCTGCTCATCTATACA
CGGTTACCCAGAACCTAAGAAGATGAGTGTTTTGCTAAGAACCAAGAATTCAACTATCGAGTATGATGGTGTTATGCAGA
AATCTCAAGATAATGTACAGAACTGTACGACGTTTCCATCAGCTTGTCTGTTTCATTCCCTGATGTTACGAGCAATATG
ACCATCTTCTGTATTCTGGAACCTGACAAGACGCGGCTTTTATCTTCACCTTTCTCTATAGAGCTTGAGGACCCTCAGCC
TCCCCCAGACCACATTCCTTGATTACAGCTGTACTTCCAACAGTTATTATATGTGTGATGGTTTTCTGTCTAATTCTAT
GGAAATGGAAGAAGAAGAAGCGGCCTCGCACTCTTATAAATGTGGAACCAACACAATGGAGAGGGAAGAGAGTGAACAG
ACCAAGAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAGCCCAGCGTGTTTTTAAAAGTTCGAAGACATCTTC
ATGCGACAAAAGTGATACATGTTTTTAATTAAAGAGTAAAGCCCATACAAGTATTCATTTTTTCTACCCTTTCCTTTGTA
AGTTCCCTGGGCAACCTTTTTGATTTCTTCCAGAAGGCAAAAAGACATTACCATGAGTAATAAGGGGGCTCCAGGACTCCC
TCTAAGTGGAATAGCCTCCCTGTAACCTCCAGCTCTGCTCCGTATGCCAAGAGGAGACTTTAATTCTCTTACTGCTTCTTT
TCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCATGACCTGGAAAATAAAATTTAGGACCAATACCTCCT
CCAGATCAGATTCTTCTCTTAATTTTCATAGATTGTGTTTTTTTTTAAATAGACCTCTCAATTTCTGGAAAACCTGCCTTT
TATCTGCCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGTACCTGTGACTAAACAACCTACCTCCTCAGTCTGGG
TGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAAACATAGAGATCTATGTAAGTGTGATTACTA
TGCTCTAGAGAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCTGTGAGGGTCAGTAAGGAAAACGGTGGCCTAGGGT
ACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAGAGGCAGAGATAGAACCTGGAGCCACTTCTATCTG
GGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCCAACAAGCCATAGTGGAGAGAACTGAATAAACAGGAAAATGCCAGA
GCTTGTGAACCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCCTGGGGAAGCTGTGAAAGAACCAAAAGAGATCACA
ATACTCAAAAGAGAGAGAGAGAGAGAAAAAAGAGAGATCTTGATCCACAGAAATACATGAAATGTCTGGTCTGTCCACCCCA
TCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATGGACATAAGACAGACAGCAGTTTCCCTGGTGGTCA
GGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCTGGAAGCAGAGCTGGGGAGGGAGAGCCATCACCTT
GATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGCTGAGAGAGGAAGAGCTGCAACGGAATTAGGAAGA
CCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCTACGGGAACGTGGGCTGGCCCAGCATAGGGCTAGCA
AATTTGAGTTGGATGATTGTTTTTGTCTAAGGCAACCAGAGGAACTTGCATACAGAGACAGATATACTGGGAGAAATGA
CTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAGTCTCTGCCCCAACATAAAGAGAACTCTGGGGAGC
CTGAGCCACAAAAATGTTCCCTTTATTTTATGTAAACCTCAAGGGTTATAGACTGCCATGCTAGACAAGCTTGTCCATGT
AATATTTCCCATGTTTTTACCCTGCCCCTGCCTTGATTAGACTCCTAGCACCTGGCTAGTTTCTAACATGTTTTTGTGCAGC
ACAGTTTTTAATAAATGCTTGTTACATTCA

The B7-2 (B70) costimulatory molecule expressed by monocytes and activated B lymphocytes is the CD86 differentiation antigen

Blood 84 (5), 1402-1407 (1994)

AGTCATTGCCGAGGAAGGCTTGCACAGGGTAAAAGCTTTGCTTCTCTGCTGCTGTAACAGGGACTAGCACAGACACACGG
ATGAGTGGGGTCATTTCCAGATATTAGGTCACAGCAGAAGCAGCCAAAATGGATCCCCAGTGGTGCTGCTCCTCTGAAGA
TTCAAGCTTATTTCAATGAGACTGCAGACCTGCCATGCCAATTTGCAAACCTCTCAAAACCAAAGCCTGAGTGAGCTAGTA
GTATTTTGGCAGGACCAGGAAAACCTTGGTTCTGAATGAGGTATACTTAGGCAAAGAGAAAATTTGACAGTGTTTCATTCCAA
GTATATGGGCCGCACAAGTTTTGATTTCGGACAGTTGGACCCTGAGACTTCACAATCTTCAGATCAAGGACAAGGGCTTGT

ATCAATGTATCATCCATCACAAAAAGCCCACAGGAATGATTTCGCATCCACCAGATGAATTCTGAACTGTCAGTGCTTGCT
AACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAAATGTGTACATAAAATTTGACCTGCTCATCTATACA
CGGTTACCCAGAACCTAAGAAGATGAGTGTGTTTGCTAAGAACCAAGAATTCAACTATCGAGTATGATGGTGTATGCAGA
AATCTCAAGATAATGTACAGAACTGTACGACGTTTCCATCAGCTTGTCTGTTTCATTCCCTGATGTTACGAGCAATATG
ACCATCTTCTGTATTCTGGAACTGACAAGACGCGGCTTTTATCTTCACCTTTCTCTATAGAGCTTGAGGACCCCTCAGCC
TCCCCCAGACCACATTCCCTTGATTACAGCTGTACTTCCAACAGTTATTATATGTGTGATGGTTTTCTGTCTAATTCTAT
GGAAATGGAAGAAGAAGAAGCGGCCTCGCAACTCTTATAAATGTGGAACCAACACAATGGAGAGGGAAGAGAGTGAACAG
ACCAAGAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAGCCCAGCGTGTTTTTAAAAGTTTGAAGACATCTTC
ATGCGACAAAAGTGATACATGTTTTTAATTAAGAGTAAAGCCCATAACAAGTATTCATTTTTTCTACCCTTTCTTTGT
AGTTCCTGGGCAACCTTTTTGATTTCTTCCAGAAGGCAAAAAGACATTACCATGAGTAATAAGGGGGCTCCAGGACTCCC
TCTAAGTGAATAGCCTCCCTGTAACCTCAGCTCTGCTCCGTATGCCAAGAGGAGACTTTAATTCTCTTACTGCTTCTTT
TCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCATGACCTGGAAATAAAATTTAGGACCAATACCTCCT
CCAGATCAGATTCTTCTCTTAATTTATAGATTGTGTTTTTTTTTAAATAGACCTCTCAATTTCTGGAAAACCTGCCCTT
TATCTGCCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGTACCTGTGACTAAACAACCTACCTCCTCAGTCTGGG
TGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAAACATAGAGATCTATGTAAGTGTGATTACTA
TGCTCTAGAGAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCTGTGAGGGTCAGTAAGGAAAACGGTGGCCTAGGGT
ACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAGAGGCAGAGATAGAACCTGGAGCCACTTCTATCTG
GGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCAACAAGCCATAGTGGAGAGAACTGAATAAACAGGAAAATGCCAGA
GCTTGTGAACCCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCCTGGGGAAGCTGTGAAAGAACCAAAAGAGATCACA
ATACTCAAAAGAGAGAGAGAGAGAAAAAGAGAGATCTTGATCCACAGAAATACATGAAATGTCTGGTCTGTCCACCCCA
TCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATGGACATAAGACAGACAGCAGTTTCCCTGGTGGTCA
GGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCTGGAAGCAGAGCTGGGGAGGGAGAGCCATCACCTT
GATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGCTGAGAGAGGAAGAGCTGCAACGGAATTAGGAAGA
CCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCTACGGGAACGTGGGCTGGCCCAGCATAGGGCTAGCA
AATTTGAGTTGGATGATTGTTTTTGCTCAAGGCAACCAGAGGAACTTGCTACAGAGACAGATATACTGGGAGAAATGA
CTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAGTCTCTGCCCAAACATAAAGAGAACTCTGGGGAGC
CTGAGCCACAAAAATGTTTCTTTATTTTATGTAAACCTCAAGGGTTATAGACTGCCATGCTAGACAAGCTTGCCATGT
AATATTTCCCATGTTTTTACCCTGCCCCTGCCTTGATTAGACTCCTAGCACCTGGCTAGTTTCTAACATGTTTTGTGCAGC
ACAGTTTTTAATAAATGCTTGTTACATTCA

Molecular cloning and expression of early T cell costimulatory molecule-1 and
its characterization as B7-2 molecule

J Immunol 152 (10), 4929-4936 (1994)

AGTCATTGCCGAGGAAGGCTTGACAGGGTGAAAGCTTTGCTTCTCTGCTGCTGTAACAGGGACTAGCACAGACACACGG
ATGAGTGGGGTCATTTCCAGATATTAGGTCACAGCAGAAGCAGCCAAAATGGATCCCCAGTGGTGTCTCCTCTGAAGA
TTCAAGCTTATTTCAATGAGACTGCAGACCTGCCATGCCAATTTGCAAACCTCTCAAAACCAAAGCCTGAGTGAGCTAGTA
GTATTTTGGCAGGACCAGGAAAACCTTGGTTCTGAATGAGGTATACTTAGGCAAAGAGAAATTTGACAGTGTTTCATTCCAA
GTATATGGGCCGACAAGTTTTGATTGGACAGTTGGACCCTGAGACTTCACAATCTTCAGATCAAGGACAAGGGCTTGT
ATCAATGTATCATCCATCACAAAAAGCCCACAGGAATGATTTCGCATCCACCAGATGAATTCTGAACTGTCAGTGCTTGCT
AACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAAATGTGTACATAAAATTTGACCTGCTCATCTATACA
CGGTTACCCAGAACCTAAGAAGATGAGTGTGTTTGCTAAGAACCAAGAATTCAACTATCGAGTATGATGGTGTATGCAGA
AATCTCAAGATAATGTACAGAACTGTACGACGTTTCCATCAGCTTGTCTGTTTCATTCCCTGATGTTACGAGCAATATG
ACCATCTTCTGTATTCTGGAACTGACAAGACGCGGCTTTTATCTTCACCTTTCTCTATAGAGCTTGAGGACCCCTCAGCC
TCCCCCAGACCACATTCCCTTGATTACAGCTGTACTTCCAACAGTTATTATATGTGTGATGGTTTTCTGTCTAATTCTAT
GGAAATGGAAGAAGAAGAAGCGGCCTCGCAACTCTTATAAATGTGGAACCAACACAATGGAGAGGGAAGAGAGTGAACAG
ACCAAGAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAGCCCAGCGTGTTTTTAAAAGTTTGAAGACATCTTC
ATGCGACAAAAGTGATACATGTTTTTAATTAAGAGTAAAGCCCATAACAAGTATTCATTTTTTCTACCCTTTCTTTGT
AGTTCCTGGGCAACCTTTTTGATTTCTTCCAGAAGGCAAAAAGACATTACCATGAGTAATAAGGGGGCTCCAGGACTCCC

TCTAAGTGGAATAGCCTCCCTGTAAGTCCAGCTCTGCTCCGTATGCCAAGAGGAGACTTTAATTCTCTTACTGCTTCTTT
TCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCATGACCTGGAAATAAAATTTAGGACCAATACCTCCT
CCAGATCAGATTCTTCTCTTAATTTTCATAGATTGTGTTTTTTTTTAAATAGACCTCTCAATTTCTGGAAAACCTGCCTTT
TATCTGCCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGTACCTGTGACTAAACAACCTACCTCCTCAGTCTGGG
TGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAAACATAGAGATCTATGTACTGTAATAGTGTGATTACTA
TGCTCTAGAGAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCTGTCTAGGGTCAGTAAGGAAAACGGTGGCCTAGGGT
ACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAGAGGCAGAGATAGAACCTGGAGCCACTTCTATCTG
GGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCAACAAGCCATAGTGGAGAGAACTGAATAAACAGGAAAATGCCAGA
GCTTGTGAACCCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCCTGGGGAAGCTGTGAAAGAACCAAAAGAGATCACA
ATACTCAAAAGAGAGAGAGAGAGAGAAAAAGAGAGATCTTGATCCACAGAAATACATGAAATGTCTGGTCTGTCCACCCCA
TCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATGGACATAAGACAGACAGCAGTTTCCCTGGTGGTCA
GGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCCCTGGAAGCAGAGCTGGGGAGGGAGAGCCATCACCTT
GATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGCTGAGAGAGGAAGAGCTGCAACGGAATTAGGAAGA
CCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCTACGGGAACGTGGGCTGGCCCAGCATAGGGCTAGCA
AATTTGAGTTGGATGATTGTTTTTGTCTAAGGCAACCAGAGGAACTTGCATACAGAGACAGATATACTGGGAGAAATGA
CTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAGTCTCTGCCCCAACATAAAGAGAACTCTGGGGAGC
CTGAGCCACAAAAATGTTCCCTTTATTTTATGTAAACCTCAAGGGTTATAGACTGCCATGCTAGACAAGCTTGTCCATGT
AATATTTCCCATGTTTTTACCCTGCCCCCTGCCTTGATTAGACTCCTAGCACCTGGCTAGTTTCTAACATGTTTTGTGCAGC
ACAGTTTTTAATAAATGCTTGTTACATTCA

A reference map of the human binary protein interactome
Nature 580 (7803), 402-408 (2020)

CTGCGCGCTCGGGCTGGCTCGGCGGCTGCGGCGGGCGGGCAGGCGGGCAGGCCGGCAGGCGGGTGCGCGGAGGGCTGGTG
CCCCGCAGCAGGTGGGCGGGGTGCGGTTGGCGGCGGCGGCTGGGCCGGGGCTGCCGGCTGCGCTCGGGCCGTGCGCGGC
GGCCGTGCGGGCACGCCATGGACTTCAACATGAAGAAGCTGGCGTCGGACGCGGGCATCTTCTTCACCCGGGCGGTGCAG
TTCACGGAGGAGAAATTTGGCCAGGCTGAGAAGACTGAGCTTGATGCCCACCTTTGAAAACCTTCTGGCCCCGGGCAGACAG
CACCAAGAACTGGACAGAGAAGATCTTGAGGCAGACAGAGGTGCTGCTGCAGCCCAACCCAGTGCCCGAGTGGAGGAGT
TCCTGTATGAGAAGCTGGACAGGAAGGTCCCCCAAGGGTCACCAACGGGGAGCTGCTGGCTCAGTACATGGCAGACGCG
GCCAGTGAGCTGGGGCCGACCACCCCTATGGGAAGACACTGATCAAGGTGGCAGAAGCTGAAAAGCAACTGGGAGCCGC
GGAGAGGGATTTATCCACACGGCCTCCATCAGCTTCTCACCCTTGCGCAACTTCTTGAGGGGGACTGGAAGACCA
TCTCGAAGGAGAGGCGGCTCCTCCAAAACCGGCTCTGGACTTGATGCTGCAAAGCGAGGCTGAAGAAGGCCAAGGCT
GCAGAAGCCAAAGCCACGAGGTGCCTGACTTTCAGGAGACTAGACCTCGTAATTACATTCTCTCGGCCAGCGCTCCGC
GCTCTGGAATGATGAAGTGACAAGGCCGAGCAGGAGCTCCGCGTGGCCCAGACAGAGTTTGACCGGCAAGCAGAAGTGA
CCCGTCTCTTGCTGGAGGGAATCAGTAGCACTCAGTGAACCACCTGCGCTGCCTCCACGAGTTCGTCAAGTCTCAGACA
ACCTACTACGCACAGTGCTACCGCCACATGCTGGACTTGACAGAAGCAGCTGGGCAGATTTCCCGGCACCTTCGTGGGCAC
CACAGAGCCCGCTCCCCACCCCTGAGCAGCACCTCACCCACCACTGCTGCGGCCACTATGCCTGTGGTGCCCTCTGTGG
CCAGCCTGGCCCTCCGGGGGAGGCCTCGCTCTGCCTGGAAGAGGTGGCCCCCTGCCAGTGGGACCCGCAAAGCTCGG
GTGCTCTATGACTACGAGGCAGCCGACAGCAGTGAGCTGGCCCTGCTGGCTGATGAGCTCATCACTGTCTACAGCCTGCC
TGGCATGGACCCTGACTGGCTCATTGGCGAGAGAGGCAACAAGAAGGGCAAGGTCCCTGTACCTACTTGGAAGTGTCTCA
GCTAGCTCAAGCCAAGTCCAGCGGCCGAGTCTTCACTCTCCACACTCACTTTTTATCTGGTGTTTTTACTTCTGCCTG
CGTTTGCTCTCTAGCCAATAAACCGTCCTTGTGTGCGAGTCACCTGGGCTCCTGTGAGGGCCTGGCCCTGAGGGTGGTAA
AGGGAAAGGTAGACTCACCTCTGCCCCACTCTTCCACAGAGTGAGCAGGGGCCCTGTGGCTGCCCCGGCCCCAGCTCT
CTAGTTGGGAAGAAGTGACGCCCTCCCTGTCTTCTGCGGGCCTGTGCCTCTCAGAGGGCAGTGTGTTCCCTGGACATGA
AGCCGCACAAGGAACGTTTTATTCTTAAGAAAAAGTTTCCTAA

Endophilin B2 facilitates endosome maturation in response to growth factor
stimulation, autophagy induction, and influenza A virus infection
J Biol Chem 292 (24), 10097-10111 (2017)

CTGCGCGCTCGGGCTGGCTCGGCGGCTGCGGCGGGCGGGCAGGCGGGCAGGCCGGCAGGCGGGTGCGCGGAGGGCTGGTG
CCCCGCAGCAGGTGGGCGGGGTGCGGTTGGCGGCGGCGGCTGGGCCGGGGGCTGCCGGCTGCGCTCGGGCCGTGCGCGGC
GGCCGTGCGGGCAGCCATGGACTTCAACATGAAGAAGCTGGCGTCGGACGCGGGCATCTTCTTCACCCGGGCGGTGCAG
TTCACGGAGGAGAAATTTGGCCAGGCTGAGAAGACTGAGCTTGATGCCCACCTTTGAAAACCTTCTGGCCCGGCAGACAG
CACCAAGAACTGGACAGAGAAGATCTTGAGGCAGACAGAGGTGCTGCTGCAGCCCAACCCCACTGCCGAGTGGAGGAGT
TCCTGTATGAGAAGCTGGACAGGAAGGTCCCCCTAAGGGTCACCAACGGGGAGCTGCTGGCTCAGTACATGGCAGACGCG
GCCAGTGAGCTGGGGCCGACCACCCCTATGGGAAGACACTGATCAAGGTGGCAGAAGCTGAAAAGCAACTGGGAGCCGC
GGAGAGGGATTTTATCCACACGGCCTCCATCAGCTTCTCACCCTTGCGCAACTTCTGGAGGGGGACTGGAAGACCA
TCTCGAAGGAGAGGCGGCTCCTCCAAAACCGCGTCTGGACTTGATGCCTGCAAAGCGAGGCTGAAGAAGGCCAAGGCT
GCAGAAGCCAAAGCCACGACGGTGCCTGACTTTCAGGAGACTAGACCTCGTAATTACATTCTCTCGGCCAGCGCCTCCGC
GCTCTGGAATGATGAAGTGGACAAGGCCGAGCAGGAGCTCCGCGTGGCCAGACAGAGTTTGACCGGCAAGCAGAAGTGA
CCCGTCTCTTGCTGGAGGGAATCAGTAGCACTCAGTGAACCACCTGCGCTGCCTCCACGAGTTTCGTCAAGTCTCAGACA
ACCTACTACGCACAGTGCTACCGCCACATGCTGGACTTGACAGAAGCAGCTGGGCAGATTTCCCGGCACCTTCGTGGGCAC
CACAGAGCCCCCTCCCCACCCCTGAGCAGCACCTCACCCACCACTGCTGCGGCCACTATGCCTGTGGTGCCCTCTGTGG
CCAGCCTGGCCCTCCGGGGGAGGCCTCGCTCTGCCTGGAAGAGGTGGCCCCCTGCCAGTGGGACCCGCAAAGCTCGG
GTGCTCTATGACTACGAGGCAGCCGACAGCAGTGAGCTGGCCCTGCTGGCTGATGAGCTCATCACTGTCTACAGCCTGCC
TGGCATGGACCCTGACTGGCTCATTGGCGAGAGAGGCAACAAGAAGGGCAAGGTCCCTGTACCTACTTGAACTGCTCA
GCTAGCTCAAGCCAAGTCCAGCGGCCGAGTCTTCACCTCTCCACACTCACTTTTATCTGGTGTTTTTACTTCTGCCTG
CGTTTGCTCTCTAGCCAATAAACCGTCCTTGTGTGCGAGTCACCTGGGCTCCTGTGAGGGCCTGGCCCTGAGGGTGGTAA
AGGGAAGGTAGACTCACCTCTGCCCCACTCTTCCACAGAGTGAGCAGGGGCCCTGTGGCTGCCCCGGCCCCAGCTCT
CTAGTTGGGAAGAAGTGACGCCCTCCCTGTCTTCTGCGGGGCTGTGCCTCTCAGAGGGCAGTGCTGTTCTGGACATGA
AGCCGCACAAGGAACGTTTTATTCTAAGAAAAAGTTTCCTAAA

Endophilin B2 promotes inner mitochondrial membrane degradation by forming heterodimers with Endophilin B1 during mitophagy

Sci Rep 6, 25153 (2016)

CTGCGCGCTCGGGCTGGCTCGGCGGCTGCGGCGGGCGGGCAGGCGGGCAGGCCGGCAGGCGGGTGCGCGGAGGGCTGGTG
CCCCGCAGCAGGTGGGCGGGGTGCGGTTGGCGGCGGCGGCTGGGCCGGGGGCTGCCGGCTGCGCTCGGGCCGTGCGCGGC
GGCCGTGCGGGCAGCCATGGACTTCAACATGAAGAAGCTGGCGTCGGACGCGGGCATCTTCTTCACCCGGGCGGTGCAG
TTCACGGAGGAGAAATTTGGCCAGGCTGAGAAGACTGAGCTTGATGCCCACCTTTGAAAACCTTCTGGCCCGGCAGACAG
CACCAAGAACTGGACAGAGAAGATCTTGAGGCAGACAGAGGTGCTGCTGCAGCCCAACCCCACTGCCGAGTGGAGGAGT
TCCTGTATGAGAAGCTGGACAGGAAGGTCCCCCTAAGGGTCACCAACGGGGAGCTGCTGGCTCAGTACATGGCAGACGCG
GCCAGTGAGCTGGGGCCGACCACCCCTATGGGAAGACACTGATCAAGGTGGCAGAAGCTGAAAAGCAACTGGGAGCCGC
GGAGAGGGATTTTATCCACACGGCCTCCATCAGCTTCTCACCCTTGCGCAACTTCTGGAGGGGGACTGGAAGACCA
TCTCGAAGGAGAGGCGGCTCCTCCAAAACCGCGTCTGGACTTGATGCCTGCAAAGCGAGGCTGAAGAAGGCCAAGGCT
GCAGAAGCCAAAGCCACGACGGTGCCTGACTTTCAGGAGACTAGACCTCGTAATTACATTCTCTCGGCCAGCGCCTCCGC
GCTCTGGAATGATGAAGTGGACAAGGCCGAGCAGGAGCTCCGCGTGGCCAGACAGAGTTTGACCGGCAAGCAGAAGTGA
CCCGTCTCTTGCTGGAGGGAATCAGTAGCACTCAGTGAACCACCTGCGCTGCCTCCACGAGTTTCGTCAAGTCTCAGACA
ACCTACTACGCACAGTGCTACCGCCACATGCTGGACTTGACAGAAGCAGCTGGGCAGATTTCCCGGCACCTTCGTGGGCAC
CACAGAGCCCCCTCCCCACCCCTGAGCAGCACCTCACCCACCACTGCTGCGGCCACTATGCCTGTGGTGCCCTCTGTGG
CCAGCCTGGCCCTCCGGGGGAGGCCTCGCTCTGCCTGGAAGAGGTGGCCCCCTGCCAGTGGGACCCGCAAAGCTCGG
GTGCTCTATGACTACGAGGCAGCCGACAGCAGTGAGCTGGCCCTGCTGGCTGATGAGCTCATCACTGTCTACAGCCTGCC
TGGCATGGACCCTGACTGGCTCATTGGCGAGAGAGGCAACAAGAAGGGCAAGGTCCCTGTACCTACTTGAACTGCTCA
GCTAGCTCAAGCCAAGTCCAGCGGCCGAGTCTTCACCTCTCCACACTCACTTTTATCTGGTGTTTTTACTTCTGCCTG
CGTTTGCTCTCTAGCCAATAAACCGTCCTTGTGTGCGAGTCACCTGGGCTCCTGTGAGGGCCTGGCCCTGAGGGTGGTAA
AGGGAAGGTAGACTCACCTCTGCCCCACTCTTCCACAGAGTGAGCAGGGGCCCTGTGGCTGCCCCGGCCCCAGCTCT
CTAGTTGGGAAGAAGTGACGCCCTCCCTGTCTTCTGCGGGGCTGTGCCTCTCAGAGGGCAGTGCTGTTCTGGACATGA
AGCCGCACAAGGAACGTTTTATTCTAAGAAAAAGTTTCCTAAA

An inter-species protein-protein interaction network across vast evolutionary distance

Mol Syst Biol 12 (4), 865 (2016)

CTGCGCGCTCGGGCTGGCTCGGCGGCTGCGGCGGGCGGGCAGGCGGGCAGGCCGGCAGGCGGGTGCGCGGAGGGCTGGTG
CCCCGCAGCAGGTGGGCGGGGTGCGGTTGGCGGCGGCGGCTGGGCCGGGGGCTGCCGGCTGCGCTCGGGCCGTGCGCGGC
GGCCGTGCGGGCAGCCATGGACTTCAACATGAAGAAGCTGGCGTCGGACGCGGGCATCTTCTTCACCCGGGCGGTGCAG
TTCACGGAGGAGAAATTTGGCCAGGCTGAGAAGACTGAGCTTGATGCCCACTTTGAAAACCTTCTGGCCCGGGCAGACAG
CACCAAGAACTGGACAGAGAAGATCTTGAGGCAGACAGAGGTGCTGCTGCAGCCCAACCCCACTGCCCGAGTGGAGGAGT
TCCTGTATGAGAAGCTGGACAGGAAGGTCCCCTCAAGGGTCACCAACGGGGAGCTGCTGGCTCAGTACATGGCAGACGCG
GCCAGTGAGCTGGGGCCGACCACCCCTATGGGAAGACACTGATCAAGGTGGCAGAAGCTGAAAAGCAACTGGGAGCCGC
GGAGAGGGATTTTATCCACACGGCCTCCATCAGCTTCTCACCCTTGCGCAACTTCTGGAGGGGGACTGGAAGACCA
TCTCGAAGGAGAGGCGGCTCCTCCAAAACCGCGTCTGGACTTGATGCCTGCAAAGCGAGGCTGAAGAAGGCCAAGGCT
GCAGAAGCCAAAGCCACGACGGTGCCTGACTTTCAGGAGACTAGACCTCGTAATTACATTCTCTCGGCCAGCGCCTCCGC
GCTCTGGAATGATGAAGTGGACAAGGCCGAGCAGGAGCTCCGCGTGCGCCAGACAGAGTTTGACCGGCAAGCAGAAGTGA
CCCGTCTCTTGCTGGAGGGAATCAGTAGCACTCACGTGAACCACCTGCGCTGCCTCCACGAGTTTCGTCAAGTCTCAGACA
ACCTACTACGCACAGTGCTACCGCCACATGCTGGACTTGCGAGAAGCAGCTGGGCAGATTTCCCGGCACCTTCGTGGGCAC
CACAGAGCCCGCTCCCCACCCCTGAGCAGCACCTCACCCACCACTGCTGCGGCCACTATGCCTGTGGTGCCCTCTGTGG
CCAGCCTGGCCCTCCGGGGGAGGCCTCGCTCTGCCTGGAAGAGGTGGCCCCCCTGCCAGTGGGACCCGCAAAGCTCGG
GTGCTCTATGACTACGAGGCAGCCGACAGCAGTGAGCTGGCCCTGCTGGCTGATGAGCTCATCACTGTCTACAGCCTGCC
TGGCATGGACCCTGACTGGCTCATTGGCGAGAGAGGCAACAAGAAGGGCAAGGTCCCTGTACCTACTTGGAAGTGTCTCA
GCTAGCTCAAGCCAAGTCCAGCGGCCGAGTCTTACCTCTCCACACTCACTTTTTATCTGGTGTTTTTACTTCTGCCTG
CGTTTGCTCTCTAGCCAATAAACCGTCCTTGTGTGCGAGTCACCTGGGCTCCTGTGAGGGCCTGGCCCTGAGGGTGGTAA
AGGGAAAGGTAGACTCACCTCTGCCCCACTCTTCCACAGAGTGAGCAGGGGCCCTGTGGCTGCCCGGCCCCAGCTCT
CTAGTTGGGAAGAAGTGACGCCCTCCCTGTCTTCTGCGGGGCTGTGCCTCTCAGAGGGCAGTGCTGTTCTGGACATGA
AGCCGCACAAGGAACGTTTTATTCTAAGAAAAAGTTTCTTAA

Pooled-matrix protein interaction screens using Barcode Fusion Genetics

Mol Syst Biol 12 (4), 863 (2016)

CTGCGCGCTCGGGCTGGCTCGGCGGCTGCGGCGGGCGGGCAGGCGGGCAGGCCGGCAGGCGGGTGCGCGGAGGGCTGGTG
CCCCGCAGCAGGTGGGCGGGGTGCGGTTGGCGGCGGCGGCTGGGCCGGGGGCTGCCGGCTGCGCTCGGGCCGTGCGCGGC
GGCCGTGCGGGCAGCCATGGACTTCAACATGAAGAAGCTGGCGTCGGACGCGGGCATCTTCTTCACCCGGGCGGTGCAG
TTCACGGAGGAGAAATTTGGCCAGGCTGAGAAGACTGAGCTTGATGCCCACTTTGAAAACCTTCTGGCCCGGGCAGACAG
CACCAAGAACTGGACAGAGAAGATCTTGAGGCAGACAGAGGTGCTGCTGCAGCCCAACCCCACTGCCCGAGTGGAGGAGT
TCCTGTATGAGAAGCTGGACAGGAAGGTCCCCTCAAGGGTCACCAACGGGGAGCTGCTGGCTCAGTACATGGCAGACGCG
GCCAGTGAGCTGGGGCCGACCACCCCTATGGGAAGACACTGATCAAGGTGGCAGAAGCTGAAAAGCAACTGGGAGCCGC
GGAGAGGGATTTTATCCACACGGCCTCCATCAGCTTCTCACCCTTGCGCAACTTCTGGAGGGGGACTGGAAGACCA
TCTCGAAGGAGAGGCGGCTCCTCCAAAACCGCGTCTGGACTTGATGCCTGCAAAGCGAGGCTGAAGAAGGCCAAGGCT
GCAGAAGCCAAAGCCACGACGGTGCCTGACTTTCAGGAGACTAGACCTCGTAATTACATTCTCTCGGCCAGCGCCTCCGC
GCTCTGGAATGATGAAGTGGACAAGGCCGAGCAGGAGCTCCGCGTGCGCCAGACAGAGTTTGACCGGCAAGCAGAAGTGA
CCCGTCTCTTGCTGGAGGGAATCAGTAGCACTCACGTGAACCACCTGCGCTGCCTCCACGAGTTTCGTCAAGTCTCAGACA
ACCTACTACGCACAGTGCTACCGCCACATGCTGGACTTGCGAGAAGCAGCTGGGCAGATTTCCCGGCACCTTCGTGGGCAC
CACAGAGCCCGCTCCCCACCCCTGAGCAGCACCTCACCCACCACTGCTGCGGCCACTATGCCTGTGGTGCCCTCTGTGG
CCAGCCTGGCCCTCCGGGGGAGGCCTCGCTCTGCCTGGAAGAGGTGGCCCCCCTGCCAGTGGGACCCGCAAAGCTCGG
GTGCTCTATGACTACGAGGCAGCCGACAGCAGTGAGCTGGCCCTGCTGGCTGATGAGCTCATCACTGTCTACAGCCTGCC
TGGCATGGACCCTGACTGGCTCATTGGCGAGAGAGGCAACAAGAAGGGCAAGGTCCCTGTACCTACTTGGAAGTGTCTCA
GCTAGCTCAAGCCAAGTCCAGCGGCCGAGTCTTACCTCTCCACACTCACTTTTTATCTGGTGTTTTTACTTCTGCCTG
CGTTTGCTCTCTAGCCAATAAACCGTCCTTGTGTGCGAGTCACCTGGGCTCCTGTGAGGGCCTGGCCCTGAGGGTGGTAA

AGGGAAAGGTAGACTCACCTCTGCCCCACTCTTCCACAGAGTGAGCAGGGGCCCTGTGGCTGCCCCGGCCCCAGCTCT
CTAGTTGGGAAGAAGTGACGCCCTCCCTGTCTTCTGCGGGGCCTGTGCCTCTCAGAGGGCAGTGCTGTTCTGGACATGA
AGCCGCACAAGGAACGTTTTATTCTAAGAAAAAGTTTCTTAA

Network organization of the human autophagy system

Nature 466 (7302), 68-76 (2010)

CTGCGCGCTCGGGCTGGCTCGGCGGCTGCGGCGGGCGGGCAGGCGGGCAGGCCGGCAGGCGGGTGCGCGAGGGCTGGTG
CCCCGCAGCAGGTGGGCGGGGTGCGGTTGGCGGCGGCGGCTGGGCCGGGGCTGCCGGCTGCGCTCGGGCCGTGCGCGGC
GGCCGTGCGGGCAGCCATGGAAGTTCAACATGAAGAAGCTGGCGTGGACGCGGGCATCTTCTTACCCGGGCGGTGCAG
TTCACGGAGGAGAAATTTGGCCAGGCTGAGAAGACTGAGCTTGATGCCACTTTGAAAACCTTCTGGCCCCGGGCAGACAG
CACCAAGAACTGGACAGAGAAGATCTTGAGGCAGACAGAGGTGCTGCTGCAGCCCAACCCAGTGCCCGAGTGAGGAGT
TCCTGTATGAGAAGCTGGACAGGAAGGTCCCTCAAGGGTCACCAACGGGGAGCTGCTGGCTCAGTACATGGCAGACGCG
GCCAGTGAGCTGGGGCCGACACCCCTATGGGAAGACACTGATCAAGGTGGCAGAAGCTGAAAAGCAACTGGGAGCCGC
GGAGAGGGATTTTATCCACACGGCCTCCATCAGCTTCTCTCACACCCTTGCGCAACTTCTGGAGGGGGACTGGAAGACCA
TCTCGAAGGAGAGGCGGCTCCTCCAAAACCGGCTGCTGGACTTGATGCTGCAAAGCGAGGCTGAAGAAGGCCAAGGCT
GCAGAAGCCAAAGCCACGACGGTGCCTGACTTTCAGGAGACTAGACCTCGTAATTACATTCTCTCGGCCAGCGCTCCGC
GCTCTGGAATGATGAAGTGACAAGGCCGAGCAGGAGCTCCGCGTGGCCCAGACAGAGTTTGACCGGCAAGCAGAAGTGA
CCCGTCTCTTGCTGGAGGGAATCAGTAGCACTCACGTGAACCACCTGCGCTGCCTCCACGAGTTCGTCAAGTCTCAGACA
ACCTACTACGCACAGTGCTACCGCCACATGCTGGACTTGACAGAAGCAGCTGGGCAGATTTCCCGGCACCTTCGTGGGCAC
CACAGAGCCCGCTCCCCACCCCTGAGCAGCACCTCACCCACCACTGCTGCGGCCACTATGCCTGTGGTGCCCTCTGTGG
CCAGCCTGGCCCTCCGGGGGAGGCCTCGCTCTGCCTGGAAGAGGTGGCCCCCTGCCAGTGGGACCCGCAAAGCTCGG
GTGCTCTATGACTACGAGGCAGCCGACAGCAGTGAGCTGGCCCTGCTGGCTGATGAGCTCATCACTGTCTACAGCCTGCC
TGGCATGGACCCTGACTGGCTCATTGGCGAGAGAGGCAACAAGAAGGGCAAGTCCCTGTACCTACTTGGAAGTGTCTCA
GCTAGCTCAAGCCAAAGTCCAGCGGCCGAGTCTTCACTCTCCACACTCACTTTTATCTGGTGTTTTTACTTCTGCCTG
CGTTTGCTCTTAGCCAATAAACCGTCCTTGTGTGCGAGTCACCTGGGCTCCTGTGAGGGCCTGGCCCTGAGGGTGGTAA
AGGGAAAGGTAGACTCACCTCTGCCCCACTCTTCCACAGAGTGAGCAGGGGCCCTGTGGCTGCCCCGGCCCCAGCTCT
CTAGTTGGGAAGAAGTGACGCCCTCCCTGTCTTCTGCGGGGCCTGTGCCTCTCAGAGGGCAGTGCTGTTCTGGACATGA
AGCCGCACAAGGAACGTTTTATTCTAAGAAAAAGTTTCTTAA

SPAS-1 (stimulator of prostatic adenocarcinoma-specific T cells)/SH3GLB2: A

prostate tumor antigen identified by CTLA-4 blockade

Proc Natl Acad Sci U S A 105 (9), 3509-3514 (2008)

CTGCGCGCTCGGGCTGGCTCGGCGGCTGCGGCGGGCGGGCAGGCGGGCAGGCCGGCAGGCGGGTGCGCGAGGGCTGGTG
CCCCGCAGCAGGTGGGCGGGGTGCGGTTGGCGGCGGCGGCTGGGCCGGGGCTGCCGGCTGCGCTCGGGCCGTGCGCGGC
GGCCGTGCGGGCAGCCATGGAAGTTCAACATGAAGAAGCTGGCGTGGACGCGGGCATCTTCTTACCCGGGCGGTGCAG
TTCACGGAGGAGAAATTTGGCCAGGCTGAGAAGACTGAGCTTGATGCCACTTTGAAAACCTTCTGGCCCCGGGCAGACAG
CACCAAGAACTGGACAGAGAAGATCTTGAGGCAGACAGAGGTGCTGCTGCAGCCCAACCCAGTGCCCGAGTGAGGAGT
TCCTGTATGAGAAGCTGGACAGGAAGGTCCCTCAAGGGTCACCAACGGGGAGCTGCTGGCTCAGTACATGGCAGACGCG
GCCAGTGAGCTGGGGCCGACACCCCTATGGGAAGACACTGATCAAGGTGGCAGAAGCTGAAAAGCAACTGGGAGCCGC
GGAGAGGGATTTTATCCACACGGCCTCCATCAGCTTCTCTCACACCCTTGCGCAACTTCTGGAGGGGGACTGGAAGACCA
TCTCGAAGGAGAGGCGGCTCCTCCAAAACCGGCTGCTGGACTTGATGCTGCAAAGCGAGGCTGAAGAAGGCCAAGGCT
GCAGAAGCCAAAGCCACGACGGTGCCTGACTTTCAGGAGACTAGACCTCGTAATTACATTCTCTCGGCCAGCGCTCCGC
GCTCTGGAATGATGAAGTGACAAGGCCGAGCAGGAGCTCCGCGTGGCCCAGACAGAGTTTGACCGGCAAGCAGAAGTGA
CCCGTCTCTTGCTGGAGGGAATCAGTAGCACTCACGTGAACCACCTGCGCTGCCTCCACGAGTTCGTCAAGTCTCAGACA
ACCTACTACGCACAGTGCTACCGCCACATGCTGGACTTGACAGAAGCAGCTGGGCAGATTTCCCGGCACCTTCGTGGGCAC
CACAGAGCCCGCTCCCCACCCCTGAGCAGCACCTCACCCACCACTGCTGCGGCCACTATGCCTGTGGTGCCCTCTGTGG
CCAGCCTGGCCCTCCGGGGGAGGCCTCGCTCTGCCTGGAAGAGGTGGCCCCCTGCCAGTGGGACCCGCAAAGCTCGG
GTGCTCTATGACTACGAGGCAGCCGACAGCAGTGAGCTGGCCCTGCTGGCTGATGAGCTCATCACTGTCTACAGCCTGCC

TGGCATGGACCCTGACTGGCTCATTGGCGAGAGAGGCAACAAGAAGGGCAAGGTCCCTGTACCTACTTGAACTGCTCA
GCTAGCTCAAGCCAAGTCCAGCGGCCGAGTCTTACCTCTCCACACTCACTTTTTATCTGGTGTTTTTACTTCTGCCTG
CGTTTGCTCTCTAGCCAATAAACCGTCCTTGTGTGCGAGTCACCTGGGCTCCTGTACGGGCCTGGCCCTGAGGGTGGTAA
AGGGAAGGTAGACTCACCTCTGCCCCACTCTTCCACAGAGTGAGCAGGGGCCCTGTGGCTGCCCCGGCCCCCAGCTCT
CTAGTTGGGAAGAAGTGACGCCCTCCCTGTCTTCTGCGGGCCTGTGCCTCTCAGAGGGCAGTGCTGTTCTGGACATGA
AGCCGCACAAGGAACGTTTTATTCTTAAGAAAAAGTTTCCTAAA

RRIG1 mediates effects of retinoic acid receptor beta2 on tumor cell growth and
gene expression through binding to and inhibition of RhoA

Cancer Res 66 (14), 7111-7118 (2006)

CTGCGCGCTCGGGCTGGCTCGGCGGCTGCGGCGGGCGGGCAGGCGGGCAGGCCGGCAGGCGGGTGCGCGGAGGGCTGGTG
CCCCGCAGCAGGTGGGCGGGGTGCGGTTGGCGGCGGCGGCTGGGCCGGGGCTGCCGGCTGCGCTCGGGCCGTGCGCGGC
GGCCGTGCGGGCACGCCATGGACTTCAACATGAAGAAGCTGGCGTGGACGCGGGCATCTTCTTACCCGGGCGGTGCAG
TTCACGGAGGAGAAAATTTGGCCAGGCTGAGAAGACTGAGCTTGATGCCCACCTTGAAAACCTTCTGGCCCGGCAGACAG
CACCAAGAACTGGACAGAGAAGATCTTGAGGCAGACAGAGGTGCTGCTGCAGCCCAACCCAGTGCCCGAGTGAGGAGT
TCCTGTATGAGAAGCTGGACAGGAAGGTCCCCCTAAGGGTCACCAACGGGGAGCTGCTGGCTCAGTACATGGCAGACGCG
GCCAGTGAGCTGGGGCCGACCACCCCTATGGGAAGACACTGATCAAGGTGGCAGAAGCTGAAAAGCAACTGGGAGCCGC
GGAGAGGGATTTATCCACACGGCCTCCATCAGCTTCTCTCACACCCTTGCGCAACTTCTTGAGGGGGACTGGAAGACCA
TCTCGAAGGAGAGGCGGCTCCTCCAAAACCGCGTCTGGACTTGATGCCTGCAAAGCGAGGCTGAAGAAGGCCAAGGCT
GCAGAAGCCAAAGCCACGACGGTGCTGACTTTCAGGAGACTAGACCTCGTAATTACATTCTCTCGGCCAGCGCTCCGC
GCTCTGGAATGATGAAGTGACAAGGCCGAGCAGGAGCTCCGCGTGGCCCAGACAGAGTTTGACCGGCAAGCAGAAGTGA
CCCGTCTCTTGCTGGAGGGAATCAGTAGCACTCACGTGAACCACCTGCGCTGCCTCCACGAGTTTCGTCAAGTCTCAGACA
ACCTACTACGCACAGTGCTACCGCCACATGCTGGACTTGACAGAAGCAGCTGGGCAGATTTCCCGGCACCTTCGTGGGCAC
CACAGAGCCCGCTCCCCACCCCTGAGCAGCACCTCACCCACCACTGCTGCGGCCACTATGCCTGTGGTGCCCTCTGTGG
CCAGCCTGGCCCTCCGGGGGAGGCCTCGCTCTGCCTGGAAGAGGTGGCCCCCCTGCCAGTGGGACCCGCAAAGCTCGG
GTGCTCTATGACTACGAGGCAGCCGACAGCAGTGAGCTGGCCCTGCTGGCTGATGAGCTCATCACTGTCTACAGCCTGCC
TGGCATGGACCCTGACTGGCTCATTGGCGAGAGAGGCAACAAGAAGGGCAAGGTCCCTGTACCTACTTGAACTGCTCA
GCTAGCTCAAGCCAAGTCCAGCGGCCGAGTCTTACCTCTCCACACTCACTTTTTATCTGGTGTTTTTACTTCTGCCTG
CGTTTGCTCTCTAGCCAATAAACCGTCCTTGTGTGCGAGTCACCTGGGCTCCTGTACGGGCCTGGCCCTGAGGGTGGTAA
AGGGAAGGTAGACTCACCTCTGCCCCACTCTTCCACAGAGTGAGCAGGGGCCCTGTGGCTGCCCCGGCCCCCAGCTCT
CTAGTTGGGAAGAAGTGACGCCCTCCCTGTCTTCTGCGGGCCTGTGCCTCTCAGAGGGCAGTGCTGTTCTGGACATGA
AGCCGCACAAGGAACGTTTTATTCTTAAGAAAAAGTTTCCTAAA

Regulation of alternative splicing by SRp86 and its interacting proteins

Mol Cell Biol 23 (21), 7437-7447 (2003)

CTGCGCGCTCGGGCTGGCTCGGCGGCTGCGGCGGGCGGGCAGGCGGGCAGGCCGGCAGGCGGGTGCGCGGAGGGCTGGTG
CCCCGCAGCAGGTGGGCGGGGTGCGGTTGGCGGCGGCGGCTGGGCCGGGGCTGCCGGCTGCGCTCGGGCCGTGCGCGGC
GGCCGTGCGGGCACGCCATGGACTTCAACATGAAGAAGCTGGCGTGGACGCGGGCATCTTCTTACCCGGGCGGTGCAG
TTCACGGAGGAGAAAATTTGGCCAGGCTGAGAAGACTGAGCTTGATGCCCACCTTGAAAACCTTCTGGCCCGGCAGACAG
CACCAAGAACTGGACAGAGAAGATCTTGAGGCAGACAGAGGTGCTGCTGCAGCCCAACCCAGTGCCCGAGTGAGGAGT
TCCTGTATGAGAAGCTGGACAGGAAGGTCCCCCTAAGGGTCACCAACGGGGAGCTGCTGGCTCAGTACATGGCAGACGCG
GCCAGTGAGCTGGGGCCGACCACCCCTATGGGAAGACACTGATCAAGGTGGCAGAAGCTGAAAAGCAACTGGGAGCCGC
GGAGAGGGATTTATCCACACGGCCTCCATCAGCTTCTCTCACACCCTTGCGCAACTTCTTGAGGGGGACTGGAAGACCA
TCTCGAAGGAGAGGCGGCTCCTCCAAAACCGCGTCTGGACTTGATGCCTGCAAAGCGAGGCTGAAGAAGGCCAAGGCT
GCAGAAGCCAAAGCCACGACGGTGCTGACTTTCAGGAGACTAGACCTCGTAATTACATTCTCTCGGCCAGCGCTCCGC
GCTCTGGAATGATGAAGTGACAAGGCCGAGCAGGAGCTCCGCGTGGCCCAGACAGAGTTTGACCGGCAAGCAGAAGTGA
CCCGTCTCTTGCTGGAGGGAATCAGTAGCACTCACGTGAACCACCTGCGCTGCCTCCACGAGTTTCGTCAAGTCTCAGACA
ACCTACTACGCACAGTGCTACCGCCACATGCTGGACTTGACAGAAGCAGCTGGGCAGATTTCCCGGCACCTTCGTGGGCAC

CACAGAGCCCGCCTCCCCACCCCTGAGCAGCACCTACCCACCACTGCTGCGGCCACTATGCCTGTGGTGCCCTCTGTGG
 CCAGCCTGGCCCTCCGGGGGAGGCCTCGCTCTGCCTGGAAGAGGTGGCCCCCTGCCAGTGGGACCCGCAAAGCTCGG
 GTGCTCTATGACTACGAGGCAGCCGACAGCAGTGAGCTGGCCCTGCTGGCTGATGAGCTCATCACTGTCTACAGCCTGCC
 TGGCATGGACCCTGACTGGCTCATTGGCGAGAGAGGCAACAAGAAGGGCAAGGTCCCTGTACCTACTTGGAAGTGTCA
 GCTAGCTCAAGCCAAGTCCAGCGGCCGAGTCTTCACTCTCCACACTCACTTTTTATCTGGTGTTTTTACTTCTGCCTG
 CGTTTGCTCTCTAGCCAATAAACCGTCCTTGTGTGCGAGTCACTGGGCTCCTGTGAGGGCCTGGCCCTGAGGGTGGTAA
 AGGGAAAGGTAGACTCACCTCTGCCCCACTCTTCCACAGAGTGAGCAGGGGCCCTGTGGCTGCCCCGGCCCCAGCTCT
 CTAGTTGGGAAGAAGTGCAGCCCTCCCTGTCTTCTGCGGGCCTGTGCCTCTCAGAGGGCAGTGTCTTCTGGACATGA
 AGCCGCACAAGGAACGTTTTATTCTAAGAAAAAGTTTCTTAA

SH3GLB, a new endophilin-related protein family featuring an SH3 domain
 Genomics 71 (2), 222-234 (2001)

CTGCGCGCTCGGGCTGGCTCGGCGGCTGCGCGGGCGGGCAGGCGGGCAGGCCGGCAGGCGGGTGCGCGAGGGCTGGTG
 CCCCCGACGAGGTGGGCGGGGTGCGGTTGGCGGCGGCGGCTGGGCCGGGGCTGCCGGCTGCGCTCGGGCCGTGCGCGGC
 GGCCGTGCGGGCAGCCATGGACTTCAACATGAAGAAGCTGGCGTGGACGCGGGCATCTTCTTACCCGGGCGGTGCAG
 TTCACGGAGGAGAAATTTGGCCAGGCTGAGAAGACTGAGCTTGATGCCCCTTTGAAAACCTTCTGGCCCGGCAGACAG
 CACCAAGAACTGGACAGAGAAGATCTTGAGGCAGACAGAGGTGCTGCTGCAGCCCAACCCCACTGCCCCAGTGGAGGAGT
 TCCTGTATGAGAAGCTGGACAGGAAGGTCCCCTCAAGGGTCACCAACGGGGAGCTGCTGGCTCAGTACATGGCAGACGCG
 GCCAGTGAGCTGGGGCCGACACCCCTATGGGAAGACACTGATCAAGGTGGCAGAAGCTGAAAAGCAACTGGGAGCCGC
 GGAGAGGGATTTTATCCACACGGCCTCCATCAGTTCCTCACACCCTTGCGCAACTTCTGGAGGGGGACTGGAAGACCA
 TCTCGAAGGAGAGGGCGCTCCTCCAAAACCGCGTCTGGACTTGATGCCTGCAAAGCGAGGCTGAAGAAGGCCAAGGCT
 GCAGAAGCCAAAGCCACGAGCGGTGCCTGACTTTCAGGAGACTAGACCTCGTAATTACATTCTCTCGGCCAGCGCCTCCGC
 GCTCTGGAATGATGAAGTGACAAGGCCGAGCAGGAGCTCCGCGTGGCCCAGACAGAGTTTGACCGGCAAGCAGAAGTGA
 CCCGTCTCTTGCTGGAGGGAATCAGTAGCACTCACGTGAACCACCTGCGCTGCCTCCACGAGTTTCTCAAGTCTCAGACA
 ACCTACTACGCACAGTGCTACCGCCACATGCTGGACTTGCAAGAAGCAGCTGGGCAGATTTCCCGGCACCTTCGTGGGCAC
 CACAGAGCCCGCCTCCCCACCCCTGAGCAGCACCTACCCACCACTGCTGCGGCCACTATGCCTGTGGTGCCCTCTGTGG
 CCAGCCTGGCCCTCCGGGGGAGGCCTCGCTCTGCCTGGAAGAGGTGGCCCCCTGCCAGTGGGACCCGCAAAGCTCGG
 GTGCTCTATGACTACGAGGCAGCCGACAGCAGTGAGCTGGCCCTGCTGGCTGATGAGCTCATCACTGTCTACAGCCTGCC
 TGGCATGGACCCTGACTGGCTCATTGGCGAGAGAGGCAACAAGAAGGGCAAGGTCCCTGTACCTACTTGGAAGTGTCA
 GCTAGCTCAAGCCAAGTCCAGCGGCCGAGTCTTCACTCTCCACACTCACTTTTTATCTGGTGTTTTTACTTCTGCCTG
 CGTTTGCTCTCTAGCCAATAAACCGTCCTTGTGTGCGAGTCACTGGGCTCCTGTGAGGGCCTGGCCCTGAGGGTGGTAA
 AGGGAAAGGTAGACTCACCTCTGCCCCACTCTTCCACAGAGTGAGCAGGGGCCCTGTGGCTGCCCCGGCCCCAGCTCT
 CTAGTTGGGAAGAAGTGCAGCCCTCCCTGTCTTCTGCGGGCCTGTGCCTCTCAGAGGGCAGTGTCTTCTGGACATGA
 AGCCGCACAAGGAACGTTTTATTCTAAGAAAAAGTTTCTTAA

Measuring the T-cell down-regulation of TCR-zeta, ZAP-70 and CD28 in arthritis
 patients: An old tool for new biomarkers

Eur J Immunol 49 (12), 2195-2203 (2019)

ACACTTCGGGTTCTCGGGGAGGAGGGGCTGGAACCCTAGCCCATCGTCAGGACAAAGATGCTCAGGCTGCTCTTGGCTC
 TCAACTTATTCCTTCAATTCAAGTAACAGGGAAACACCTTTGTCCAAGTCCCCTATTTCCCGACCTTCTAAGCCCTTT
 TGGGTGCTGGTGGTGGTTGGTGGAGTCCTGGCTTGCTATAGCTTGCTAGTAACAGTGGCCTTTATTATTTTCTGGGTGAG
 GAGTAAGAGGAGCAGGCTCCTGCACAGTACTACATGAACATGACTCCCCGCCGCCCGGGCCACCCGCAAGCATTACC
 AGCCCTATGCCCCACACGCGACTTCGACGCTATCGCTCCTGACACGGACGCCTATCCAGAAGCCAGCCGGCTGGCAGC
 CCCCATCTGCTCAATATCACTGCTCTGGATAGGAAATGACCGCCATCTCCAGCCGGCCACCTCAGGCCCTGTTGGGCCA
 CCAATGCCAATTTTTCTCGAGTACTAGACCAAATATCAAGATCATTTTGAGACTCTGAAATGAAGTAAAGAGATTTC
 TGTGACAGGCCAAGTCTTACAGTGCCATGGCCACATTCCAATTACCATGTACTTAGTGACTTGACTGAGAAGTTAGGG
 TAGAAAACAAAAAGGAGTGGATTCTGGGAGCCTCTCCCTTTCTCACTCACCTGCACATCTCAGTCAAGCAAAGTGTGG
 TATCCACAGACATTTTAGTTGCAGAAGAAAGGCTAGGAAATCATTCCTTTTGGTTAAATGGGTGTTTAACTTTTGGTTA

GTGGGTAAACGGGGTAAGTTAGAGTAGGGGGAGGGATAGGAAGACATATTTAAAAACCATTAAAAACTGTCTCCCACT
 CATGAAATGAGCCACGTAGTTCCTATTTAATGCTGTTTTCTTTAGTTTAGAAATACATAGACATTGTCTTTTATGAATT
 CTGATCATATTTAGTCATTTTGACCAAATGAGGGATTTGGTCAAATGAGGGATTCCCTCAAAGCAATATCAGGTAAACCA
 AGTTGCTTTCCTCACTCCCTGTGATGAGACTTCAGTGTTAATGTTTACAATATACTTTGAAAGAATAAAATAGTTCTCC
 TACATGAAGAAAGAATATGTCAGGAAATAAGGTCACTTTATGTCAAAATTATTTGAGTACTATGGGACCTGGCGCAGTGG
 CTCATGCTTGAATCCCAGCACTTTGGGAGGCCGAGGTGGGCAGATCACTTGAGATCAGGACCAGCCTGGTCAAGATGGT
 GAAACTCCGTCTGTACTAAAAATACAAAATTTAGCTTGGCCTGGTGGCAGGCACCTGTAATCCCAGCTGCCCAAGAGGCT
 GAGGCATGAGAATCGCTTGAACCTGGCAGGCGGAGGTTCAGTGAGCCGAGATAGTGCCACAGCTCTCCAGCCTGGGCGA
 CAGAGTGAGACTCCATCTCAAAACAACAACAACAACAACAACAACAACAACCACAAAATTATTTGAGTACTGTGAAG
 GATTATTTGTCTAACAGTTCATTCCAATCAGACCAGGTAGGAGCTTTCTCTGTTTCATATGTTTCAGGGTTGCACAGTTGG
 TCTCTTTAATGTGGTGTGGAGATCCAAAGTGGGTGTGGAAAGAGCGTCCATAGGAGAAGTGAGAATACTGTGAAAAAG
 GGATGTTAGCATTCATTAGAGTATGAGGATGAGTCCCAAGAAGGTTCTTTGGAAGGAGGACGAATAGAATGGAGTAATGA
 AATCTTGCCATGTGCTGAGGAGATAGCCAGCATTAGGTGACAATCTTCCAGAAGTGGTCAGGCAGAAGGTGCCCTGGTG
 AGAGCTCCTTTACAGGGACTTTATGTGGTTTAGGGCTCAGAGCTCCAAAACCTCTGGGCTCAGCTGCTCCTGTACCTTGA
 GGTCCATTACATGGGAAAGTATTTTGAATGTGCTTTTTGAAGAGAGCATCAGAGTTCTTAAGGGACTGGGTAAGGCCT
 GACCCTGAAATGACCATGGATATTTTTCTACCTACAGTTTGAGTCAACTAGAATATGCCTGGGGACCTTGAAGAATGGCC
 CTTCACTGGCCCTCACCATTTGTTTCATGCTTCAGTTAATTCAGGTGTTGAAGGAGCTTAGGTTTTAGAGGCACGTAGACT
 TGGTTCAAGTCTCGTTAGTAGTTGAATAGCCTCAGGCAAGTCACTGCCCACCTAAGATGATGGTTCTTCAACTATAAAAT
 GGAGATAATGGTTACAAATGTCTCTTCTATAGTATAATCTCCATAAGGGCATGGCCCAAGTCTGTCTTTGACTCTGCCT
 ATCCCTGACATTTAGTAGCATGCCCGACATAACAATGTAGCTATTGGTATTATTGCCATATAGATAAATTATGTATAAAA
 ATTAACTGGGCAATAGCCTAAGAAGGGGGGAATATTGTAACACAAATTTAAACCCACTACGCAGGGATGAGGTGCTATA
 ATATGAGGACCTTTTAACTTCCATCATTTTCTCTGTTTCTTGAAATAGTTTATCTTGAATGAAATATAAGGCACCTCCCA
 CTTTTATGTATAGAAAGAGGTCTTTTAATTTTTTTTTAATGTGAGAAGGAAGGGAGGAGTAGGAATCTTGAGATTCCAGA
 TCGAAAATACTGTACTTTGGTTGATTTTTAAGTGGGCTTCCATTCCATGGATTAAATCAGTCCCAAGAAGATCAAACCTCA
 GCAGTACTTGGGTGCTGAAGAAGTGTGGATTACCCTGGCAGTGTGCCACTTGCCAGCTTCTTGGGCACACAGAGTTC
 TTCAATCCAAGTTATCAGATTGTATTTGAAAATGACAGAGCTGGAGAGTTTTTTGAAATGGCAGTGGCAAATAAAATAAAT
 ACTTTTTTTTTAAATGGAAAGACTTGATCTATGGTAATAAATGATTTTGTCTTCTGACTGGAAAAATAGGCCTACTAAAGA
 TGAATCACACTTGAGATGTTTCTTACTCACTCTGCACAGAAACAAAGAAGAAATGTTATACAGGGAAGTCCGTTTTCTACT
 ATTAGTATGAACCAAGAAATGGTTCAAAAACAGTGGTAGGAGCAATGCTTTCATAGTTTCAGATATGGTAGTTATGAAGA
 AAACAATGTCATTTGCTGCTATTATTGTAAGAGTCTTATAATTAATGGTACTCCTATAATTTTTGATTGTGAGCTCACCT
 ATTTGGGTAAAGCATGCCAATTTAAAGAGACCAAGTGTATGTACATTATGTTCTACATATTCAGTGATAAAATTACTAAA
 CTACTATATGTCTGCTTTAAATTTGTACTTTAATATTGTCTTTTGGTATTAAGAAAGATATGCTTTCAGAATAGATATGC
 TTCGCTTTGGCAAGGAATTTGGATAGAAGTGTCTATTTAAAGAGGTGTGGGGTAAATCCTTGTATAAATCTCCAGTTTA
 GCCTTTTTTTGAAAAGCTAGACTTTCAAATACTAATTTCACTTCAAGCAGGGTACGTTTCTGGTTTGTGCTTGACTTC
 AGTCACAATTTCTTATCAGACCAATGGCTGACCTCTTTGAGATGTCAGGCTAGGCTTACCTATGTGTTCTGTGTCATGTG
 AATGCTGAGAAGTTTGACAGAGATCCAACCTTCAGCCTTGACCCCATCAGTCCCTCGGGTTAACTAACTGAGCCACCGGTC
 CTCATGGCTATTTAATGAGGGTATTGATGGTTAAATGCATGTCTGATCCCTTATCCAGCCATTTGCACTGCCAGCTGG
 GAACTATACCAGACCTGGATACTGATCCCAAAGTGTTAAATTCAACTACATGCTGGAGATTAGAGATGGTGCCAATAAAG
 GACCCAGAACCAGGATCTTGATTGCTATAGACTTATTAATAATCCAGGTCAAAGAGAGTGACACACACTCTCTCAAGACC
 TGGGGTGAGGGAGTCTGTGTTATCTGCAAGGCCATTTGAGGCTCAGAAAGTCTCTCTTTCCTATAGATATATGCATACTT
 TCTGACATATAGGAATGTATCAGGAATACTCAACCATCACAGGCATGTTTCTACCTCAGGGCCTTTACATGTCCTGTTTA
 CTCTGTCTAGAATGTCCTTCTGTAGATGACCTGGCTTGCTCGTCACCCTTCAGGTCCTTGCTCAAGTGTATCTTCTCC
 CCTAGTTAACTACCCACACCCCTGTCTGCTTTCCTTGCTATTTTTCTCCATAGCATTTTACCATCTCTTACATTAGAC
 ATTTTTCTTATTTATTTGTAGTTTATAAGCTTCATGAGGCAAGTAACCTTTGCTTTGTTTCTTGCTGTATCTCCAGTGCCC
 AGAGCAGTGCCTGGTATATAATAAATATTTATTGACTGAGTGAA

[Association of ICOS and CD28 single nucleotide polymorphisms with pulmonary tuberculosis susceptibility]

ACACTTCGGGTTCTCGGGGAGGAGGGGCTGGAACCCTAGCCCATCGTCAGGACAAAGATGCTCAGGCTGCTCTTGGCTC
TCAACTTATTCCCTTCAATTCAAGTAACAGGGAAACACCTTTGTCCAAGTCCCCTATTTCCCGGACCTTCTAAGCCCTTT
TGGGTGCTGGTGGTGGTTGGTGGAGTCTGGCTTGCTATAGCTTGCTAGTAACAGTGGCCTTTATTATTTTCTGGGTGAG
GAGTAAGAGGAGCAGGCTCCTGCACAGTGAATGACATGACTCCCCGCGCCCCGGGGCCACCCGCAAGCATTACC
AGCCCTATGCCCCACCACGCGACTTCGCAGCCTATCGCTCCTGACACGGACGCCTATCCAGAAGCCAGCCGGCTGGCAGC
CCCCATCTGCTCAATATCACTGCTCTGGATAGGAAATGACCGCCATCTCCAGCCGGCCACCTCAGGCCCTGTTGGGCCA
CCAATGCCAATTTTCTCGAGTGAATGACCAAAATATCAAGATCATTGAGACTCTGAAATGAAGTAAAGAGATTTC
TGTGACAGGCCAAGTCTTACAGTGCCATGGCCACATTCCAATTACCATGTACTTAGTGACTTGACTGAGAAGTTAGGG
TAGAAAACAAAAAGGGAGTGGATTCTGGGAGCCTCTTCCCTTTCTCACTCACCTGCACATCTCAGTCAAGCAAAGTGTGG
TATCCACAGACATTTTAGTTGCAGAAGAAAGGCTAGGAAATCATTCTTTTGGTTAAATGGGTGTTTAAATCTTTTGGTTA
GTGGGTAAACGGGGTAAGTTAGAGTAGGGGAGGGATAGGAAGACATATTTAAAAACCATTAAACACTGTCTCCCACT
CATGAAATGAGCCACGTAGTTCTTATTTAATGCTGTTTTCTTTAGTTTAGAAATACATAGACATTGTCTTTTATGAATT
CTGATCATATTTAGTCATTTTGAACAAATGAGGGATTTGGTCAAATGAGGGATTCCTCAAAGCAATATCAGGTAAACCA
AGTTGCTTTCTCACTCCCTGTCTGATGAGACTTCAGTGTTAATGTTTACAATATACTTTGAAAGAATAAAATAGTTCTCC
TACATGAAGAAAGAATATGTCAGGAAATAAGGTCACTTTATGTCAAATTTATTTGAGTACTATGGGACCTGGCGCAGTGG
CTCATGCTTGTAAATCCCAGCACTTTGGGAGGCCGAGGTGGGCAGATCACTTGAGATCAGGACCAGCCTGGTCAAGATGGT
GAAACTCCGTCTGTACTAAAAATACAAATTTAGCTTGGCCTGGTGGCAGGCACCTGTAATCCCAGCTGCCCAAGAGGCT
GAGGCATGAGAATCGCTTGAACCTGGCAGGCCGAGGTGTCAGTGAGCCGAGATAGTGCCACAGCTCTCCAGCCTGGGCGA
CAGAGTGAGACTCCATCTCAAAACAACAACAACAACAACAACAACAACCACAAAATTATTTGAGTACTGTGAAG
GATTATTTGTCTAACAGTTCATTCCAATCAGACCAGGTAGGAGCTTTCTCTGTTTCATATGTTTCAGGGTTGCACAGTTGG
TCTCTTTAATGTCGGTGTGGAGATCCAAAGTGGGTTGTGGAAAGAGCGTCCATAGGAGAAGTGAGAATACTGTGAAAAAG
GGATGTTAGCATTCTAGAGTATGAGGATGAGTCCCAAGAAGGTTCTTTGGAAGGAGGACGAATAGAATGGAGTAATGA
AATTCTTGCCATGTGCTGAGGAGATAGCCAGCATTAGGTGACAATCTTCCAGAAGTGGTCAGGCAGAAGGTGCCCTGGTG
AGAGCTCCTTTACAGGGACTTTATGTGGTTTAGGGCTCAGAGCTCCAAACTCTGGGCTCAGCTGCTCCTGTACCTTGA
GGTCCATTACATGGGAAAGTATTTTGAATGTGTCTTTTGAAGAGAGCATCAGAGTTCTTAAGGGACTGGGTAAGGCCT
GACCTGAAATGACCATGGATATTTTCTACCTACAGTTTGAGTCACTAGAAATATGCCTGGGGACCTTGAAGAATGGCC
CTTCAGTGGCCCTCACCATTTGTTTCATGCTTCAGTTAATTCAGGTGTTGAAGGAGCTTAGGTTTTAGAGGCACGTAGACT
TGGTTCAAGTCTCGTTAGTAGTTGAATAGCCTCAGGCAAGTCACTGCCCACCTAAGATGATGGTTCTTCAACTATAAAAT
GGAGATAATGGTTACAAATGTCTCTTCTTATAGTATAATCTCCATAAGGGCATGGCCCAAGTCTGTCTTTGACTCTGCCT
ATCCCTGACATTTAGTAGCATGCCCCACATACAAATGTAGCTATTGGTATTATTGCCATATAGATAAATTATGTATAAAA
ATTAACCTGGGCAATAGCCTAAGAAGGGGGGAATATTGTAACACAAATTTAAACCCACTACGCAGGGATGAGGTGCTATA
ATATGAGGACCTTTTAACTTCCATCATTTTCTGTTTCTTGAAATAGTTTATCTTGTAAATGAAATATAAGGCACCTCCCA
CTTTTATGTATAGAAAGAGGTCTTTTAAATTTTTTTTAAATGTGAGAAGGAAGGGAGGAGTAGGAATCTTGAGATTCCAGA
TCGAAAATACTGTACTTTGGTTGATTTTAAAGTGGGCTTCCATTCCATGGATTAAATCAGTCCCAAGAAGATCAAACCTCA
GCAGTACTTGGGTGCTGAAGAACTGTTGGATTACCCTGGCAGCTGTGCCACTTGCCAGCTTCTTGGGCACACAGAGTTC
TTCAATCCAAGTTATCAGATTGTATTTGAAAAATGACAGAGCTGGAGAGTTTTTTGAAATGGCAGTGGCAAATAAATAAAT
ACTTTTTTTTAAATGGAAAGACTTGATCTATGGTAATAAATGATTTTGTCTTCTGACTGGAAAAATAGGCCTACTAAAGA
TGAATCACACTTGAGATGTTTCTTACTCACTCTGCACAGAAACAAAGAAGAAATGTTATACAGGGAAGTCCGTTTTCACT
ATTAGTATGAACCAAGAAATGGTTCAAAAACAGTGGTAGGAGCAATGCTTTCATAGTTTCAGATATGGTAGTTATGAAGA
AAACAATGTCATTTGCTGCTATTATTGTAAGAGTCTTATAATTAATGGTACTCCTATAATTTTTGATTGTGAGCTCACCT
ATTTGGGTTAAGCATGCCAATTTAAAGAGACCAAGTGTATGTACATTATGTTCTACATATTCAGTGATAAAATTACTAAA
CTACTATATGTCTGCTTTAAATTTGTACTTTAATATTGTCTTTTGGTATTAAAGAAAGATATGCTTTCAGAATAGATATGC
TTCGCTTTGGCAAGGAATTTGGATAGAACTTGCTATTTAAAGAGGTGTGGGGTAAATCCTTGATAAATCTCCAGTTTA
GCCTTTTTTGAAGAGCTAGACTTTCAAATACTAATTTCACTTCAAGCAGGTACGTTTCTGGTTTGTGTGCTGACTTC
AGTCACAATTTCTTATCAGACCAATGGCTGACCTCTTTGAGATGTCAGGCTAGGCTTACCTATGTGTTCTGTGTATGTG
AATGCTGAGAAGTTTGACAGAGATCCAATTCAGCCTTGACCCCATCAGTCCCTCGGGTAACTAACTGAGCCACCGGTC
CTCATGGCTATTTTAAATGAGGGTATTGATGGTTAAATGCATGTCTGATCCCTTATCCCAGCCATTTGCACTGCCAGCTGG

GAAC TATACCAGACCTGGATACTGATCCCAAAGTGTTAAATTCAACTACATGCTGGAGATTAGAGATGGTGCCAATAAAG
GACCCAGAACCAGGATCTTGATTGCTATAGACTTATTAATAATCCAGGTCAAAGAGAGTGACACACACTCTCTCAAGACC
TGGGGTGAGGGAGTCTGTGTTATCTGCAAGGCCATTTGAGGCTCAGAAAGTCTCTCTTCTATAGATATATGCATACTT
TCTGACATATAGGAATGTATCAGGAATACTCAACCATCACAGGCATGTTCCCTACCTCAGGGCCTTTACATGTCCTGTTA
CTCTGTCTAGAATGTCTTCTGTAGATGACCTGGCTTGCTCGTCACCCCTTCAGGTCCTTGCTCAAGTGTATCTTCTCC
CCTAGTTAAACTACCCACACCCCTGTCTGCTTTCCTTGCTTATTTTTCTCCATAGCATTTTACCATCTCTTACATTAGAC
ATTTTTCTTATTTATTTGTAGTTTATAAGCTTCATGAGGCAAGTAACTTTGCTTTGTTTCTTGCTGTATCTCCAGTGCCC
AGAGCAGTGCCCTGGTATATAATAAATATTTATTGACTGAGTGAA

Carboxyl-Terminal Src Kinase Binds CD28 upon Activation and Mutes Downstream
Signaling

J Immunol 203 (4), 1055-1063 (2019)

ACACTTCGGGTTCCCTCGGGGAGGAGGGGCTGGAACCTAGCCCATCGTCAGGACAAAAGATGCTCAGGCTGCTCTTGGCTC
TCAACTTATTCCTTCAATTCAAGTAACAGGGAAACACCTTTGTCCAAGTCCCCTATTTCCCGGACCTTCTAAGCCCTTT
TGGGTGCTGGTGGTGGTTGGTGGAGTCCTGGCTTGCTATAGCTTGCTAGTAACAGTGGCCTTTATTATTTTTCTGGGTGAG
GAGTAAGAGGAGCAGGCTCCTGCACAGTGAATGACTACCATGAACATGACTCCCCCGCCCCGGGGCCACCCGCAAGCATTACC
AGCCCTATGCCCCACACGCGACTTCGCAGCCTATCGCTCCTGACACGGACGCCTATCCAGAAGCCAGCCGGCTGGCAGC
CCCCATCTGCTCAATATCACTGCTCTGGATAGGAAATGACCGCCATCTCCAGCCGGCCACCTCAGGCCCCCTGTTGGGCCA
CCAATGCCAATTTTTCTCGAGTGAAGTACACCAATATCAAGATCATTGAGACTCTGAAATGAAGTAAAGAGATTTC
TGTGACAGGCCAAGTCTTACAGTGCCATGGCCACATTCCAACCTACCATGTACTTAGTGACTTGACTGAGAAGTTAGGG
TAGAAAACAAAAGGGAGTGGATTCTGGGAGCCTCTCCCTTTCTCACTCACCTGCACATCTCAGTCAAGCAAAGTGTGG
TATCCACAGACATTTTAGTTGCAGAAGAAAGGCTAGGAAATCATTCCCTTTGGTTAAATGGGTGTTTAACTTTTGGTTA
GTGGGTTAAACGGGGTAAGTTAGAGTAGGGGAGGGATAGGAAGACATATTTAAAAACCATTAAACACTGTCTCCCACT
CATGAAATGAGCCACGTAGTTCCTATTTAATGCTGTTTTCTTTAGTTTAGAAATACATAGACATTGTCTTTTATGAATT
CTGATCATATTTAGTCATTTTGACCAAATGAGGGATTTGGTCAAATGAGGGATTCCCTCAAAGCAATATCAGGTAAACCA
AGTTGCTTTCCTCACTCCCTGTCTGATGAGACTTCAGTGTTAATGTTTACAATATACTTTGAAAGAATAAAATAGTTCTCC
TACATGAAGAAAGAAATATGTGAGGAAATAAGGTCACTTTATGTCAAAATTATTTGAGTACTATGGGACCTGGCGCAGTGG
CTCATGCTTGTAAATCCCAGCACTTTGGGAGGCCGAGGTGGGCAGATCACTTGAGATCAGGACCAGCCTGGTCAAGATGGT
GAAACTCCGTCTGTACTAAAAATACAAAATTTAGCTTGGCCTGGTGGCAGGCACCTGTAATCCCAGCTGCCAAGAGGCT
GAGGCATGAGAATCGCTTGAACCTGGCAGGCGGAGGTTGCAGTGAGCCGAGATAGTCCACAGCTCTCCAGCCTGGGCGA
CAGAGTGAGACTCCATCTCAAACAACAACAACAACAACAACAACAACAACCACAAAATTATTTGAGTACTGTGAAG
GATTATTTGTCTAACAGTTCATTCCAATCAGACCAGGTAGGAGCTTTCTGTTTCATATGTTTCAGGGTTGCACAGTTGG
TCTCTTTAATGTCGGTGTGGAGATCCAAAGTGGGTTGTGGAAAGAGCGTCCATAGGAGAAGTGAGAATACTGTGAAAAAG
GGATGTTAGCATTCATTAGAGTATGAGGATGAGTCCCAAGAAGGTTCTTTGGAAGGAGGACGAATAGAATGGAGTAATGA
AATCTTGCCATGTGCTGAGGAGATAGCCAGCATTAGGTGACAATCTTCCAGAAGTGGTCAGGCAGAAGTGCCCTGGTG
AGAGCTCCTTTACAGGGACTTTATGTGTTTATAGGCTCAGAGCTCCAAAACCTGCGGCTCAGCTGCTCCTGTACCTTGA
GGTCCATTACATGGGAAAGTATTTTGAATGTGCTTTTTGAAGAGAGCATCAGAGTTCTTAAGGGACTGGGTAAGGCCT
GACCCTGAAATGACCATGGATATTTTTCTACCTACAGTTTGAGTCAACTAGAATATGCCTGGGGACCTTGAAGAATGGCC
CTTCAGTGGCCCTCACCATTTGTTTCATGCTTCAGTTAATTCAGGTGTTGAAGGAGCTTAGGTTTTAGAGGCACGTAGACT
TGGTTCAAGTCTCGTTAGTAGTTGAATAGCCTCAGGCAAGTCACTGCCCACCTAAGATGATGGTTCTTCAACTATAAAAT
GGAGATAATGGTTACAAATGTCTCTTCTATAGTATAATCTCCATAAGGGCATGGCCCAAGTCTGTCTTTGACTCTGCCT
ATCCCTGACATTTAGTAGCATGCCGACATACAATGTTAGCTATTGGTATTATTGCCATATAGATAAATTATGTATAAAA
ATTAACTGGGCAATAGCCTAAGAAGGGGGGAATATTGTAACACAAATTTAAACCCACTACGCAGGGATGAGGTGCTATA
ATATGAGGACCTTTTAACTCCATCATTTTCTGTTTCTTGAAATAGTTTATCTTGTAATGAAATATAAGGCACCTCCCA
CTTTTATGTATAGAAAGAGGTCTTTTAAATTTTTTTTAAATGTGAGAAGGAAGGAGGAGTAGGAATCTTGAGATTCCAGA
TCGAAAATACTGTACTTTGGTTGATTTTTAAGTGGGCTTCCATTCCATGGATTTAATCAGTCCCAAGAAGATCAAACCTCA
GCAGTACTTGGGTGCTGAAGAACTGTTGGATTTACCCTGGCACGTGTGCCACTTGCCAGCTTCTTGGGCACACAGAGTTC
TTCAATCCAAGTTATCAGATTGTATTTGAAAATGACAGAGCTGGAGAGTTTTTTGAAATGGCAGTGGCAAATAAATAAAT

ACTTTTTTTTTAAATGGAAAGACTTGATCTATGGTAATAAATGATTTTGTCTTCTGACTGGAAAAATAGGCCTACTAAAGA
 TGAATCACACTTGAGATGTTTCTTACTCACTCTGCACAGAAACAAAGAAGAAATGTTATACAGGGAAGTCCGTTTTCTACT
 ATTAGTATGAACCAAGAAATGGTTCAAAAACAGTGGTAGGAGCAATGCTTTCATAGTTTCAGATATGGTAGTTATGAAGA
 AAACAATGTCATTTGCTGCTATTATTGTAAGAGTCTTATAATTAATGGTACTCCTATAATTTTTGATTGTGAGCTCACCT
 ATTTGGGTAAAGCATGCCAATTTAAAGAGACCAAGTGTATGTACATTATGTTCTACATATTCAGTGATAAAATTACTAAA
 CTACTATATGTCTGCTTTAAATTTGTACTTTAATATTGTCTTTTGGTATTAAGAAAGATATGCTTTCAGAATAGATATGC
 TTCGCTTTGGCAAGGAATTTGGATAGAAGTGGTATTTAAAAGAGGTGTGGGGTAAATCCTTGTATAAATCTCCAGTTTA
 GCCTTTTTTTGAAAAAGCTAGACTTTCAAATACTAATTTCACTTCAAGCAGGGTACGTTTCTGGTTTGTGCTTGACTTC
 AGTCACAATTTCTTATCAGACCAATGGCTGACCTCTTTGAGATGTGAGGCTAGGCTTACCTATGTGTTCTGTGTCATGTG
 AATGCTGAGAAGTTTGACAGAGATCCAAGTTCAGCCTTGACCCCATCAGTCCCTCGGGTTAACTAACTGAGCCACCGGTC
 CTCATGGCTATTTAATGAGGGTATTGATGGTTAAATGCATGTCTGATCCCTTATCCAGCCATTTGCACTGCCAGCTGG
 GAACTATACCAGACCTGGATACTGATCCCAAAGTGTTAAATTCAACTACATGCTGGAGATTAGAGATGGTGCCAATAAAG
 GACCCAGAACCAGGATCTTGATTGCTATAGACTTATTAATAATCCAGGTCAAAGAGAGTGACACACACTCTCTCAAGACC
 TGGGGTGAGGGAGTCTGTGTTATCTGCAAGGCCATTTGAGGCTCAGAAAGTCTCTCTTCTCTATAGATATATGCATACTT
 TCTGACATATAGGAATGTATCAGGAATACTCAACCATCACAGGCATGTTCCCTACCTCAGGGCCTTTACATGTCTGTTTA
 CTCTGTCTAGAATGTCTTCTGTAGATGACCTGGCTTGCTCGTCACCCCTTCAGGTCCTTGCTCAAGTGTATCTTCTCC
 CCTAGTTAACTACCCACACCCCTGTCTGCTTTCCTTGCTTATTTTTCTCCATAGCATTTTACCATCTCTTACATTAGAC
 ATTTTTCTTATTTATTTGTAGTTTATAAGCTTCATGAGGCAAGTAAGTCTTGTCTTGTCTTGTCTGTATCTCCAGTGCCC
 AGAGCAGTGCTGGTATATAATAAATATTTATTGACTGAGTGAA

Investigation of ICOS, CD28 and CD80 polymorphisms with the risk of
 hepatocellular carcinoma: a case-control study in eastern Chinese population
 Biosci Rep 39 (7) (2019)

AACTTCGGGTTCCCTCGGGAGGAGGGGCTGGAACCCTAGCCCATCGTCAGGACAAAGATGCTCAGGCTGCTCTTGGCTC
 TCAACTTATTCCTTCAATTCAAGTAACAGGGAAACACCTTTGTCCAAGTCCCCTATTTCCCGGACCTTCTAAGCCCTTT
 TGGGTGCTGGTGGTGGTTGGTGGAGTCTGGCTGCTATAGCTTGCTAGTAACAGTGGCCTTTATTATTTTCTGGGTGAG
 GAGTAAGAGGAGCAGGCTCCTGCACAGTGAATGACTCCCCGCCGCCCGGGCCACCCGCAAGCATTACC
 AGCCCTATGCCCCACACGCGACTTCGCAGCCTATCGCTCCTGACACGGACGCCTATCCAGAAGCCAGCCGGCTGGCAGC
 CCCCATCTGCTCAATATCACTGCTCTGGATAGGAAATGACCGCCATCTCCAGCCGCCACCTCAGGCCCCCTGTTGGGCCA
 CCAATGCCAATTTTCTCGAGTGAAGTACCAAAATCAAGATCATTGAGACTCTGAAATGAAGTAAAGAGATTTC
 TGTGACAGGCCAAGTCTTACAGTGCCATGGCCACATTCCAATTACCATGTACTTAGTGAAGTACTGAGAGTTAGGG
 TAGAAAACAAAAAGGAGTGGATTCTGGGAGCCTCTCCCTTTCTCACTCACCTGCACATCTCAGTCAAGCAAAGTGTGG
 TATCCACAGACATTTTAGTTGCAGAAGAAAGGCTAGGAAATCATTCTTTTGGTTAAATGGGTGTTTAACTCTTTTGGTTA
 GTGGGTAAACGGGGTAAGTTAGAGTAGGGGAGGGATAGGAAGACATATTTAAAAACCATTAACAACTGTCTCCACT
 CATGAAATGAGCCACGTAGTTCTTATTTAATGCTGTTTTCTTTAGTTTAGAAATACATAGACATTGTCTTTTATGAATT
 CTGATCATATTTAGTCATTTTGACCAAATGAGGGATTTGGTCAAATGAGGGATTCCCTCAAAGCAATATCAGGTAAACCA
 AGTTGCTTTCCTCACTCCCTGTGATGAGACTTCAGTGTAAATGTTTCAATATACCTTTCGAAAGAATAAAATAGTTCTCC
 TACATGAAGAAAGAATATGTCAGGAAATAAGGTCACTTTATGTCAAAATTATTTGAGTACTATGGGACCTGGCGCAGTGG
 CTCATGCTTGTAAATCCAGCACTTTGGGAGGCCGAGGTGGGCAGATCACTTGAGATCAGGACCAGCCTGGTCAAGATGGT
 GAACTCCGCTGTACTAAAAATACAAATTTAGCTTGGCCTGGTGGCAGGCACCTGTAATCCAGCTGCCCAAGAGGCT
 GAGGCATGAGAATCGCTTGAACCTGGCAGGCGGAGGTTGCAGTGAGCCGAGATAGTGCCACAGCTCTCCAGCCTGGGCGA
 CAGAGTGAGACTCCATCTCAAAACAACAACAACAACAACAACAACAACCACAAAATTATTTGAGTACTGTGAAG
 GATTATTTGTCTAACAGTTCATTCCAATCAGACCAGGTAGGAGCTTTCTGTTTCATATGTTTCAGGGTTGCACAGTTGG
 TCTCTTTAATGTCCGTGTGGAGATCCAAAGTGGGTTGTGGAAAGAGCGTCCATAGGAGAAGTGAGAATACTGTAAAAAG
 GGATGTTAGCATTATTAGAGTATGAGGATGAGTCCCAAGAAGGTTCTTTGGAAGGAGGACGAATAGAATGGAGTAATGA
 AATTCCTTGCCATGTGCTGAGGAGATAGCCAGCATTAGGTGACAATCTTCCAGAAGTGGTCAGGCAGAAGGTGCCCTGGTG
 AGAGCTCCTTTACAGGGACTTTATGTGGTTTAGGGCTCAGAGCTCCAAACTCTGGGCTCAGCTGCTCCTGTACCTTGA
 GGTCCATTACATGGGAAAGTATTTTGAATGTGTCTTTTGAAGAGAGCATCAGAGTTCTTAAGGGACTGGGTAAGGCCT

GACCCTGAAATGACCATGGATATTTTTCTACCTACAGTTTGAGTCAACTAGAATATGCCTGGGGACCTTGAAGAATGGCC
 CTTCAAGTGGCCCTCACCATTTGTTTCATGCTTCAGTTAATTCAGGTGTTGAAGGAGCTTAGGTTTTAGAGGCACGTAGACT
 TGGTTCAAGTCTCGTTAGTAGTTGAATAGCCTCAGGCAAGTCACTGCCCACCTAAGATGATGGTTCTTCAACTATAAAAT
 GGAGATAATGGTTACAAATGTCTCTTCCTATAGTATAATCTCCATAAGGGCATGGCCCAAGTCTGTCTTTGACTCTGCCT
 ATCCCTGACATTTAGTAGCATGCCCCGACATACAATGTTAGCTATTGGTATTATTGCCATATAGATAAATTATGTATAAAA
 ATTAACTGGGCAATAGCCTAAGAAGGGGGGAATATTGTAACACAAATTTAAACCCACTACGCAGGGATGAGGTGCTATA
 ATATGAGGACCTTTTAACTTCCATCATTTTCTCTGTTTCTTGAAATAGTTTATCTTGTAATGAAATATAAGGCACCTCCCA
 CTTTTATGTATAGAAAGAGGTCTTTTAATTTTTTTTTTAATGTGAGAAGGAAGGGAGGAGTAGGAATCTTGAGATTCCAGA
 TCGAAAATACTGTACTTTGGTTGATTTTTAAGTGGGCTTCCATTCCATGGATTAAATCAGTCCCAAGAAGATCAAACCTCA
 GCAGTACTTGGGTGCTGAAGAACTGTTGGATTTACCCTGGCACGTGTGCCACTTGCCAGCTTCTTGGGCACACAGAGTTC
 TTCAATCCAAGTTATCAGATTGTATTTGAAAAATGACAGAGCTGGAGAGTTTTTTGAAATGGCAGTGGCAAATAAATAAAT
 ACTTTTTTTTTAAATGGAAAGACTTGATCTATGGTAATAAATGATTTTGTCTTCTGACTGGAAAAATAGGCCTACTAAAGA
 TGAATCACACTTGAGATGTTTCTTACTCACTCTGCACAGAAACAAAGAAGAAATGTTATACAGGGAAGTCCGTTTTCTACT
 ATTAGTATGAACCAAGAAATGGTTCAAAAACAGTGGTAGGAGCAATGCTTTCATAGTTTCAGATATGGTAGTTATGAAGA
 AAACAATGTCATTTGCTGCTATTATTGTAAGAGTCTTATAATTAATGGTACTCCTATAATTTTTGATTGTGAGCTCACCT
 ATTTGGGTAAAGCATGCCAATTTAAAGAGACCAAGTGTATGTACATTATGTTCTACATATTCAGTGATAAAATTACTAAA
 CTACTATATGTCTGCTTTAAATTTGTACTTTAATATTGTCTTTTGGTATTAAGAAAGATATGCTTTCAGAATAGATATGC
 TTCGCTTTGGCAAGGAATTTGGATAGAAGTCTGCTATTTAAAGAGGTGTGGGGTAAATCCTTGTATAAATCTCCAGTTTA
 GCCTTTTTTGAAAAAGCTAGACTTTCAAATACTAATTTCACTTCAAGCAGGGTACGTTTCTGGTTTGTCTGCTGACTTC
 AGTCACAATTTCTTATCAGACCAATGGCTGACCTCTTTGAGATGTCAGGCTAGGCTTACCTATGTGTTCTGTGTATGTG
 AATGCTGAGAAAGTTTGACAGAGATCCAACCTTCAGCCTTGACCCCATCAGTCCCTCGGGTTAACTAACTGAGCCACCGGTC
 CTCATGGCTATTTAATGAGGGTATTGATGGTTAAATGCATGTCTGATCCCTTATCCAGCCATTTGCACTGCCAGCTGG
 GAACTATAACCAGACCTGGATACTGATCCCAAAGTGTTAAATTCAACTACATGCTGGAGATTAGAGATGGTGCCAATAAAG
 GACCCAGAACCAGGATCTTGATTGCTATAGACTTATTAATAATCCAGGTCAAAGAGAGTGACACACACTCTCTCAAGACC
 TGGGGTGAGGGAGTCTGTGTTATCTGCAAGGCCATTTGAGGCTCAGAAAGTCTCTCTTTCCTATAGATATATGCATACTT
 TCTGACATATAGGAATGTATCAGGAATACTCAACCATCACAGGCATGTTCCCTACCTCAGGGCCTTTACATGTCCTGTTTA
 CTCTGTCTAGAATGTCCTTCTGTAGATGACCTGGCTTGCTCGTCCCTTCAGGTCCTTGCTCAAGTGTATCTTCTCC
 CCTAGTTAACTACCCACACCCCTGTCTGCTTTCCTTGCTTATTTTTCTCCATAGCATTTTACCATCTCTTACATTAGAC
 ATTTTTCTTATTTATTTGTAGTTTATAAGCTTCATGAGGCAAGTAACCTTTGCTTTGTTTCTTGCTGTATCTCCAGTGCCC
 AGAGCAGTGCCTGGTATATAATAAATATTTATTGACTGAGTGAA

CD28 Autonomous Signaling Up-Regulates C-Myc Expression and Promotes Glycolysis
 Enabling Inflammatory T Cell Responses in Multiple Sclerosis
 Cells 8 (6), E575 (2019)

ACACTTCGGGTTCCCTCGGGGAGGAGGGCTGGAACCCTAGCCCATCGTCAGGACAAAGATGCTCAGGCTGCTCTTGGCTC
 TCAACTTATTCCCTTCAATTCAAGTAACAGGGAAACACCTTTGTCCAAGTCCCCTATTTCCCGGACCTTCTAAGCCCTTT
 TGGGTGCTGGTGGTGGTTGGTGGAGTCCTGGCTTGCTATAGCTTGCTAGTAACAGTGGCCTTTATTATTTTCTGGGTGAG
 GAGTAAGAGGAGCAGGCTCCTGCACAGTGAATGAACATGACTCCCCGCCGCCCGGGCCACCCGCAAGCATTACC
 AGCCCTATGCCCCACCACGCGACTTCGCAGCCTATCGCTCCTGACACGGACGCCTATCCAGAAGCCAGCCGGCTGGCAGC
 CCCCATCTGCTCAATATCACTGCTCTGGATAGGAAATGACCGCCATCTCCAGCCGCCACCTCAGGCCCTGTTGGGCCA
 CCAATGCCAATTTTTCTCGAGTGAAGTACCAAAATATCAAGATCATTTTGGAGTCTGAAATGAAGTAAAGAGATTTC
 TGTGACAGGCCAAGTCTTACAGTGCCATGGCCACATTCCAACCTTACCATGTACTTAGTGACTTGACTGAGAAGTTAGGG
 TAGAAAACAAAAAGGGAGTGGATTCTGGGAGCCTCTCCCTTTCTCACTCACCTGCACATCTCAGTCAAGCAAAGTGTGG
 TATCCACAGACATTTTAGTTGAGAAGAAAGGCTAGGAAATCATTCCTTTTGGTTAAATGGGTGTTTAAATCTTTGGTTA
 GTGGGTAAACGGGGTAAGTTAGAGTAGGGGAGGGATAGGAAGACATATTTAAAAACCATTAACAACTGTCTCCCACT
 CATGAAATGAGCCACGTAGTTCTATTTAATGCTGTTTTCTTTAGTTTAGAAATACATAGACATTGTCTTTTATGAATT
 CTGATCATATTTAGTCATTTTGACCAAATGAGGGATTTGGTCAAATGAGGGATTCCCTCAAAGCAATATCAGGTAAACCA
 AGTTGCTTTCTCACTCCCTGTCTAGACTTCAGTGTTAATGTTTACAATATACTTTGAAAGAATAAATAGTTCTCC

TACATGAAGAAAGAATATGTCAGGAAATAAGGTCACCTTTATGTCAAAATTATTTGAGTACTATGGGACCTGGCGCAGTGG
CTCATGCTTGTAAATCCCAGCAGCTTTGGGAGGCCGAGGTGGGCAGATCAGTTGAGATCAGGACCAGCCTGGTCAAGATGGT
GAAACTCCGTCTGTACTAAAAATACAAATTTAGCTTGGCCTGGTGGCAGGCACCTGTAATCCCAGCTGCCCAAGAGGCT
GAGGCATGAGAAATCGCTTGAACCTGGCAGGCCGAGGTTGCAGTGAGCCGAGATAGTGCCACAGCTCTCCAGCCTGGGCGA
CAGAGTGAGACTCCATCTCAAACAACAACAACAACAACAACAACAACAACCACAAAATTATTTGAGTACTGTGAAG
GATTATTTGTCTAACAGTTCATTCCAATCAGACCAGGTAGGAGCTTTCCCTGTTTCATATGTTTTCAGGGTTGCACAGTTGG
TCTCTTTAATGTCGGTGTGGAGATCCAAAGTGGGTTGTGGAAAGAGCGTCCATAGGAGAAGTGAGAATACTGTGAAAAAG
GGATGTTAGCATTCAATAGAGTATGAGGATGAGTCCCAAGAAGGTTCTTTGGAAGGAGGACGAATAGAATGGAGTAATGA
AATTCCTTGCCATGTGCTGAGGAGATAGCCAGCATTAGGTGACAATCTTCAGAAGTGGTCAGGCAGAAGGTGCCCTGGTG
AGAGCTCCCTTTACAGGGACTTTATGTGGTTTAGGGCTCAGAGCTCCAAAACCTCTGGGCTCAGCTGCTCCTGTACCTTGA
GGTCCATTACATGGGAAAGTATTTTGGAAATGTGTCTTTTGAAGAGAGCATCAGAGTTCTTAAGGGACTGGGTAAAGCCT
GACCCTGAAATGACCATGGATATTTTCTACCTACAGTTTGAGTCAACTAGAATATGCCTGGGGACCTTGAAGAATGGCC
CTTCAGTGGCCCTCACCATTTGTTTCATGCTTCAGTTAATTCAGGTGTTGAAGGAGCTTAGGTTTTAGAGGCACGTAGACT
TGGTTCAAGTCTCGTTAGTAGTTGAATAGCCTCAGGCAAGTCACTGCCCACCTAAGATGATGGTTCTTCAACTATAAAAT
GGAGATAATGGTTACAAATGTCTCTTCTATAGTATAATCTCCATAAGGGCATGGCCCAAGTCTGTCTTTGACTCTGCCT
ATCCCTGACATTTAGTAGCATGCCGACATACAATGTTAGCTATTGGTATTATTGCCATATAGATAAATTATGTATAAAAA
ATTAACTGGGCAATAGCCTAAGAAGGGGGGAATATTGTAACACAAATTTAAACCCACTACGCAGGGATGAGGTGCTATA
ATATGAGGACCTTTTAACTTCCATCATTTTCTGTTTCTTGAAATAGTTTATCTTGTAATGAAATATAAGGCACCTCCCA
CTTTTATGTATAGAAAGAGGTCTTTTAAATTTTTTTAATGTGAGAAGGAAGGGAGGAGTAGGAATCTTGAGATTCCAGA
TCGAAAATACTGTACTTTGGTTGATTTTAAAGTGGGCTTCCATTCCATGGATTTAATCAGTCCCAAGAAGATCAAACCTCA
GCAGTACTTGGGTGCTGAAGAACTGTTGGATTTACCCTGGCACGTGTGCCACTTGCCAGCTTCTTGGGCACACAGAGTTC
TTCAATCCAAGTTATCAGATTGTATTTGAAAATGACAGAGCTGGAGAGTTTTTTGAAATGGCAGTGGCAAATAAATAAAT
ACTTTTTTTTTAAATGGAAAGACTTGATCTATGGTAATAAATGATTTTGTCTTCTGACTGGAAAAATAGGCCTACTAAAGA
TGAATCACACTTGAGATGTTTCTTACTCACTCTGCACAGAAACAAAGAAGAAATGTTATACAGGGAAGTCCGTTTTCTACT
ATTAGTATGAACCAAGAAATGGTTCAAAAACAGTGGTAGGAGCAATGCTTTCATAGTTTCAGATATGGTAGTTATGAAGA
AAACAATGTCATTTGCTGCTATTATTGTAAGAGTCTTATAATTAATGGTACTCCTATAATTTTTGATTGTGAGCTCACCT
ATTTGGGTAAAGCATGCCAATTTAAAGAGACCAAGTGTATGTACATTATGTTCTACATATTCAGTGATAAAATTACTAAA
CTACTATATGTCTGCTTTAAATTTGTACTTTAATATTGTCTTTTGGTATTAAGAAAGATATGCTTTCAGAATAGATATGC
TTCGCTTTGGCAAGGAATTTGGATAGAACTTGCTATTTAAAGAGGTGTGGGGTAAATCCTTGTATAAATCTCCAGTTTA
GCCTTTTTTTGAAAAGCTAGACTTTCAAATACTAATTTCACTTCAAGCAGGGTACGTTTCTGGTTTGTGTTGCTTGACTTC
AGTCACAATTTCTTATCAGACCAATGGCTGACCTCTTTGAGATGTCAGGCTAGGCTTACCTATGTGTTCTGTGTCATGTG
AATGCTGAGAAGTTTGACAGAGATCCAACCTTCAGCCTTGACCCCATCAGTCCCTCGGGTAACTAACTGAGCCACCGGTC
CTCATGGCTATTTAATGAGGGTATTGATGGTTAAATGCATGTCTGATCCCTTATCCCAGCCATTTGCACTGCCAGCTGG
GAACTATACCAGACCTGGATACTGATCCCAAAGTGTTAAATTCAACTACATGCTGGAGATTAGAGATGGTGCCAATAAAG
GACCCAGAACCAGGATCTTGATTGCTATAGACTTATTAATAATCCAGGTCAAAGAGAGTGACACACACTCTCTCAAGACC
TGGGGTGAGGGAGTCTGTGTTATCTGCAAGGCCATTTGAGGCTCAGAAAGTCTCTCTTTCCTATAGATATATGCATACTT
TCTGACATATAGGAATGTATCAGGAATACTCAACCATCACAGGCATGTTCCCTACCTCAGGGCCTTTACATGTCTGTTTA
CTCTGTCTAGAATGTCCTTCTGTAGATGACCTGGCTTGCTCGTCAACCTTCAGGTCTTGTCAAGTGTCTCTCTCC
CCTAGTTAACTACCCACACCCCTGTCTGCTTTCTTGTCTATTTTTCTCCATAGCATTTTACCATCTCTTACATTAGAC
ATTTTTCTTATTTATTTGTAGTTTATAAGCTTCATGAGGCAAGTAACTTTGCTTTGTTTCTTGCTGTATCTCCAGTGCCC
AGAGCAGTGCCTGGTATATAATAAATATTTATTGACTGAGTGAA

CD28 and T cell antigen receptor signal transduction coordinately regulate
interleukin 2 gene expression in response to superantigen stimulation
J Exp Med 175 (4), 1131-1134 (1992)

ACACTTCGGGTTCTCGGGGAGGAGGGGCTGGAACCTAGCCCATCGTCAGGACAAAGATGCTCAGGCTGCTCTTGGCTC
TCAACTTATTCCTTCAATTCAAGTAACAGGGAAACACCTTTGTCCAAGTCCCCTATTTCCCGGACCTTCTAAGCCCTTT
TGGGTGCTGGTGGTGGTGGTGGAGTCCTGGCTTGTCTATAGCTTGTAGTAACAGTGGCCTTTATTATTTTCTGGGTGAG

GAGTAAGAGGAGCAGGCTCCTGCACAGTGAATGACTCCCCGCGCCCCGGGCCCCACCGCAAGCATTACC
AGCCCTATGCCCCACCACGCGACTTCGCAGCCTATCGCTCCTGACACGGACGCTATCCAGAAGCCAGCCGGCTGGCAGC
CCCCATCTGCTCAATATCACTGCTCTGGATAGGAAATGACCGCCATCTCCAGCCGCCACCTCAGGCCCCCTGTTGGGCCA
CCAATGCCAATTTTTCTCGAGTGAAGTACACCAATATCAAGATCATTGAGACTCTGAAATGAAGTAAAGAGATTTC
TGTGACAGGCCAAGTCTTACAGTGCCATGGCCACATTCCAATTACCATGTACTTAGTGACTTGACTGAGAAGTTAGGG
TAGAAAACAAAAAGGGAGTGGATTCTGGGAGCCTCTTCCCTTTCTCACTCACCTGCACATCTCAGTCAAGCAAAGTGTGG
TATCCACAGACATTTAGTTGCAGAAGAAAGGCTAGGAAATCATTCCCTTTGGTTAAATGGGTGTTTAAATCTTTTGGTTA
GTGGGTTAAACGGGGTAAGTTAGAGTAGGGGGAGGGATAGGAAGACATATTTAAAAACCATTAAACACTGTCTCCCACT
CATGAAATGAGCCACGTAGTTCCTATTTAATGCTGTTTTCTTTAGTTTAGAAATACATAGACATTGTCTTTTATGAATT
CTGATCATATTTAGTCATTTTGACCAAATGAGGGATTTGGTCAAATGAGGGATTCCCTCAAAGCAATATCAGGTAAACCA
AGTTGCTTTCTCACTCCCTGTATGAGACTTCAGTGTTAATGTTTACAATATACTTTGAAAGAATAAAATAGTTCTCC
TACATGAAGAAAGAAATATGTCAGGAAATAAGGTCACCTTTATGTCAAATATTTGAGTACTATGGGACCTGGCGCAGTGG
CTCATGCTTGTAAATCCCAGCACTTTGGGAGGCCGAGGTGGGCAGATCACTTGAGATCAGGACCAGCCTGGTCAAGATGGT
GAACTCCGTCTGTACTAAAAATACAAATTTAGCTTGGCCTGGTGGCAGGCACCTGTAATCCCAGCTGCCCAAGAGGCT
GAGGCATGAGAATCGCTTGAACCTGGCAGGCGGAGGTTGCAGTGAGCCGAGATAGTGCCACAGCTCTCCAGCCTGGGCGA
CAGAGTGAGACTCCATCTCAAACAACAACAACAACAACAACAACAACAACCACAAAATTATTTGAGTACTGTGAAG
GATTATTTGTCTAACAGTTCATTCCAATCAGACCAGGTAGGAGCTTTCTGTTTCATATGTTTCAGGGTTGCACAGTTGG
TCTCTTTAATGTCGGTGTGGAGATCCAAAGTGGGTTGTGGAAAGAGCGTCCATAGGAGAAGTGAGAATACTGTGAAAAAG
GGATGTTAGCATTCAATAGAGTATGAGGATGAGTCCCAAGAAGGTTCTTTGGAAGGAGGACGAATAGAATGGAGTAATGA
AATCTTGCCATGTGCTGAGGAGATAGCCAGCATTAGGTGACAATCTTCCAGAAGTGGTCAGGCAGAAGGTGCCCTGGTG
AGAGCTCCTTTACAGGGACTTTATGTGGTTTAGGGCTCAGAGCTCCAAACTCTGGGCTCAGCTGCTCCTGTACCTTGA
GGTCCATTACATGGGAAAGTATTTTGAATGTGTCTTTTGAAGAGAGCATCAGAGTTCTTAAGGGACTGGGTAAGGCCT
GACCCTGAAATGACCATGGATATTTTTCTACCTACAGTTTGAGTCAACTAGAATATGCCTGGGGACCTTGAAGAATGGCC
CTTCAGTGGCCCTCACCATTTGTTTCATGCTTCAGTTAATTCAGGTGTTGAAGGAGCTTAGGTTTTAGAGGCACGTAGACT
TGGTTCAAGTCTCGTTAGTAGTTGAATAGCCTCAGGCAAGTCACTGCCCACCTAAGATGATGGTTCTTCAACTATAAAAT
GGAGATAATGGTTACAAATGTCTCTTCTATAGTATAATCTCCATAAGGGCATGGCCCAAGTCTGTCTTTGACTCTGCCT
ATCCCTGACATTTAGTAGCATGCCCCACATACAATGTTAGCTATTGGTATTATTGCCATATAGATAAATTATGTATAAAA
ATTAACTGGGCAATAGCCTAAGAAGGGGGGAATATTGTAACACAAATTTAAACCCACTACGCAGGGATGAGGTGCTATA
ATATGAGGACCTTTTAACTTCCATCATTTTTCTGTTTCTTGAAATAGTTTATCTTGTAAATGAAATATAAGGCACCTCCCA
CTTTTATGTATAGAAAGAGGTCTTTTAAATTTTTTTTAAATGTGAGAAGGAAGGGAGGAGTAGGAATCTTGAGATTCCAGA
TCGAAAATACTGTACTTTGGTTGATTTTTAAGTGGGCTTCCATTCCATGGATTAAATCAGTCCCAAGAAGATCAAACCTCA
GCAGTACTTGGGTGCTGAAGAACTGTTGGATTTACCCTGGCACGTGTGCCACTTGCCAGCTTCTTGGGCACACAGAGTTC
TTCAATCCAAGTTATCAGATTGTATTTGAAAATGACAGAGCTGGAGAGTTTTTTGAAATGGCAGTGGCAAATAAATAAAT
ACTTTTTTTTTAAATGGAAGACTTGATCTATGGTAATAAATGATTTTGTCTTCTGACTGGAAAAATAGGCCTACTAAAGA
TGAATCACACTTGAGATGTTTCTTACTCACTCTGCACAGAAACAAAGAAGAAATGTTATACAGGGAAGTCCGTTTTCTACT
ATTAGTATGAACCAAGAAATGGTTCAAAAACAGTGGTAGGAGCAATGCTTTCATAGTTTCAGATATGGTAGTTATGAAGA
AAACAATGTCATTTGCTGCTATTATTGTAAGAGTCTTATAATTAATGGTACTCCTATAATTTTTGATTGTGAGCTCACCT
ATTTGGGTTAAGCATGCCAATTTAAAGAGACCAAGTGTATGTACATTATGTTCTACATATTCAGTGATAAAATTACTAAA
CTACTATATGTCTGCTTTAAATTTGTACTTTAATATTGTCTTTTGGTATTAAAGAAAGATATGCTTTTCAGAATAGATATGC
TTCGCTTTGGCAAGGAATTTGGATAGAACTTGCTATTTAAAGAGGTGTGGGGTAAATCCTTGATAAATCTCCAGTTTA
GCCTTTTTTGA AAAAGCTAGACTTTCAAATACTAATTTCACTTCAAGCAGGGTACGTTTCTGGTTTGTGTGCTTGACTTC
AGTCACAATTTCTTATCAGACCAATGGCTGACCTCTTTGAGATGTCAGGCTAGGCTTACCTATGTGTTCTGTGTCATGTG
AATGCTGAGAAGTTTGACAGAGATCCAATTGACGCTTGACCCCATCAGTCCCTCGGGTAACTAACTGAGCCACCGGTC
CTCATGGCTATTTAATGAGGGTATTGATGGTTAAATGCATGTCTGATCCCTTATCCCAGCCATTTGCACTGCCAGCTGG
GAACTATACCAGACCTGGATACTGATCCCAAAGTGTTAAATTCAACTACATGCTGGAGATTAGAGATGGTGCCAAATAAAG
GACCCAGAACCAGGATCTTGATTGCTATAGACTTATTAATAATCCAGGTCAAAGAGAGTGACACACACTCTCTCAAGACC
TGGGGTGAGGGAGTCTGTGTTATCTGCAAGGCCATTTGAGGCTCAGAAAGTCTCTCTTCTCCTATAGATATATGCATACTT
TCTGACATATAGGAATGTATCAGGAATACTCAACCATCACAGGCATGTTCTTACCTCAGGGCCTTTACATGTCCTGTTTA

CTCTGTCTAGAATGTCCTTCTGTAGATGACCTGGCTTGCTCGTCACCCTTCAGGTCCTTGCTCAAGTGTCTCTCTCC
CCTAGTTAAACTACCCACACCCTGTCTGCTTTCCTTGCTTATTTTTCTCCATAGCATTTTACCATCTCTTACATTAGAC
ATTTTTCTTATTTATTTGTAGTTTATAAGCTTCATGAGGCAAGTAACCTTTGCTTTGTTTCTTGCTGTATCTCCAGTGCCC
AGAGCAGTGCCCTGGTATATAATAAATATTTATTGACTGAGTGAA

Signalling in human tumour infiltrating lymphocytes: the CD28 molecule is
functional and is physically associated with the CD45R0 molecule
Eur J Cancer 28A (4-5), 749-754 (1992)

ACACTTCGGGTTCTCGGGAGGAGGGCTGGAACCCTAGCCCATCGTCAGGACAAAGATGCTCAGGCTGCTCTTGGCTC
TCAACTTATTCCTTCAATTCAAGTAACAGGGAAACACCTTTGTCCAAGTCCCCTATTTCCCGGACCTTCTAAGCCCTTT
TGGGTGCTGGTGGTGGTTGGTGGAGTCTGGCTTGTATAGCTTGCTAGTAACAGTGGCCTTTATTATTTTTCTGGGTGAG
GAGTAAGAGGAGCAGGCTCCTGCACAGTGAATGACTACATGAACATGACTCCCCGCCGCCCGGGCCACCCGCAAGCATTACC
AGCCCTATGCCCCACCGGACTTCGCAGCCTATCGCTCCTGACACGGACGCCTATCCAGAAGCCAGCCGGCTGGCAGC
CCCCATCTGCTCAATATCACTGCTCTGGATAGGAAATGACCGCCATCTCCAGCCGGCCACCTCAGGCCCTGTTGGGCCA
CCAATGCCAATTTTTCTCGAGTGAATGACTAGACCAAAATCAAGATCATTGAGACTCTGAAATGAAGTAAAGAGATTTC
TGTGACAGGCCAAGTCTTACAGTGCCATGGCCACATTCCAATTACCATGTACTTAGTGAATGACTGAGAAGTTAGGG
TAGAAAACAAAAAGGAGTGGATTCTGGGAGCCTCTTCCCTTTCTCACTCACCTGCACATCTCAGTCAAGCAAAGTGTGG
TATCCACAGACATTTTAGTTGCAGAAGAAAGGCTAGGAAATCATTCTTTTGGTTAAATGGGTGTTTAACTTTTGGTTA
GTGGGTAAACGGGGTAAGTTAGAGTAGGGGAGGGATAGGAAGACATATTTAAAAACCATTAAACACTGTCTCCCACT
CATGAAATGAGCCACGTAGTTCCTATTTAATGCTGTTTTCTTTAGTTTAGAAATACATAGACATTGTCTTTTATGAATT
CTGATCATATTTAGTCATTTTGACCAAATGAGGGATTTGGTCAAATGAGGGATTCCCTCAAAGCAATATCAGGTAAACCA
AGTTGCTTTCTCACTCCCTGTCTGATGAGACTTCAGTGTAAATGTTTACAATATACTTTGAAAGAATAAAATAGTTCTCC
TACATGAAGAAAGAAATATGTGAGGAAATAAGGTCACTTTATGTCAAAATTATTTGAGTACTATGGGACCTGGCGCAGTGG
CTCATGCTTGTAAATCCCAGCACTTTGGGAGGCCGAGGTGGGCAGATCACTTGAGATCAGGACCAGCCTGGTCAAGATGGT
GAAACTCCGTCTGTAATAAAATACAAAATTTAGCTTGGCCTGGTGGCAGGCACCTGTAATCCAGCTGCCCAAGAGGCT
GAGGCATGAGAATCGCTTGAACCTGGCAGCGGAGGTTGCAGTGAGCCGAGATAGTGCCACAGCTCTCCAGCCTGGGCGA
CAGAGTGAGACTCCATCTCAAAACAACAACAACAACAACAACAACAACCACAAAATTATTTGAGTACTGTGAAG
GATTATTTGTCTAACAGTTCATTCCAATCAGACCAGGTAGGAGCTTTCTGTTCATATGTTTCAGGGTTGCACAGTTGG
TCTCTTTAATGTCGGTGTGGAGATCCAAAGTGGGTTGTGGAAAGAGCGTCCATAGGAGAAGTGAGAATACTGTGAAAAAG
GGATGTTAGCATTCAATAGAGTATGAGGATGAGTCCCAAGAAGGTTCTTTGGAAGGAGGACGAATAGAATGGAGTAATGA
AATCTTGCCATGTGCTGAGGAGATAGCCAGCATTAGGTGACAATCTTCCAGAAGTGGTCAGGCAGAAGGTGCCCTGGTG
AGAGCTCCTTTACAGGGACTTTATGTGGTTTAGGGCTCAGAGCTCCAAACTCTGGGCTCAGCTGCTCCTGTACCTTGA
GGTCCATTACATGGGAAAGTATTTTGAATGTGCTTTTTGAAGAGAGCATCAGAGTTCTTAAGGGACTGGGTAAGGCCT
GACCCTGAAATGACCATGGATATTTTTCTACCTACAGTTTGAGTCAACTAGAATATGCCTGGGGACCTTGAAGAATGGCC
CTTCAGTGGCCCTCACCATTGTTTCATGCTTCAGTTAATTCAGGTGTTGAAGGAGCTTAGGTTTTAGAGGCACGTAGACT
TGGTTCAAGTCTCGTTAGTAGTTGAATAGCCTCAGGCAAGTCACTGCCCACCTAAGATGATGGTTCTTCAACTATAAAAT
GGAGATAATGGTTACAAATGTCTCTTCTATAGTATAATCTCCATAAGGGCATGGCCCAAGTCTGTCTTTGACTCTGCCT
ATCCCTGACATTTAGTAGCATGCCGACATACAATGTTAGCTATTGGTATTATTGCCATATAGATAAATTATGTATAAAA
ATTAACTGGGCAATAGCCTAAGAAGGGGGGAATATTGTAACACAAATTTAAACCCACTACGCAGGGATGAGGTGCTATA
ATATGAGGACCTTTTAACTTCCATCATTTTCTGTCTTCTGAAATAGTTTATCTTGTAATGAAATATAAGGCACCTCCCA
CTTTTATGTATAGAAAGAGGTCTTTTAAATTTTTTTTAAATGTGAGAAGGAAGGAGGAGTAGGAATCTTGAGATTCCAGA
TCGAAAATACTGTACTTTGGTTGATTTTTAAGTGGGCTTCCATTCCATGGATTTAATCAGTCCCAAGAAGATCAAACCTCA
GCAGTACTTGGGTGCTGAAGAACTGTTGGATTTACCCTGGCACGTGTGCCACTTGCCAGCTTCTTGGGCACACAGAGTTC
TTCAATCCAAGTTATCAGATTGTATTTGAAAAATGACAGAGCTGGAGAGTTTTTTGAAATGGCAGTGGCAAATAAATAAAT
ACTTTTTTTTAAATGAAAGACTTGATCTATGGAATAAATGATTTTGTCTTCTGACTGGAAAAATAGGCCTACTAAAGA
TGAATCACACTTGAGATGTTTCTTACTCACTCTGCACAGAAACAAAGAAGAAATGTTATACAGGGAAGTCCGTTTTCACT
ATTAGTATGAACCAAGAAATGGTTCAAAAACAGTGGTAGGAGCAATGCTTTCATAGTTTCAGATATGGTAGTTATGAAGA
AAACAATGTCATTTGCTGCTATTATTGTAAGAGTCTTATAATTAATGGTACTCCTATAATTTTTGATTGTGAGCTCACCT

ATTTGGGTAAAGCATGCCAATTTAAAGAGACCAAGTGTATGTACATTATGTTCTACATATTCAGTGATAAAATTACTAAA
 CTACTATATGTCTGCTTTAAATTTGTACTTTAATATTGTCTTTTGGTATTAAGAAAGATATGCTTTCAGAATAGATATGC
 TTCGCTTTGGCAAGGAATTTGGATAGAAGCTTGCTATTTAAAGAGGTGTGGGTAAATCCTTGTATAAATCTCCAGTTTA
 GCCTTTTTTGAAGGCTAGACTTTCAAATACTAATTTCACTTCAAGCAGGGTACGTTTCTGGTTTGTGTGCTTGACTTC
 AGTCACAATTTCTTATCAGACCAATGGCTGACCTCTTTGAGATGTCAGGCTAGGCTTACCTATGTGTTCTGTGTCATGTG
 AATGCTGAGAAGTTTGACAGAGATCCAACCTTCAGCCTTGACCCCATCAGTCCCTCGGGTTAACTAACTGAGCCACCGGTC
 CTCATGGCTATTTAATGAGGGTATTGATGGTTAAATGCATGTCTGATCCCTTATCCAGCCATTTGCACTGCCAGCTGG
 GAACTATAACCAGACCTGGATACTGATCCCAAAGTGTTAAATTCAACTACATGCTGGAGATTAGAGATGGTGCCAATAAAG
 GACCCAGAACCAGGATCTTGATTGCTATAGACTTATTAATAATCCAGGTCAAAGAGAGTGACACACACTCTCTCAAGACC
 TGGGGTGAGGGAGTCTGTGTTATCTGCAAGGCCATTTGAGGCTCAGAAAGTCTCTCTTTCTATAGATATATGCATACTT
 TCTGACATATAGGAATGTATCAGGAATACTCAACCATCACAGGCATGTTCTTACCTCAGGGCCTTTACATGTCCTGTTA
 CTCTGTCTAGAATGTCTTCTGTAGATGACCTGGCTTGCTCGTCACCTTCAGGTCCTTGCTCAAGTGTATCTTCTCC
 CCTAGTTAACTACCCACACCCCTGTCTGCTTTCCTTGCTTATTTTTCTCCATAGCATTTTACCATCTCTTACATTAGAC
 ATTTTTCTTATTTATTTGTAGTTTATAAGCTTCATGAGGCAAGTAACCTTTGCTTTGTTTCTTGCTGTATCTCCAGTGCCC
 AGAGCAGTGCCTGGTATATAATAAATATTTATTGACTGAGTGAA

Binding of the B cell activation antigen B7 to CD28 costimulates T cell
 proliferation and interleukin 2 mRNA accumulation

J Exp Med 173 (3), 721-730 (1991)

AACTTCGGGTTCCCTCGGGGAGGAGGGGCTGGAACCTAGCCCATCGTCAGGACAAAGATGCTCAGGCTGCTCTTGGCTC
 TCAACTTATTCCTTCAATTCAAGTAACAGGGAAACACCTTTGTCCAAGTCCCCTATTTCCCGGACCTTCTAAGCCCTTT
 TGGGTGCTGGTGGTGGTTGGTGGAGTCTGGCTTGCTATAGCTTGCTAGTAACAGTGGCCTTTATTATTTTCTGGGTGAG
 GAGTAAGAGGAGCAGGCTCCTGCACAGTGAATGACTACATGAACATGACTCCCCGCCGCCCGGGCCACCCGCAAGCATTACC
 AGCCCTATGCCCCACCGGACTTCGCAGCCTATCGCTCCTGACACGGACGCCTATCCAGAAGCCAGCCGGCTGGCAGC
 CCCCATCTGCTCAATATCACTGCTCTGGATAGGAAATGACCGCCATCTCCAGCCGCCACCTCAGGCCCCCTGTTGGGCCA
 CCAATGCCAATTTTCTCGAGTGAAGTACACCAAAATCAAGATCATTGAGACTCTGAAATGAAGTAAAGAGATTTC
 TGTGACAGGCCAAGTCTTACAGTGCCATGGCCACATTCCAACCTTACCATGTACTTAGTGACTTGACTGAGAAGTTAGGG
 TAGAAAACAAAAAGGAGTGGATTCTGGGAGCCTCTTCCCTTTCTCACTCACCTGCACATCTCAGTCAAGCAAAGTGTGG
 TATCCACAGACATTTTAGTTGCAGAAGAAAGGCTAGGAAATCATTCCCTTTTGTTAAATGGGTGTTTAACTCTTTTGGTTA
 GTGGGTAAACGGGGTAAGTTAGAGTAGGGGAGGGATAGGAAGACATATTTAAAAACCATTAAACACTGTCTCCCACT
 CATGAAATGAGCCACGTAGTTCTTATTTAATGCTGTTTTCTTTAGTTTAGAAATACATAGACATTGTCTTTTATGAATT
 CTGATCATATTTAGTCATTTTGACCAAATGAGGGATTTGGTCAAATGAGGGATTCCCTCAAAGCAATATCAGGTAAACCA
 AGTTGCTTTCTCACTCCCTGTCATGAGACTTCAGTGTTAATGTTTACAATATACTTTGAAAGAATAAAATAGTTCTCC
 TACATGAAGAAAGAAATATGTCAGGAAATAAGGTCACTTTATGTCAAAATTATTTGAGTACTATGGGACCTGGCGCAGTGG
 CTCATGCTTGTAAATCCCAGCACTTTGGGAGCCGAGGTGGGCAGATCACTTGAGATCAGGACCAGCCTGGTCAAGATGGT
 GAAACTCCGTCTGTACTAAAAATACAAATTTAGCTTGGCCTGGTGGCAGGCACCTGTAATCCCAGCTGCCAAGAGGCT
 GAGGCATGAGAATCGCTTGAACCTGGCAGGCGGAGGTTGCAGTGAGCCGAGATAGTGCCACAGCTCTCCAGCCTGGGCGA
 CAGAGTGAGACTCCATCTCAAACAACAACAACAACAACAACAACAACAACCACAAAATTATTTGAGTACTGTGAAG
 GATTATTTGTCTAACAGTTCATTCCAATCAGACCAGGTAGGAGCTTTCTGTTTCATATGTTTCAGGGTTGCACAGTTGG
 TCTCTTTAATGTCGGTGTGGAGATCCAAAGTGGGTTGTGGAAAGAGCGTCCATAGGAGAAGTGAATACTGTGAAAAAG
 GGATGTTAGCATTTCATTAGAGTATGAGGATGAGTCCCAAGAAGGTTCTTTGGAAGGAGGACGAATAGAATGGAGTAATGA
 AATCTTGCCATGTGCTGAGGAGATAGCCAGCATTAGGTGACAATCTTCCAGAAGTGGTCAGGCAGAAGGTGCCCTGGTG
 AGAGCTCCTTTACAGGGACTTTATGTGTTTATGGGCTCAGAGCTCCAAACTCTGGGCTCAGCTGCTCCTGTACCTTGA
 GGTCCATTACATGGGAAAGTATTTTGAATGTGCTTTTGAAGAGAGCATCAGAGTTCTTAAGGGACTGGGTAAGGCCT
 GACCCTGAAATGACCATGGATATTTTTCTACCTACAGTTTGTAGTCAACTAGAAATATGCCTGGGGACCTTGAAGAATGGCC
 CTTCACTGGCCCTCACCATTTGTTTCATGCTTCAGTTAATTCAGGTGTTGAAGGAGCTTAGGTTTTAGAGGCACGTAGACT
 TGTTTCAAGTCTCGTTAGTAGTTGAATAGCCTCAGGCAAGTCACTGCCCACCTAAGATGATGGTTCTTCAACTATAAAAT
 GGAGATAATGGTTACAAATGTCTCTTCTATAGTATAATCTCCATAAGGGCATGGCCCAAGTCTGTCTTTGACTCTGCCT

ATCCCTGACATTTAGTAGCATGCCCCACATACAATGTTAGCTATTGGTATTATTGCCATATAGATAAATTATGTATAAAAA
 ATTAAACTGGGCAATAGCCTAAGAAGGGGGGAATATTGTAACACAAATTTAAACCCACTACGCAGGGATGAGGTGCTATA
 ATATGAGGACCTTTTAACTTCCATCATTTTTCCTGTTTCTTGAAATAGTTTATCTTGTAAATGAAATATAAGGCACCTCCCA
 CTTTTATGTATAGAAAGAGGTCTTTTAAATTTTTTTTTAATGTGAGAAGGAAGGGAGGAGTAGGAATCTTGAGATTCCAGA
 TCGAAAATACTGTACTTTGGTTGATTTTAAAGTGGGCTTCCATTCCATGGATTTAATCAGTCCCAAGAAGATCAAACCTCA
 GCAGTACTTGGGTGCTGAAGAACTGTTGGATTACCCTGGCAGCTGTGCCACTTGGCAGCTTCTTGGGCACACAGAGTTC
 TTCAATCCAAGTTATCAGATTGTATTTGAAAATGACAGAGCTGGAGAGTTTTTTGAATGGCAGTGGCAAATAAATAAAT
 ACTTTTTTTTTAAATGGAAGACTTGATCTATGGTAATAAATGATTTTGTCTTCTGACTGGAAAAATAGGCCTACTAAAGA
 TGAATCACACTTGAGATGTTTCTTACTCACTCTGCACAGAAACAAAGAAGAAATGTTATACAGGGAAGTCCGTTTTCTACT
 ATTAGTATGAACCAAGAAATGGTTCAAAAACAGTGGTAGGAGCAATGCTTTCATAGTTTCAGATATGGTAGTTATGAAGA
 AAACAATGTCATTTGCTGCTATTATTGTAAGAGTCTTATAATTAATGGTACTCCTATAATTTTTGATTGTGAGCTCACCT
 ATTTGGGTAAAGCATGCCAATTTAAAGAGACCAAGTGTATGTACATTATGTTCTACATATTCAGTGATAAAATTACTAAA
 CTACTATATGTCTGCTTTAAATTTGTACTTTAATATTGTCTTTTGGTATTAAGAAAGATATGCTTTCAGAATAGATATGC
 TTCGCTTTGGCAAGGAATTTGGATAGAAGTGTCTATTTAAAGAGGTGTGGGGTAAATCCTTGTATAAATCTCCAGTTTA
 GCCTTTTTTTGAAAAGCTAGACTTTCAAATACTAATTTCACTTCAAGCAGGGTACGTTTCTGGTTTGTGTTGCTTGACTTC
 AGTCACAATTTCTTATCAGACCAATGGCTGACCTCTTTGAGATGTCAGGCTAGGCTTACCTATGTGTTCTGTGTCATGTG
 AATGCTGAGAAGTTTGACAGAGATCCAACCTTCAGCCTTGACCCCATCAGTCCCTCGGGTTAACTAACTGAGCCACCGGTC
 CTCATGGCTATTTAATGAGGGTATTGATGGTTAAATGCATGTCTGATCCCTTATCCCAGCCATTTGCACTGCCAGCTGG
 GAACTATAACCAGACCTGGATACTGATCCCAAAGTGTTAAATTCAACTACATGCTGGAGATTAGAGATGGTGCCAATAAAG
 GACCCAGAACCAGGATCTTGATTGCTATAGACTTATTAATAATCCAGGTCAAAGAGAGTGACACACACTCTCTCAAGACC
 TGGGGTGAGGGAGTCTGTGTTATCTGCAAGGCCATTTGAGGCTCAGAAAGTCTCTCTTTCCTATAGATATATGCATACTT
 TCTGACATATAGGAATGTATCAGGAATACTCAACCATCACAGGCATGTTTCTACCTCAGGGCCTTTACATGTCCTGTTTA
 CTCTGTCTAGAATGTCCTTCTGTAGATGACCTGGCTTGCTCGTCACCCCTTCAGGTCCTTGCTCAAGTGTCTCTTCTCC
 CCTAGTTAAACTACCCACACCCCTGTCTGCTTTCCTTGCTTATTTTTCTCCATAGCATTTTACCATCTCTTACATTAGAC
 ATTTTTCTTATTTATTTGTAGTTTATAAGCTTCATGAGGCAAGTAACCTTTGCTTTGTTTCTTGCTGTATCTCCAGTGCCC
 AGAGCAGTGCCTGGTATATAATAAATATTTATTGACTGAGTGAA

The murine homologue of the T lymphocyte antigen CD28. Molecular cloning and cell surface expression

J Immunol 144 (8), 3201-3210 (1990)

ACACTTCGGGTTCTCGGGGAGGAGGGGCTGGAACCTAGCCCATCGTCAGGACAAAGATGCTCAGGCTGCTCTTGGCTC
 TCAACTTATTCCTTCAATTCAAGTAACAGGGAAACACCTTTGTCCAAGTCCCCTATTTCCCGGACCTTCTAAGCCCTTT
 TGGGTGCTGGTGGTGGTTGGTGGAGTCCTGGCTTGCTATAGCTTGCTAGTAACAGTGGCCTTTATTATTTTCTGGGTGAG
 GAGTAAGAGGAGCAGGCTCCTGCACAGTGAATGACATGAACATGACTCCCCGCCGCCCGGGCCACCCGCAAGCATTACC
 AGCCCTATGCCCCACACGCGACTTCGCAGCCTATCGCTCCTGACACGGACGCCTATCCAGAAGCCAGCCGGCTGGCAGC
 CCCCATCTGCTCAATATCACTGCTCTGGATAGGAAATGACCGCCATCTCCAGCCGGCCACCTCAGGCCCCCTGTTGGGCCA
 CCAATGCCAATTTTTCTCGAGTGAAGTACCAAAATATCAAGATCATTTTGAAGTCTGAAATGAAGTAAAGAGATTTC
 TGTGACAGGCCAAGTCTTACAGTGCCATGGCCACATTCCAACCTACCATGTACTTAGTGACTTGACTGAGAAGTTAGGG
 TAGAAAACAAAAAGGAGTGGATTCTGGGAGCCTCTCCCTTTCTCACTCACCTGCACATCTCAGTCAAGCAAAGTGTGG
 TATCCACAGACATTTTAGTTGAGAGAAAGGCTAGGAAATCATTCCTTTTGGTTAAATGGGTGTTTAAATCTTTTGGTTA
 GTGGGTAAACGGGGTAAGTTAGAGTAGGGGAGGGATAGGAAGACATATTTAAAAACCATTAACAACTGTCTCCCACT
 CATGAAATGAGCCACGTAGTTCTATTTAATGCTGTTTTCTTTAGTTTAGAAATACATAGACATTGTCTTTTATGAATT
 CTGATCATATTTAGTCATTTTGACCAAATGAGGGATTTGGTCAAATGAGGGATTCCCTCAAAGCAATATCAGGTAAACCA
 AGTTGCTTTCTCACTCCCTGTCTGATGAGACTTCAGTGTTAATGTTTCAATATACTTTTGAAAGAATAAATAGTTCTCC
 TACATGAAGAAAGAAATATGTCAGGAAATAAGTCACTTTATGTCAAAATATTTTGAAGTACTATGGGACCTGGCGCAGTGG
 CTCATGCTTGAATCCCAGCACTTTGGGAGGCCGAGGTGGGCAGATCACTTGAGATCAGGACCAGCCTGGTCAAGATGGT
 GAACTCCGCTGTACTAAAAATACAAATTTAGCTTGGCCTGGTGGCAGGCACCTGTAATCCAGCTGCCCAAGAGGCT
 GAGGCATGAGAATCGCTTGAACCTGGCAGGCGGAGGTGTCAGTGAGCCGAGATAGTGCCACAGCTCTCCAGCCTGGGCGA

CAGAGTGAGACTCCATCTCAAACAACAACAACAACAACAACAACAACAACCACAAAATTATTTGAGTACTGTGAAG
 GATTATTTGTCTAACAGTTCATTCCAATCAGACCAGGTAGGAGCTTTCTGTTCATATGTTTCAGGGTTGCACAGTTGG
 TCTCTTTAATGTCGGTGTGGAGATCCAAAGTGGGTGTGGAAAGAGCGTCCATAGGAGAAGTGAGAATACTGTGAAAAAG
 GGATGTTAGCATTCAATAGAGTATGAGGATGAGTCCCAAGAAGGTTCTTTGGAAGGAGGACGAATAGAATGGAGTAATGA
 AATTCTTGCCATGTGCTGAGGAGATAGCCAGCATTAGGTGACAATCTTCCAGAAGTGGTCAGGCAGAAGGTGCCCTGGTG
 AGAGCTCCTTTACAGGGACTTTATGTGGTTTAGGGCTCAGAGCTCCAAAACCTCTGGGCTCAGCTGCTCCTGTACCTTGA
 GGTCCATTACATGGGAAAGTATTTTGAATGTGTCTTTTGAAGAGAGCATCAGAGTCTTAAGGGACTGGGTAAGGCCT
 GACCCTGAAATGACCATGGATATTTTTCTACCTACAGTTTGAGTCAACTAGAATATGCCTGGGGACCTTGAAGAATGGCC
 CTTCACTGGCCCTCACCATTTGTTTCATGCTTCAGTTAATTCAGGTGTTGAAGGAGCTTAGGTTTTAGAGGCACGTAGACT
 TGGTTCAAGTCTCGTTAGTAGTTGAATAGCCTCAGGCAAGTCACTGCCCACCTAAGATGATGGTTCTTCAACTATAAAAT
 GGAGATAATGGTTACAAATGTCTCTTCTATAGTATAATCTCCATAAGGGCATGGCCCAAGTCTGTCTTTGACTCTGCCT
 ATCCCTGACATTTAGTAGCATGCCCGACATACAATGTTAGCTATTGGTATTATTGCCATATAGATAAATTATGTATAAAA
 ATTAACTGGGCAATAGCCTAAGAAGGGGGGAATATTGTAACACAAATTTAAACCCACTACGCAGGGATGAGGTGCTATA
 ATATGAGGACCTTTAACTTCCATCATTTTTCTGTCTTCTTGAATAGTTTATCTTGTAAATGAAATATAAGGCACCTCCCA
 CTTTTATGTATAGAAAGAGGTCTTTTAATTTTTTTTAAATGTGAGAAGGAAGGGAGGAGTAGGAATCTTGAGATTCCAGA
 TCGAAAATACTGTACTTTGGTTGATTTTTAAGTGGGCTTCCATTCCATGGATTAAATCAGTCCCAAGAAGATCAAACCTCA
 GCAGTACTTGGGTGCTGAAGAAGTGTGGATTACCTGGCAGTGTGCCACTTGCCAGCTTCTTGGGCACACAGAGTTC
 TTCAATCCAAGTTATCAGATTGTATTTGAAAATGACAGAGCTGGAGAGTTTTTTTGAATGGCAGTGGCAAATAAATAAAT
 ACTTTTTTTTTAAATGGAAAGACTTGATCTATGGTAATAAATGATTTTGTCTTCTGACTGGAAAAATAGGCCTACTAAAGA
 TGAATCACACTTGAGATGTTTCTTACTCACTCTGCACAGAAACAAAGAAGAAATGTTATACAGGGAAGTCCGTTTTCTACT
 ATTAGTATGAACCAAGAAATGGTTCAAAAACAGTGGTAGGAGCAATGCTTTCATAGTTTCAGATATGGTAGTTATGAAGA
 AAACAATGTCATTTGCTGCTATTATTGTAAGAGTCTTATAATTAATGGTACTCCTATAATTTTTGATTGTGAGCTCACCT
 ATTTGGGTTAAGCATGCCAATTTAAAGAGACCAAGTGTATGTACATTATGTTCTACATATTCAGTGATAAAATTACTAAA
 CTACTATATGTCTGCTTTAAATTTGTACTTTAATATTGTCTTTTGGTATTAAGAAAGATATGCTTTCAGAATAGATATGC
 TTCGCTTTGGCAAGGAATTTGGATAGAAGTGTCTATTTAAAGAGGTGTGGGGTAAATCCTTGATAAATCTCCAGTTTA
 GCCTTTTTTTGAAAAAGCTAGACTTTCAAATACTAATTTCACTTCAAGCAGGTACGTTTCTGGTTTGTGTGCTTACTTC
 AGTCACAATTTCTTATCAGACCAATGGCTGACCTCTTTGAGATGTCAGGCTAGGCTTACCTATGTGTTCTGTGTCATGTG
 AATGCTGAGAAGTTTGACAGAGATCCAACCTTCAGCCTTGACCCCATCAGTCCCTCGGGTAACTAACTGAGCCACCGGTC
 CTCATGGCTATTTAATGAGGGTATTGATGGTTAAATGCATGTCTGATCCCTTATCCAGCCATTTGCACTGCCAGCTGG
 GAACTATACCAGACCTGGATACTGATCCCAAAGTGTAAATTCAACTACATGCTGGAGATTAGAGATGGTGCCAATAAAG
 GACCCAGAACCAGGATCTTGATTGCTATAGACTTATTAATAATCCAGGTCAAAGAGAGTGACACACACTCTCTCAAGACC
 TGGGGTGAGGGAGTCTGTGTTATCTGCAAGGCCATTTGAGGCTCAGAAAGTCTCTCTTCTCTATAGATATATGCATACTT
 TCTGACATATAGGAATGTATCAGGAATACTCAACCATCACAGGCATGTTTCTACCTCAGGGCCTTTACATGTCCTGTTTA
 CTCTGTCTAGAATGTCCTTCTGTAGATGACCTGGCTTGCTCGTCACCCTTCAGGTCCTTGCTCAAGTGTATCTTCTCC
 CCTAGTTAACTACCCACACCCCTGTCTGCTTTCCTTGCTATTTTTCTCCATAGCATTTTACCATCTCTTACATTAGAC
 ATTTTTCTTATTTATTTGTAGTTTATAAGCTTCATGAGGCAAGTAACCTTTGCTTTGTTTCTTGCTGTATCTCCAGTGCCC
 AGAGCAGTGCCTGGTATATAATAAATATTTATTGACTGAGTGAA

Human CD28 and CTLA-4 Ig superfamily genes are located on chromosome 2 at bands q33-q34

Immunogenetics 31 (3), 198-201 (1990)

AACTTCGGGTTCCCTCGGGGAGGAGGGCTGGAACCCTAGCCCATCGTCAGGACAAAGATGCTCAGGCTGCTCTTGGCTC
 TCAACTTATTCCTTCAATTCAAGTAACAGGGAAACACCTTTGTCCAAGTCCCCTATTTCCCGGACCTTCTAAGCCCTTT
 TGGGTGCTGGTGGTGGTGGTGGAGTCCCTGGCTTGTCTATAGCTTGTAGTAACAGTGGCCTTTATTATTTTCTGGGTGAG
 GAGTAAGAGGAGCAGGCTCCTGCACAGTGAATGAACATGACTCCCGCCGCCCCGGGCCCCACCCGCAAGCATTACC
 AGCCCTATGCCCCACCGGACTTCGACGCTATCGTCTGACACGGACGCTATCCAGAAGCCAGCCGGCTGGCAGC
 CCCCATCTGCTCAATATCACTGCTCTGGATAGGAAATGACCGCCATCTCCAGCCGGCCACCTCAGGCCCTGTTGGGCCA
 CCAATGCCAATTTTTCTCGAGTGAATAGACCAAATATCAAGATCATTTTGTAGACTCTGAAATGAAGTAAAGAGATTTCC

TGTGACAGGCCAAGTCTTACAGTGCCATGGCCCACATTCCAACCTACCATGTACTTAGTGACTTGACTGAGAAGTTAGGG
TAGAAAACAAAAAGGGAGTGGATTCTGGGAGCCTCTTCCCTTTCTCACTCACCTGCACATCTCAGTCAAGCAAAGTGTGG
TATCCACAGACATTTTAGTTGCAGAAGAAAGGCTAGGAAATCATTCTTTTGGTTAAATGGGTGTTTAAATCTTTTGGTTA
GTGGGTAAACGGGGTAAGTTAGAGTAGGGGGAGGGATAGGAAGACATATTTAAAAACCATTAAACACTGTCTCCCACT
CATGAAATGAGCCACGTAGTTCCTATTTAATGCTGTTTTCTTTAGTTTAGAAATACATAGACATTGTCTTTTATGAATT
CTGATCATATTTAGTCATTTTGACCAAATGAGGGATTTGGTCAAATGAGGGATTCCCTCAAAGCAATATCAGGTAAACCA
AGTTGCTTTCTCACTCCCTGTCTGAGACTTCAGTGTTAATGTTTACAATATACTTTCGAAAGAATAAAATAGTTCTCC
TACATGAAGAAAGAATATGTCAGGAAATAAGGTCACTTTATGTCAAAATTATTTGAGTACTATGGGACCTGGCGCAGTGG
CTCATGCTTGTAAATCCCAGCACTTTGGGAGGCCGAGGTGGGCAGATCACTTGAGATCAGGACCAGCCTGGTCAAGATGGT
GAAACTCCGTCTGTACTAAAAATACAAAATTTAGCTTGGCCTGGTGGCAGGCACCTGTAATCCAGCTGCCCAAGAGGCT
GAGGCATGAGAATCGCTTGAACCTGGCAGGCGGAGGTTGCAGTGAGCCGAGATAGTGCCACAGCTCTCCAGCCTGGGCGA
CAGAGTGAGACTCCATCTCAAAACAACAACAACAACAACAACAACAACCACAAAATTATTTGAGTACTGTGAAG
GATTATTTGTCTAACAGTTCATTCCAATCAGACCAGGTAGGAGCTTTCCTGTTTCATATGTTTCAGGGTTGCACAGTTGG
TCTCTTTAATGTCGGTGTGGAGATCCAAAGTGGGTTGTGGAAAGAGCGTCCATAGGAGAAGTGAGAATACTGTGAAAAAG
GGATGTTAGCATTCAATAGAGTATGAGGATGAGTCCCAAGAAGGTTCTTTGGAAGGAGGACGAATAGAATGGAGTAATGA
AATTCTTGCCATGTGCTGAGGAGATAGCCAGCATTAGGTGACAATCTTCCAGAAGTGGTCAGGCAGAAGGTGCCCTGGTG
AGAGCTCCTTTACAGGGACTTTATGTGGTTTAGGGCTCAGAGCTCCAAACTCTGGGCTCAGCTGCTCCTGTACCTTGA
GGTCCATTACATGGGAAAGTATTTTGAATGTGTCTTTTGAAGAGAGCATCAGAGTTCTTAAGGGACTGGGTAAGGCCT
GACCTGAAATGACCATGGATATTTTCTACCTACAGTTTGAGTCAACTAGAAATATGCCTGGGGACCTTGAAGAATGGCC
CTTCAGTGGCCCTCACCATTTGTTTCATGCTTCAGTTAATTCAGGTGTTGAAGGAGCTTAGGTTTTAGAGGCACGTAGACT
TGGTTCAAGTCTCGTTAGTAGTTGAATAGCCTCAGGCAAGTCACTGCCCACCTAAGATGATGGTTCTTCAACTATAAAAT
GGAGATAATGGTTACAAATGTCTCTTCTATAGTATAATCTCCATAAGGGCATGGCCAAGTCTGTCTTTGACTCTGCCT
ATCCCTGACATTTAGTAGCATGCCCCACATACAATGTTAGCTATTGGTATTATTGCCATATAGATAAATTATGTATAAAA
ATTAACTGGGCAATAGCCTAAGAAGGGGGGAATATTGTAACACAAATTTAAACCCACTACGCAGGGATGAGGTGCTATA
ATATGAGGACCTTTTAACTCCATCATTTTCTGTTTCTTGAAATAGTTTATCTTGTAATGAAATATAAGGCACCTCCCA
CTTTTATGTATAGAAAGAGGTCTTTTAAATTTTTTTTAAATGTGAGAAGGAAGGGAGGAGTAGGAATCTTGAGATTCCAGA
TCGAAAATACTGTACTTTGGTTGATTTTAAAGTGGGCTTCCATTCCATGGATTTAATCAGTCCCAAGAAGATCAAACCTCA
GCAGTACTTGGGTGCTGAAGAACTGTTGGATTTACCCTGGCACGTGTGCCACTTGCCAGCTTCTTGGGCACACAGAGTTC
TTCAATCCAAGTTATCAGATTGTATTTGAAAAATGACAGAGCTGGAGAGTTTTTTGAAATGGCAGTGGCAAATAAATAAAT
ACTTTTTTTTTAAATGGAAAGACTTGATCTATGGAATAAATGATTTTGTCTTCTGACTGGAAAAATAGGCCTACTAAAGA
TGAATCACACTTGAGATGTTTCTTACTCACTCTGCACAGAAACAAAGAAGAAATGTTATACAGGGAAGTCCGTTTTCTACT
ATTAGTATGAACCAAGAAATGGTTCAAAAACAGTGGTAGGAGCAATGCTTTCATAGTTTCAGATATGGTAGTTATGAAGA
AAACAATGTCAATTTGCTGCTATTATTGTAAGAGTCTTATAATTAATGGTACTCCTATAATTTTTGATTGTGAGCTCACCT
ATTTGGGTAAAGCATGCCAATTTAAAGAGACCAAGTGTATGTACATTATGTTCTACATATTCAGTGATAAAATTACTAAA
CTACTATATGTCTGCTTTAAATTTGTACTTTAATATTGTCTTTTGGTATTAAGAAAGATATGCTTTCAGAATAGATATGC
TTCGCTTTGGCAAGGAATTTGGATAGAACTTGCTATTTAAAGAGGTGTGGGGTAAATCCTTGATATAAATCTCCAGTTTA
GCCTTTTTTAAAAAGCTAGACTTTCAAATACTAATTTCACTTCAAGCAGGTACGTTTCTGGTTTGTGTGCTTGACTTC
AGTCACAATTTCTTATCAGACCAATGGCTGACCTCTTTGAGATGTCAGGCTAGGCTTACCTATGTGTTCTGTGTCTATGTG
AATGCTGAGAAGTTTGACAGAGATCCAACCTCAGCCTTGACCCCATCAGTCCCTCGGGTAACTAACTGAGCCACCGGTC
CTCATGGCTATTTAATGAGGGTATTGATGGTTAAATGCATGTCTGATCCCTTATCCCAGCCATTTGCACTGCCAGCTGG
GAACTATACCAGACCTGGATACTGATCCCAAAGTGTTAAATTTCAACTACATGCTGGAGATTAGAGATGGTGCCAAATAAG
GACCCAGAACCAGGATCTTGATTGCTATAGACTTATTAATAATCCAGGTCAAAGAGAGTGACACACACTCTCTCAAGACC
TGGGGTGAGGGAGTCTGTGTTATCTGCAAGGCCATTTGAGGCTCAGAAAGTCTCTCTTCTCTATAGATATATGCATACTT
TCTGACATATAGGAATGTATCAGGAATACTCAACCATCACAGGCATGTTTCTACCTCAGGGCCTTTACATGTCTGTGTTA
CTCTGTCTAGAATGTCTTCTGTAGATGACCTGGCTTGCTCGTCAACCTTCAAGTCTTGGCTCAAGTGTCTCTCTCTCC
CCTAGTTAAACTACCCACACCCTGTCTGCTTTCCTTGCTTATTTTTCTCCATAGCATTTTACCATCTCTTACATTAGAC
ATTTTTCTTATTTATTTGTAGTTTATAAGCTTCATGAGGCAAGTAACCTTTGCTTTGTTTCTTGCTGTATCTCCAGTGCCC
AGAGCAGTGCCTGGTATATAATAAATATTTATTGACTGAGTGAA

Increases of CD80 and CD86 Expression on Peripheral Blood Cells and their Gene Polymorphisms in Autoimmune Thyroid Disease

Immunol Invest 49 (1-2), 191-203 (2020)

AGTCATTGCCGAGGAAGGCTTGACAGGGTGAAAGCTTTGCTTCTCTGCTGCTGTAACAGGGACTAGCACAGACACACGG
ATGAGTGGGGTCATTTCCAGATATTAGGTCACAGCAGAAGCAGCCAAAATGGATCCCCAGTGCACTATGGGACTGAGTAA
CATTCTCTTTGTGATGGCCTTCCTGCTCTCTGCTAACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAA
ATGTGTACATAAAATTTGACCTGCTCATCTATACACGGTTACCCAGAACCTAAGAAGATGAGTGTTTTGCTAAGAACCAAG
AATTCAACTATCGAGTATGATGGTGTTATGCAGAAATCTCAAGATAATGTCACAGAACTGTACGACGTTTCCATCAGCTT
GTCTGTTTTCATTCCTGATGTTACGAGCAATATGACCATCTTCTGTATTCTGGAACTGACAAGACGCGGCTTTTTATCTT
CACCTTTCTCTATAGAGCTTGAGGACCCTCAGCCTCCCCAGACCACATTCCTTGATTACAGCTGTACTTCCAACAGTT
ATTATATGTGTGATGGTTTTCTGTCTAATTCTATGGAAATGGAAGAAGAAGAAGCGGCCTCGCAACTCTTATAAATGTGG
AACCAACACAATGGAGAGGGAAGAGAGTGAACAGACCAAGAAAAGAGAAAAATCCATATACCTGAAAGATCTGATGAAG
CCCAGCGTGTTTTTAAAAGTTGGAAGACATCTTCATGCGACAAAAGTGATACATGTTTTTAATTAAGAGTAAAGCCCAT
ACAAGTATTCAATTTTTCTACCCTTTCTTTGTAAGTTCCTGGGCAACCTTTTTGATTTCTTCCAGAAGGCAAAAAGACA
TTACCATGAGTAATAAGGGGGCTCCAGGACTCCCTCTAAGTGAATAGCCTCCCTGTAACCTCCAGCTCTGCTCCGTATGC
CAAGAGGAGACTTTAATTCTCTTACTGCTTCTTTTCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCAT
GACCTGGAAATAAAATTTAGGACCAATACCTCCTCCAGATCAGATTCTTCTCTTAATTTTCATAGATTGTGTTTTTTTTTT
AAATAGACCTCTCAATTTCTGGAAAAGTGCCTTTTATCTGCCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGT
ACCTGTGACTAAACAACCTACCTCCTCAGTCTGGGTGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAACA
TAGAGATCTATGTAAGTGTGATTACTATGCTCTAGAGAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCT
GTCAGGGTCAGTAAGGAAAACGGTGGCCTAGGGTACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAG
AGGCAGAGATAGAACCTGGAGCCACTTCTATCTGGGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCAACAAGCCATA
GTGGAGAGAACTGAATAAACAGGAAAATGCCAGAGCTTGTGAACCTGTTTCTCTGAAGAACTGACTAGTGAGATGGCC
TGGGGAAGCTGTGAAAGAACCAAAAGAGATCACAATACTCAAAAGAGAGAGAGAGAGAAAAAGAGAGATCTTGATCCAC
AGAAATACATGAAATGTCTGGTCTGTCCACCCCATCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATG
GACATAAGACAGACAGCAGTTTTCCCTGGTGGTCAGGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCCT
GGAAGCAGAGCTGGGGAGGGAGAGCCATCACCTTGATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGC
TGAGAGAGGAAGAGCTGCAACGGAATTAGGAAGACCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCTTA
CGGGAACGTGGGCTGGCCCAGCATAGGGCTAGCAAATTTGAGTTGGATGATTGTTTTTGTCTCAAGGCAACCAGAGGAAAC
TTGCATACAGAGACAGATATACTGGGAGAAATGACTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGCGAG
TCTCTGCCCCAACATAAAGAGAACTCTGGGGAGCCTGAGCCACAAAAATGTTCCCTTTATTTTATGTAAACCCTCAAGGGT
TATAGACTGCCATGCTAGACAAGCTTGTCCATGTAATATTCCTATGTTTTTACCCTGCCCCCTGCCTTGATTAGACTCCTA
GCACCTGGCTAGTTTCTAACATGTTTTGTGCAGCACAGTTTTTAATAAATGCTTGTTACATTCA

Cowpox virus encodes a protein that binds B7.1 and B7.2 and subverts T cell costimulation

Proc Natl Acad Sci U S A 116 (42), 21113-21119 (2019)

AGTCATTGCCGAGGAAGGCTTGACAGGGTGAAAGCTTTGCTTCTCTGCTGCTGTAACAGGGACTAGCACAGACACACGG
ATGAGTGGGGTCATTTCCAGATATTAGGTCACAGCAGAAGCAGCCAAAATGGATCCCCAGTGCACTATGGGACTGAGTAA
CATTCTCTTTGTGATGGCCTTCCTGCTCTCTGCTAACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAA
ATGTGTACATAAAATTTGACCTGCTCATCTATACACGGTTACCCAGAACCTAAGAAGATGAGTGTTTTGCTAAGAACCAAG
AATTCAACTATCGAGTATGATGGTGTTATGCAGAAATCTCAAGATAATGTCACAGAACTGTACGACGTTTCCATCAGCTT
GTCTGTTTTCATTCCTGATGTTACGAGCAATATGACCATCTTCTGTATTCTGGAACTGACAAGACGCGGCTTTTTATCTT
CACCTTTCTCTATAGAGCTTGAGGACCCTCAGCCTCCCCAGACCACATTCCTTGATTACAGCTGTACTTCCAACAGTT
ATTATATGTGTGATGGTTTTCTGTCTAATTCTATGGAAATGGAAGAAGAAGAAGCGGCCTCGCAACTCTTATAAATGTGG
AACCAACACAATGGAGAGGGAAGAGAGTGAACAGACCAAGAAAAGAGAAAAATCCATATACCTGAAAGATCTGATGAAG
CCCAGCGTGTTTTTAAAAGTTGGAAGACATCTTCATGCGACAAAAGTGATACATGTTTTTAATTAAGAGTAAAGCCCAT

ACAAGTATTCATTTTTCTACCTTTCTTTGTAAGTTCCTGGGCAACCTTTTTGATTTCTTCCAGAAGGCAAAAAGACA
TTACCATGAGTAATAAGGGGGCTCCAGGACTCCCTCTAAGTGGAATAGCCTCCCTGTAAGTCCAGCTCTGCTCCGTATGC
CAAGAGGAGACTTTAATTCTCTTACTGCTTCTTTCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCAT
GACCTGGAAATAAAATTTAGGACCAATACCTCCTCCAGATCAGATTCTTCTCTTAATTTCATAGATTGTGTTTTTTTTTT
AAATAGACCTCTCAATTTCTGGAAAACCTGCTTTTATCTGCCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGT
ACCTGTGACTAAACAACCTACCTCCTCAGTCTGGGTGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAACA
TAGAGATCTATGTAAGTGTGATTACTATGCTCTAGAGAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCT
GTCAGGGTCAGTAAGGAAAACGGTGGCCTAGGGTACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAG
AGGCAGAGATAGAACCTGGAGCCACTTCTATCTGGGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCAACAAGCCATA
GTGGAGAGAACTGAATAAACAGGAAAATGCCAGAGCTTGTGAACCCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCC
TGGGGAAGCTGTGAAAGAACCAAAAGAGATCACAATACTCAAAAGAGAGAGAGAGAGAAAAAGAGAGATCTTGATCCAC
AGAAATACATGAAATGTCTGGTCTGTCCACCCCATCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATG
GACATAAGACAGACAGCAGTTTCCCTGGTGGTCAGGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCCT
GGAAGCAGAGCTGGGGAGGGAGAGCCATCACCTTGATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGC
TGAGAGAGGAAGAGCTGCAACGGAATTAGGAAGACCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGCTCTA
CGGGAACGTGGGCTGGCCCAGCATAGGGCTAGCAAATTTGAGTTGGATGATTGTTTTTGTCTCAAGGCAACCAGAGGAAAC
TTGCATACAGAGACAGATATACTGGGAGAAATGACTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAG
TCTCTGCCCCAACATAAAGAGAACTCTGGGGAGCCTGAGCCACAAAAATGTTCTTTATTTTATGTAAACCCTCAAGGGT
TATAGACTGCCATGCTAGACAAGCTTGTCCATGTAATATCCCATGTTTTTACCCTGCCCTGCCTTGATTAGACTCCTA
GCACCTGGCTAGTTTCTAACATGTTTTGTGCAGCACAGTTTTTAATAAATGCTTGTTACATTCA

Genetic association between cluster of differentiation 86 variations and sepsis
risk: A case-control study

Medicine (Baltimore) 98 (43), e17482 (2019)

AGTCATTGCCGAGGAAGGCTTGACAGGGTGAAGCTTTGCTTCTCTGCTGCTGTAACAGGGACTAGCACAGACACACGG
ATGAGTGGGGTCATTTCCAGATATTAGGTCACAGCAGAAGCAGCCAAAATGGATCCCCAGTGCACTATGGGACTGAGTAA
CATTCTCTTTGTGATGGCCTTCTGCTCTCTGCTAACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAA
ATGTGTACATAAATTTGACCTGCTCATCTATACACGGTTACCCAGAACCTAAGAAGATGAGTGTTTTGCTAAGAACCAAG
AATTCAACTATCGAGTATGATGGTGTATGCAGAAATCTCAAGATAATGTCACAGAACTGTACGACGTTTCCATCAGCTT
GTCTGTTTTCATTCCTGATGTTACGAGCAATATGACCATCTTCTGTATTCTGGAAGTGAACAAGACGCGGCTTTTATCTT
CACCTTTCTCTATAGAGCTTGAGGACCCTCAGCCTCCCCAGACCACATTCCTTGATTACAGCTGTACTTCCAACAGTT
ATTATATGTGTGATGGTTTTCTGTCTAATTCTATGGAATGGAAGAAGAAGCGGCCCTCGAACTCTTATAAATGTGG
AACCAACACAATGGAGAGGGAAGAGAGTGAACAGACCAAGAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAG
CCCAGCGTGTTTTAAAAGTTTGAAGACATCTTCATGCGACAAAAGTGATACATGTTTTTAATTAAGAGTAAAGCCCAT
ACAAGTATTCATTTTTCTACCTTTCTTTGTAAGTTCCTGGGCAACCTTTTTGATTTCTTCCAGAAGGCAAAAAGACA
TTACCATGAGTAATAAGGGGGCTCCAGGACTCCCTCTAAGTGGAATAGCCTCCCTGTAAGTCCAGCTCTGCTCCGTATGC
CAAGAGGAGACTTTAATTCTCTTACTGCTTCTTTCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCAT
GACCTGGAAATAAAATTTAGGACCAATACCTCCTCCAGATCAGATTCTTCTCTTAATTTCATAGATTGTGTTTTTTTTTT
AAATAGACCTCTCAATTTCTGGAAAACCTGCTTTTATCTGCCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGT
ACCTGTGACTAAACAACCTACCTCCTCAGTCTGGGTGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAACA
TAGAGATCTATGTAAGTGTGATTACTATGCTCTAGAGAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCT
GTCAGGGTCAGTAAGGAAAACGGTGGCCTAGGGTACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAG
AGGCAGAGATAGAACCTGGAGCCACTTCTATCTGGGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCAACAAGCCATA
GTGGAGAGAACTGAATAAACAGGAAAATGCCAGAGCTTGTGAACCCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCC
TGGGGAAGCTGTGAAAGAACCAAAAGAGATCACAATACTCAAAAGAGAGAGAGAGAGAAAAAGAGAGATCTTGATCCAC
AGAAATACATGAAATGTCTGGTCTGTCCACCCCATCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATG
GACATAAGACAGACAGCAGTTTCCCTGGTGGTCAGGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCCT
GGAAGCAGAGCTGGGGAGGGAGAGCCATCACCTTGATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGC

TGAGAGAGGAAGAGCTGCAACGGAATTAGGAAGACCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCCTA
CGGGAACGTGGGCTGGCCCAGCATAGGGCTAGCAAATTTGAGTTGGATGATTGTTTTTGGCTCAAGGCAACCAGAGGAAAC
TTGCATACAGAGACAGATATACTGGGAGAAATGACTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAG
TCTCTGCCCCAACATAAAGAGAACTCTGGGGAGCCTGAGCCACAAAAATGTTCCCTTATTTTATGTAAACCCCTCAAGGGT
TATAGACTGCCATGCTAGACAAGCTTGTCATGTAATATCCCATGTTTTTACCCTGCCCCTGCCTTGATTAGACTCCTA
GCACCTGGCTAGTTTCTAACATGTTTTGTGCAGCACAGTTTTTAATAAATGCTTGTTACATTCA

Silencing of CD86 in dendritic cells by small interfering RNA regulates cytokine
production in T cells from patients with allergic rhinitis in vitro

Mol Med Rep 20 (4), 3893-3900 (2019)

AGTCATTGCCGAGGAAGGCTTGACAGGGTGAAAGCTTTGCTTCTCTGCTGCTGTAACAGGGACTAGCACAGACACACGG
ATGAGTGGGGTCATTTCCAGATATTAGGTCACAGCAGAAGCAGCCAAAATGGATCCCCAGTGCATATGGGACTGAGTAA
CATTCTCTTTGTGATGGCCTTCCTGCTCTCTGCTAACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAA
ATGTGTACATAAAATTTGACCTGCTCATCTATACACGGTTACCCAGAACCTAAGAAGATGAGTGTGTTTTGCTAAGAACCAAG
AATTCAACTATCGAGTATGATGGTGTTATGCAGAAATCTCAAGATAATGTCACAGAACTGTACGACGTTTCCATCAGCTT
GTCTGTTTTCATTCCTGATGTTACGAGCAATATGACCATCTTCTGTATTCTGGAACTGACAAGACGCGGCTTTTATCTT
CACCTTCTCTATAGAGCTTGAGGACCCTCAGCCTCCCCCAGACCACATTCCTTGATTACAGCTGTACTTCCAACAGTT
ATTATATGTGTGATGGTTTTCTGTCTAATTCTATGGAATGGAAGAAGAAGCGGCCTCGCAACTCTTATAAATGTGG
AACCAACACAATGGAGAGGGAAGAGAGTGAACAGACCAAGAAAAGAGAAAAATCCATATACCTGAAAGATCTGATGAAG
CCCAGCGTGTTTTTAAAAGTTTGAAGACATCTTCATGCGACAAAAGTGATACATGTTTTTAATTAAAGAGTAAAGCCCAT
ACAAGTATTCATTTTTTCTACCCTTTCCTTTGTAAGTTCCTGGGCAACCTTTTTGATTTCTTCCAGAAGGCAAAAAGACA
TTACCATGAGTAATAAGGGGGCTCCAGGACTCCCTCTAAGTGGAATAGCCTCCCTGTAACCTCCAGCTCTGCTCCGTATGC
CAAGAGGAGACTTTAATTCTCTTACTGCTTCTTTTCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCAT
GACCTGGAAATAAAATTTAGGACCAATACCTCCTCCAGATCAGATTCTTCTCTTAATTTCATAGATTGTGTTTTTTTTTT
AAATAGACCTCTCAATTTCTGGAAAACCTGCCTTTTATCTGCCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGT
ACCTGTGACTAAACAACCTACCTCCTCAGTCTGGGTGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAAACA
TAGAGATCTATGTACTGTAATAGTGTGATTACTATGCTCTAGAGAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCT
GTCAGGGTCAGTAAGGAAAACGGTGGCCTAGGGTACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAG
AGGCAGAGATAGAACCTGGAGCCACTTCTATCTGGGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCCAACAAGCCATA
GTGGAGAGAACTGAATAAACAGGAAAATGCCAGAGCTTGTAACCTGTTTCTCTGAAAGAACTGACTAGTGAGATGGCC
TGGGGAAGCTGTGAAAGAACCAAAAGAGATCACAATACTCAAAAGAGAGAGAGAGAGAGAAAAAGAGAGATCTTGATCCAC
AGAAATACATGAAATGTCTGGTCTGTCCACCCCATCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATG
GACATAAGACAGACAGCAGTTTCCCTGGTGGTACAGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCCT
GGAAGCAGAGCTGGGGAGGGAGAGCCATCACCTTGATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGC
TGAGAGAGGAAGAGCTGCAACGGAATTAGGAAGACCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCCTA
CGGGAACGTGGGCTGGCCCAGCATAGGGCTAGCAAATTTGAGTTGGATGATTGTTTTTGGCTCAAGGCAACCAGAGGAAAC
TTGCATACAGAGACAGATATACTGGGAGAAATGACTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAG
TCTCTGCCCCAACATAAAGAGAACTCTGGGGAGCCTGAGCCACAAAAATGTTCCCTTATTTTATGTAAACCCCTCAAGGGT
TATAGACTGCCATGCTAGACAAGCTTGTCATGTAATATCCCATGTTTTTACCCTGCCCCTGCCTTGATTAGACTCCTA
GCACCTGGCTAGTTTCTAACATGTTTTGTGCAGCACAGTTTTTAATAAATGCTTGTTACATTCA

Staphylococcal and Streptococcal Superantigens Trigger B7/CD28 Costimulatory
Receptor Engagement to Hyperinduce Inflammatory Cytokines

Front Immunol 10, 942 (2019)

AGTCATTGCCGAGGAAGGCTTGACAGGGTGAAAGCTTTGCTTCTCTGCTGCTGTAACAGGGACTAGCACAGACACACGG
ATGAGTGGGGTCATTTCCAGATATTAGGTCACAGCAGAAGCAGCCAAAATGGATCCCCAGTGCATATGGGACTGAGTAA
CATTCTCTTTGTGATGGCCTTCCTGCTCTCTGCTAACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAA
ATGTGTACATAAAATTTGACCTGCTCATCTATACACGGTTACCCAGAACCTAAGAAGATGAGTGTGTTTTGCTAAGAACCAAG

AATTCAACTATCGAGTATGATGGTGTATGTCAGAAATCTCAAGATAATGTCACAGAACTGTACGACGTTTCCATCAGCTT
 GTCTGTTTCATTCCCTGATGTTACGAGCAATATGACCATCTTCTGTATTCTGGAACTGACAAGACGCGGCTTTTATCTT
 CACCTTTCTCTATAGAGCTTGAGGACCCTCAGCCTCCCCAGACCACATTCCTTGGATTACAGCTGTACTTCCAACAGTT
 ATTATATGTGTGATGGTTTTCTGTCTAATTCTATGGAAATGGAAGAAGAAGCGGCCTCGCAACTCTTATAAATGTGG
 AACCAACACAATGGAGAGGGAAGAGAGTGAACAGACCAAGAAAAGAGAAAAATCCATATACCTGAAAGATCTGATGAAG
 CCCAGCGTGTTTTTAAAAGTTCTGAAGACATCTTCATGCGACAAAAGTGATACATGTTTTTAATTAAGAGTAAAGCCCAT
 ACAAGTATTCAATTTTTCTACCTTTTCCTTTGTAAGTTCCTGGGCAACCTTTTTGATTTCTTCCAGAAGGCAAAAAGACA
 TTACCATGAGTAATAAGGGGGCTCCAGGACTCCCTCTAAGTGGAATAGCCTCCCTGTAAGTCCAGCTCTGCTCCGTATGC
 CAAGAGGAGACTTTAATTCTCTTACTGCTTCTTTTCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCAT
 GACCTGGAAATAAAATTTAGGACCAATACCTCCTCCAGATCAGATTCTTCTCTTAATTTTCATAGATTGTGTTTTTTTTTT
 AAATAGACCTCTCAATTTCTGGAAAAGTGCCTTTTATCTGCCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGT
 ACCTGTGACTAAACAACCTACCTCCTCAGTCTGGGTGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAACA
 TAGAGATCTATGTACTGTAATAGTGTGATTACTATGCTCTAGAGAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCT
 GTCAGGGTCAGTAAGGAAAACGGTGGCCTAGGGTACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAG
 AGGCAGAGATAGAACCTGGAGCCACTTCTATCTGGGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCAACAAGCCATA
 GTGGAGAGAACTGAATAAACAGGAAAATGCCAGAGCTTGTGAACCCTGTTTCTCTGAAGAACTGACTAGTGAGATGGCC
 TGGGGAAGCTGTGAAAGAACCAAAAGAGATCACAATACTCAAAAGAGAGAGAGAGAGAGAAAAAGAGAGATCTTGATCCAC
 AGAAATACATGAAATGTCTGGTCTGTCCACCCCATCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATG
 GACATAAGACAGACAGCAGTTTTCCCTGGTGGTCAGGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCCT
 GGAAGCAGAGCTGGGGAGGGAGAGCCATCACCTTGATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGC
 TGAGAGAGGAAGAGCTGCAACGGAATTAGGAAGACCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCTTA
 CGGGAACGTGGGCTGGCCCAGCATAGGGCTAGCAAATTTGAGTTGGATGATTGTTTTTGCTCAAGGCAACCAGAGGAAAC
 TTGCATACAGAGACAGATATACTGGGAGAAATGACTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAG
 TCTCTGCCCCAACATAAAGAGAACTCTGGGGAGCCTGAGCCACAAAAATGTTCCCTTATTTTATGTAAACCCTCAAGGT
 TATAGACTGCCATGCTAGACAAGCTTGTCCATGTAATATCCCATGTTTTTACCCTGCCCCCTGCCTTGATTAGACTCCTA
 GCACCTGGCTAGTTTCTAACATGTTTTGTGCAGCACAGTTTTTAATAAATGCTTGTTACATTCA

Localization in situ of the co-stimulatory molecules B7.1, B7.2, CD40 and their
 ligands in normal human lymphoid tissue

Eur J Immunol 25 (11), 3023-3029 (1995)

AGTCATTGCCGAGGAAGGCTTGACAGGGTGAAGCTTTGCTTCTCTGCTGCTGTAACAGGGACTAGCACAGACACACGG
 ATGAGTGGGGTCATTTCCAGATATTAGGTCACAGCAGAAGCAGCCAAAATGGATCCCCAGTGCATATGGGACTGAGTAA
 CATTCTCTTTGTGATGGCCTTCCTGCTCTCTGCTAACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAA
 ATGTGTACATAAATTTGACCTGCTCATCTATACAGGTTACCCAGAACCTAAGAAGATGAGTGTTTTGCTAAGAACCAAG
 AATTCAACTATCGAGTATGATGGTGTATGTCAGAAATCTCAAGATAATGTCACAGAACTGTACGACGTTTCCATCAGCTT
 GTCTGTTTCATTCCCTGATGTTACGAGCAATATGACCATCTTCTGTATTCTGGAACTGACAAGACGCGGCTTTTATCTT
 CACCTTTCTCTATAGAGCTTGAGGACCCTCAGCCTCCCCAGACCACATTCCTTGGATTACAGCTGTACTTCCAACAGTT
 ATTATATGTGTGATGGTTTTCTGTCTAATTCTATGGAAATGGAAGAAGAAGCGGCCTCGCAACTCTTATAAATGTGG
 AACCAACACAATGGAGAGGGAAGAGAGTGAACAGACCAAGAAAAGAGAAAAATCCATATACCTGAAAGATCTGATGAAG
 CCCAGCGTGTTTTTAAAAGTTCTGAAGACATCTTCATGCGACAAAAGTGATACATGTTTTTAATTAAGAGTAAAGCCCAT
 ACAAGTATTCAATTTTTCTACCTTTTCCTTTGTAAGTTCCTGGGCAACCTTTTTGATTTCTTCCAGAAGGCAAAAAGACA
 TTACCATGAGTAATAAGGGGGCTCCAGGACTCCCTCTAAGTGGAATAGCCTCCCTGTAAGTCCAGCTCTGCTCCGTATGC
 CAAGAGGAGACTTTAATTCTCTTACTGCTTCTTTTCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCAT
 GACCTGGAAATAAAATTTAGGACCAATACCTCCTCCAGATCAGATTCTTCTCTTAATTTTCATAGATTGTGTTTTTTTTTT
 AAATAGACCTCTCAATTTCTGGAAAAGTGCCTTTTATCTGCCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGT
 ACCTGTGACTAAACAACCTACCTCCTCAGTCTGGGTGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAACA
 TAGAGATCTATGTACTGTAATAGTGTGATTACTATGCTCTAGAGAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCT
 GTCAGGGTCAGTAAGGAAAACGGTGGCCTAGGGTACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAG

AGGCAGAGATAGAACCTGGAGCCACTTCTATCTGGGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCCAACAAGCCATA
 GTGGAGAGAACTGAATAAACAGGAAAATGCCAGAGCTTGTGAACCCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCC
 TGGGGAAGCTGTGAAAGAACCAAAAGAGATCACAATACTCAAAAGAGAGAGAGAGAGAGAGAGAGAGAGAGATCTTGATCCAC
 AGAAATACATGAAATGTCTGGTCTGTCCACCCCATCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATG
 GACATAAGACAGACAGCAGTTTCCCTGGTGGTCAGGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCCT
 GGAAGCAGAGCTGGGGAGGGAGAGCCATCACCTTGATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGC
 TGAGAGAGGAAGAGCTGCAACGGAATTAGGAAGACCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCCTA
 CGGGAACGTGGGCTGGCCCAGCATAGGGCTAGCAAATTTGAGTTGGATGATTGTTTTTGTCTCAAGGCAACCAGAGGAAAC
 TTGCATACAGAGACAGATATACTGGGAGAAATGACTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAG
 TCTCTGCCCCAACATAAAGAGAACTCTGGGGAGCCTGAGCCACAAAAATGTTCCCTTATTTTATGTAAACCCTCAAGGGT
 TATAGACTGCCATGCTAGACAAGCTTGTCCATGTAATATTCCTATGTTTTTACCCTGCCCCTGCCTTGATTAGACTCCTA
 GCACCTGGCTAGTTTCTAACATGTTTTGTGCAGCACAGTTTTTAATAAATGCTTGTTACATTCA

CD86 (B70/B7-2) on endothelial cells co-stimulates allogeneic CD4+ T cells
 Int Immunol 7 (8), 1331-1337 (1995)

AGTCATTGCCGAGGAAGGCTTGACAGGGTGAAGCTTTGCTTCTCTGCTGCTGTAACAGGGACTAGCACAGACACACGG
 ATGAGTGGGGTCATTTCCAGATATTAGGTCACAGCAGAAGCAGCCAAAATGGATCCCCAGTGCATATGGGACTGAGTAA
 CATTCTCTTTGTGATGGCCTTCCTGCTCTCTGCTAACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAA
 ATGTGTACATAAAATTTGACCTGCTCATCTATACCGTTACCCAGAACCTAAGAAGATGAGTGTGTTTGTCTAAGAACCAAG
 AATCAACTATCGAGTATGATGGTGTATGCAGAAATCTCAAGATAATGTCACAGAACTGTACGACGTTTCCATCAGCTT
 GTCTGTTTCATTCCCTGATGTTACGAGCAATATGACCATCTTCTGTATTCTGGAACTGACAAGACGCGGCTTTTATCTT
 CACCTTTCTCTATAGAGCTTGAGGACCCTCAGCTCCCCCAGACCACATTCCTTGATTACAGCTGTACTTCCAACAGTT
 ATTATATGTGTGATGGTTTTCTGTCTAATTCTATGGAATGGAAGAAGAAGCGGCCTCGCAACTCTTATAAATGTGG
 AACCAACACAAATGGAGAGGGAAGAGAGTGAACAGACCAAGAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAG
 CCCAGCGTGTTTTTTAAAGTTCTGAAGACATCTTCATGCGACAAAAGTGATACATGTTTTTAATTAAGAGTAAAGCCCAT
 ACAAGTATTCATTTTTTCTACCCTTTCCTTTGTAAGTTCCTGGGCAACCTTTTTGATTTCTTCCAGAAGGCAAAAAGACA
 TTACCATGAGTAATAAGGGGGCTCCAGGACTCCCTCTAAGTGGAATAGCCTCCCTGTAACCTCCAGCTCTGCTCCGTATGC
 CAAGAGGAGACTTTAATTCTCTTACTGCTTCTTTCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCAT
 GACCTGGAAATAAAATTTAGGACCAATACCTCCTCCAGATCAGATTCTTCTCTTAATTTCATAGATTGTGTTTTTTTTTT
 AAATAGACCTCTCAATTTCTGGAAAACCTGCTTTTATCTGCCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGT
 ACCTGTGACTAAACAACCTACCTCCTCAGTCTGGGTGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAAACA
 TAGAGATCTATGTACTGTAATAGTGTGATTACTATGCTCTAGAGAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCT
 GTCAGGGTCAGTAAGGAAAACGGTGGCCTAGGGTACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAG
 AGGCAGAGATAGAACCTGGAGCCACTTCTATCTGGGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCCAACAAGCCATA
 GTGGAGAGAACTGAATAAACAGGAAAATGCCAGAGCTTGTGAACCCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCC
 TGGGGAAGCTGTGAAAGAACCAAAAGAGATCACAATACTCAAAAGAGAGAGAGAGAGAGAGAGAGAGAGATCTTGATCCAC
 AGAAATACATGAAATGTCTGGTCTGTCCACCCCATCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATG
 GACATAAGACAGACAGCAGTTTCCCTGGTGGTCAGGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCCT
 GGAAGCAGAGCTGGGGAGGGAGAGCCATCACCTTGATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGC
 TGAGAGAGGAAGAGCTGCAACGGAATTAGGAAGACCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCCTA
 CGGGAACGTGGGCTGGCCCAGCATAGGGCTAGCAAATTTGAGTTGGATGATTGTTTTTGTCTCAAGGCAACCAGAGGAAAC
 TTGCATACAGAGACAGATATACTGGGAGAAATGACTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAG
 TCTCTGCCCCAACATAAAGAGAACTCTGGGGAGCCTGAGCCACAAAAATGTTCCCTTATTTTATGTAAACCCTCAAGGGT
 TATAGACTGCCATGCTAGACAAGCTTGTCCATGTAATATTCCTATGTTTTTACCCTGCCCCTGCCTTGATTAGACTCCTA
 GCACCTGGCTAGTTTCTAACATGTTTTGTGCAGCACAGTTTTTAATAAATGCTTGTTACATTCA

CD80 (B7) and CD86 (B70) provide similar costimulatory signals for T cell
 proliferation, cytokine production, and generation of CTL

J Immunol 154 (1), 97-105 (1995)

AGTCATTGCCGAGGAAGGCTTGACAGGGTGAAGCTTTGCTTCTCTGCTGCTGTAACAGGGACTAGCACAGACACACGG
ATGAGTGGGGTCATTTCCAGATATTAGGTCACAGCAGAAGCAGCCAAAATGGATCCCCAGTGCACTATGGGACTGAGTAA
CATTCTCTTTGTGATGGCCTTCCTGCTCTCTGCTAACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAA
ATGTGTACATAAAATTTGACCTGCTCATCTATACACGGTTACCCAGAACCTAAGAAGATGAGTGTTTTGCTAAGAACCAAG
AATTCAACTATCGAGTATGATGGTGTTATGCAGAAATCTCAAGATAATGTCACAGAACTGTACGACGTTTCCATCAGCTT
GTCTGTTTTCATTCCTGATGTTACGAGCAATATGACCATCTTCTGTATTCTGGAACTGACAAGACGCGGCTTTTATCTT
CACCTTTCTCTATAGAGCTTGAGGACCCTCAGCCTCCCCAGACCACATTCTTGGATTACAGCTGTACTTCCAACAGTT
ATTATATGTGTGATGGTTTTCTGTCTAATTCTATGGAATGGAAGAAGAAGAAGCGGCCTCGCAACTCTTATAAATGTGG
AACCAACACAATGGAGAGGGAAGAGAGTGAACAGACCAAGAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAG
CCCAGCGTGTTTTTAAAAGTTTGAAGACATCTTCATGCGACAAAAGTGATACATGTTTTTAATTAAGAGTAAAGCCCAT
ACAAGTATTCATTTTTTCTACCCTTTCTTTGTAAGTTCTGCGGCAACCTTTTTGATTTCTTCCAGAAGGCAAAAAGACA
TTACCATGAGTAATAAGGGGGCTCCAGGACTCCCTCTAAGTGGAATAGCCTCCCTGTAACCTCCAGCTCTGCTCCGTATGC
CAAGAGGAGACTTTAATTCTCTTACTGCTTCTTTTCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCAT
GACCTGGAAATAAAATTTAGGACCAATACCTCCTCCAGATCAGATTCTTCTCTTAATTTCATAGATTGTGTTTTTTTTTT
AAATAGACCTCTCAATTTCTGGAAGTGCCTTTTATCTGCCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGT
ACCTGTGACTAAACAACCTCCTCAGTCTGGGTGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAACA
TAGAGATCTATGTACTGTAATAGTGTGATTACTATGCTCTAGAGAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCT
GTCAGGGTCAGTAAGGAAAACGGTGGCCTAGGGTACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAG
AGGCAGAGATAGAACCTGGAGCCACTTCTATCTGGGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCAACAAGCCATA
GTGGAGAGAACTGAATAAACAGGAAAATGCCAGAGCTTGTGAACCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCC
TGGGGAAGCTGTGAAAGAACCAAAAGAGATCACAATACTCAAAAGAGAGAGAGAGAGAAAAAAGAGAGATCTTGATCCAC
AGAAATACATGAAATGTCTGGTCTGTCCACCCCATCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATG
GACATAAGACAGACAGCAGTTTCCCTGGTGGTCAGGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCT
GGAAGCAGAGCTGGGGAGGGAGAGCCATCACCTTGATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGC
TGAGAGAGGAAGAGCTGCAACGGAATTAGGAAGACCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCCTA
CGGGAACGTGGGCTGGCCCAGCATAGGGCTAGCAAAATTTGAGTTGGATGATTGTTTTTGCTCAAGGCAACCAGAGGAAAC
TTGCATACAGAGACAGATATACTGGGAGAAATGACTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGCGAG
TCTCTGCCCAAACATAAAGAGAACTCTGGGGAGCCTGAGCCACAAAATGTTCCCTTATTTTATGTAAACCCTCAAGGGT
TATAGACTGCCATGCTAGACAAGCTTGTCCATGTAATATTTCCCATGTTTTTACCCTGCCCCTGCCTTGATTAGACTCCTA
GCACCTGGCTAGTTTCTAACATGTTTTGTGCAGCACAGTTTTTAATAAATGCTTGTTACATTCA

The B7-2 (B70) costimulatory molecule expressed by monocytes and activated B lymphocytes is the CD86 differentiation antigen

Blood 84 (5), 1402-1407 (1994)

AGTCATTGCCGAGGAAGGCTTGACAGGGTGAAGCTTTGCTTCTCTGCTGCTGTAACAGGGACTAGCACAGACACACGG
ATGAGTGGGGTCATTTCCAGATATTAGGTCACAGCAGAAGCAGCCAAAATGGATCCCCAGTGCACTATGGGACTGAGTAA
CATTCTCTTTGTGATGGCCTTCCTGCTCTCTGCTAACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAA
ATGTGTACATAAAATTTGACCTGCTCATCTATACACGGTTACCCAGAACCTAAGAAGATGAGTGTTTTGCTAAGAACCAAG
AATTCAACTATCGAGTATGATGGTGTTATGCAGAAATCTCAAGATAATGTCACAGAACTGTACGACGTTTCCATCAGCTT
GTCTGTTTTCATTCCTGATGTTACGAGCAATATGACCATCTTCTGTATTCTGGAACTGACAAGACGCGGCTTTTATCTT
CACCTTTCTCTATAGAGCTTGAGGACCCTCAGCCTCCCCAGACCACATTCTTGGATTACAGCTGTACTTCCAACAGTT
ATTATATGTGTGATGGTTTTCTGTCTAATTCTATGGAATGGAAGAAGAAGAAGCGGCCTCGCAACTCTTATAAATGTGG
AACCAACACAATGGAGAGGGAAGAGAGTGAACAGACCAAGAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAG
CCCAGCGTGTTTTTAAAAGTTTGAAGACATCTTCATGCGACAAAAGTGATACATGTTTTTAATTAAGAGTAAAGCCCAT
ACAAGTATTCATTTTTTCTACCCTTTCTTTGTAAGTTCTGCGGCAACCTTTTTGATTTCTTCCAGAAGGCAAAAAGACA
TTACCATGAGTAATAAGGGGGCTCCAGGACTCCCTCTAAGTGGAATAGCCTCCCTGTAACCTCCAGCTCTGCTCCGTATGC
CAAGAGGAGACTTTAATTCTCTTACTGCTTCTTTTCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCAT

GACCTGGAAATAAAATTTAGGACCAATACCTCCTCCAGATCAGATTCTTCTCTTAATTTTCATAGATTGTGTTTTTTTTTTT
AAATAGACCTCTCAATTTCTGGAAAACCTGCCTTTTATCTGCCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGT
ACCTGTGACTAAACAACCTACCTCCTCAGTCTGGGTGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAAACA
TAGAGATCTATGTACTGTAATAGTGTGATTACTATGCTCTAGAGAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCT
GTCAGGGTCAGTAAGGAAAACGGTGGCCTAGGGTACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAG
AGGCAGAGATAGAACCTGGAGCCACTTCTATCTGGGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCCAACAAGCCATA
GTGGAGAGAACTGAATAAACAGGAAAATGCCAGAGCTTGTGAACCCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCC
TGGGGAAGCTGTGAAAGAACCAAAAGAGATCACAATACTCAAAAGAGAGAGAGAGAGAGAAAAAGAGAGATCTTGATCCAC
AGAAATACATGAAATGTCTGGTCTGTCCACCCCATCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATG
GACATAAGACAGACAGCAGTTTCCCTGGTGGTTCAGGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCCT
GGAAGCAGAGCTGGGGAGGGAGAGCCATCACCTTGATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGC
TGAGAGAGGAAGAGCTGCAACGGAATTAGGAAGACCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCCTA
CGGGAACGTGGGCTGGCCCAGCATAGGGCTAGCAAATTTGAGTTGGATGATTGTTTTTGCTCAAGGCAACCAGAGGAAAC
TTGCATACAGAGACAGATATACTGGGAGAAATGACTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAG
TCTCTGCCCCAACATAAAGAGAACTCTGGGGAGCCTGAGCCACAAAAATGTTCTTTATTTTATGTAAACCCTCAAGGGT
TATAGACTGCCATGCTAGACAAGCTTGTCATGTAATATCCCATGTTTTTACCCTGCCCCTGCCTTGATTAGACTCCTA
GCACCTGGCTAGTTTCTAACATGTTTTGTGCAGCACAGTTTTTAATAAATGCTTGTTACATTCA

Molecular cloning and expression of early T cell costimulatory molecule-1 and
its characterization as B7-2 molecule

J Immunol 152 (10), 4929-4936 (1994)

AGTCATTGCCGAGGAAGGCTTGACAGGGTAAAAGCTTTGCTTCTCTGCTGCTGTAAACAGGGACTAGCACAGACACACGG
ATGAGTGGGGTCATTTCCAGATATTAGGTCACAGCAGAAGCAGCCAAAATGGATCCCCAGTGCATATGGGACTGAGTAA
CATTCTCTTTGTGATGGCCTTCTGCTCTCTGCTAACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAA
ATGTGTACATAAATTTGACCTGCTCATCTATACACGGTTACCCAGAACCTAAGAAGATGAGTGTTTTGCTAAGAACCAAG
AATTCAACTATCGAGTATGATGGTGTATGCAGAAATCTCAAGATAATGTCACAGAACTGTACGACGTTTCCATCAGCTT
GTCTGTTTCATTCCCTGATGTTACGAGCAATATGACCATCTTCTGTATTCTGGAACTGACAAGACGCGGCTTTTATCTT
CACCTTTCTCTATAGAGCTTGAGGACCCTCAGCCTCCCCCAGACCACATTCCTTGGAATTACAGCTGTACTTCCAACAGTT
ATTATATGTGTGATGGTTTTCTGTCTAATTCTATGGAATGGAAGAAGAAGCGGCTCGCAACTCTTATAAATGTGG
AACCAACACAATGGAGAGGGAAGAGAGTGAACAGACCAAGAAAAGAGAAAAATCCATATACCTGAAAGATCTGATGAAG
CCCAGCGTGTTTTTAAAGTTTGAAGACATCTTCATGCGACAAAAGTGATACATGTTTTTAATTAAGAGTAAAGCCCAT
ACAAGTATTCATTTTTTCTACCCTTTCTTTGTAAGTTCCTGGGCAACCTTTTTGATTTCTTCCAGAAGGCAAAAAGACA
TTACCATGAGTAATAAGGGGGCTCCAGGACTCCCTCTAAGTGGAATAGCCTCCCTGTAACCTCCAGCTCTGCTCCGTATGC
CAAGAGGAGACTTTAATTCTTTACTGCTTCTTTCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCAT
GACCTGGAAATAAAATTTAGGACCAATACCTCCTCCAGATCAGATTCTTCTCTTAATTTTCATAGATTGTGTTTTTTTTTT
AAATAGACCTCTCAATTTCTGGAAAACCTGCCTTTTATCTGCCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGT
ACCTGTGACTAAACAACCTACCTCCTCAGTCTGGGTGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAAACA
TAGAGATCTATGTACTGTAATAGTGTGATTACTATGCTCTAGAGAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCT
GTCAGGGTCAGTAAGGAAAACGGTGGCCTAGGGTACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAG
AGGCAGAGATAGAACCTGGAGCCACTTCTATCTGGGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCCAACAAGCCATA
GTGGAGAGAACTGAATAAACAGGAAAATGCCAGAGCTTGTGAACCCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCC
TGGGGAAGCTGTGAAAGAACCAAAAGAGATCACAATACTCAAAAGAGAGAGAGAGAGAAAAAGAGAGATCTTGATCCAC
AGAAATACATGAAATGTCTGGTCTGTCCACCCCATCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATG
GACATAAGACAGACAGCAGTTTCCCTGGTGGTTCAGGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCCT
GGAAGCAGAGCTGGGGAGGGAGAGCCATCACCTTGATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGC
TGAGAGAGGAAGAGCTGCAACGGAATTAGGAAGACCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCCTA
CGGGAACGTGGGCTGGCCCAGCATAGGGCTAGCAAATTTGAGTTGGATGATTGTTTTTGCTCAAGGCAACCAGAGGAAAC
TTGCATACAGAGACAGATATACTGGGAGAAATGACTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAG

TCTCTGCCCCAAACATAAAGAGAACTCTGGGGAGCCTGAGCCACAAAAATGTTCCCTTTATTTTATGTAAACCCTCAAGGGT
TATAGACTGCCATGCTAGACAAGCTTGTCCATGTAATATTCCCATGTTTTTACCCTGCCCCCTGCCTTGATTAGACTCCTA
GCACCTGGCTAGTTTCTAACATGTTTTGTGCAGCACAGTTTTTAATAAATGCTTGTTACATTCA

Increases of CD80 and CD86 Expression on Peripheral Blood Cells and their Gene Polymorphisms in Autoimmune Thyroid Disease

Immunol Invest 49 (1-2), 191-203 (2020)

AGAAGTTATTTGGAACCAAGCAAGAGCACTGTCCCTGGCTGTGGTGTGTTTCTCTAGTCAGTTCCCCTTTCTGTATTG
AGTTCTACCGTCAGTCTGGCATTATTTCTCTCTCTACAAGGAGCCTTAGGAGGTACGGGGAGCTCGCAAATACTCCTTT
TGTTTTATTCTTACCACCTTGCTTCTGTGTTCCCTTGGAATGCTGCTGTGCTTATGCATCTGGTCTCTTTTTGGAGCTAC
AGTGGACAGGCATTTGTGACAGCACTATGGGACTGAGTAACATTCTCTTTGTGATGGCCTTCTGCTCTCTGGTGCTGCT
CCTCTGAAGATTCAAGCTTATTTCAATGAGACTGCAGACCTGCCATGCCAATTTGCAAACCTCTCAAACCAAAGCCTGAG
TGAGCTAGTAGTATTTTGGCAGGACCAGGAAAACTTGGTTCTGAATGAGGTATACTTAGGCAAAGAGAAATTTGACAGTG
TTCATTCCAAGTATATGGGGCCGCACAAGTTTTGATTTCGGACAGTTGGACCCTGAGACTTCACAATCTTCAGATCAAGGAC
AAGGGCTTGTATCAATGTATCATCCATCACAAAAAGCCACAGGAATGATTTCGCATCCACCAGATGAATTCTGAACTGTC
AGTGCTTGCTAACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAAAATGTGTACATAAATTTGACCTGCT
CATCTATACACGGTTACCCAGAACCTAAGAAGATGAGTGTTTTGCTAAGAACCAAGAATTCAACTATCGAGTATGATGGT
GTTATGCAGAAATCTCAAGATAATGTACAGAACTGTACGACGTTTCCATCAGCTTGTCTGTTTCATTCCCTGATGTTAC
GAGCAATATGACCATCTTCTGTATTCTGGAACCTGACAAGACGCGGCTTTTATCTTCACCTTTCTCTATAGGAACCAACA
CAATGGAGAGGGAAGAGAGTGAACAGACCAAGAAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAGCCCAGCGT
GTTTTTAAAGTTCTGAAGACATCTTCATGCGACAAAAGTGATACATGTTTTTAATTAAAGAGTAAAGCCCATACAAGTAT
TCATTTTTTCTACCTTTTCTTTGTAAGTTCCTGGGCAACCTTTTTGATTTCTTCCAGAAGGCAAAAAGACATTACCATG
AGTAATAAGGGGGCTCCAGGACTCCCTCTAAGTGGAATAGCCTCCCTGTAAGTCCAGCTCTGCTCCGTATGCCAAGAGGA
GACTTTAATTCTCTTACTGCTTCTTTTCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCATGACCTGGA
AATAAAATTTAGGACCAATACCTCCTCCAGATCAGATTCTTCTTAAATTTTATAGATTGTGTTTTTTTTTAAATAGAC
CTCTCAATTTCTGGAACCTGCCTTTTATCTGCCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGTACCTGTGA
CTAAACAACTACCTCCTCAGTCTGGGTGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAACATAGAGATC
TATGTACTGTAATAGTGTGATTACTATGCTCTAGAGAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCTGTGAGGGT
CAGTAAGGAAAACGGTGGCCTAGGGTACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAGAGGCAGAG
ATAGAACCTGGAGCCACTTCTATCTGGGCTGTGCTAATATTGAGGAGGCTTGCCCCACCAACAAGCCATAGTGGAGAG
AACTGAATAAACAGGAAAATGCCAGAGCTTGTGAACCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCCTGGGGAAG
CTGTGAAAGAACCAAAAAGAGATCACAATACTCAAAAAGAGAGAGAGAGAGAAAAAAGAGAGATCTTGATCCACAGAAATAC
ATGAAATGTCTGGTCTGTGCCACCCCATCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATGGACATAAG
ACAGACAGCAGTTTCCCTGGTGGTCAGGGAGGGGTTTTGGTGATACCAAGTTATTGGGATGTCATCTTCTGGAAGCAG
AGCTGGGGAGGGAGAGCCATCACCTTGATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGCTGAGAGAG
GAAGAGCTGCAACGGAATTAGGAAGACCAAGACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCCTACGGGAACG
TGGGCTGGCCCAGCATAGGGCTAGCAAATTTGAGTTGGATGATTGTTTTTGCTCAAGGCAACCAGAGGAAACTTGCATAC
AGAGACAGATATACTGGGAGAAATGACTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAGTCTCTGCC
CAAACATAAAGAGAACTCTGGGGAGCCTGAGCCACAAAAATGTTCCCTTTATTTTATGTAAACCCTCAAGGGTTATAGACT
GCCATGCTAGACAAGCTTGTCCATGTAATATTCCCATGTTTTTACCCTGCCCCCTGCCTTGATTAGACTCCTAGCACCTGG
CTAGTTTCTAACATGTTTTGTGCAGCACAGTTTTTAATAAATGCTTGTTACATTCA

Cowpox virus encodes a protein that binds B7.1 and B7.2 and subverts T cell
costimulation

Proc Natl Acad Sci U S A 116 (42), 21113-21119 (2019)

AGAAGTTATTTGGAACCAAGCAAGAGCACTGTCCCTGGCTGTGGTGTGTTTCTCTAGTCAGTTCCCCTTTCTGTATTG
AGTTCTACCGTCAGTCTGGCATTATTTCTCTCTCTACAAGGAGCCTTAGGAGGTACGGGGAGCTCGCAAATACTCCTTT
TGTTTTATTCTTACCACCTTGCTTCTGTGTTCCCTTGGAATGCTGCTGTGCTTATGCATCTGGTCTCTTTTTGGAGCTAC

AGTGGACAGGCATTTGTGACAGCACTATGGGACTGAGTAACATTCTCTTTGTGATGGCCTTCCTGCTCTCTGGTGCTGCT
 CCTCTGAAGATTCAAGCTTATTTCAATGAGACTGCAGACCTGCCATGCCAATTTGCAAACCTCTCAAAACCAAAGCCTGAG
 TGAGCTAGTAGTATTTTGGCAGGACCAGGAAAACTTGGTTCTGAATGAGGTATACTTAGGCAAAGAGAAATTTGACAGTG
 TTCATTCCAAGTATATGGGCCGCACAAGTTTTGATTTCGGACAGTTGGACCCTGAGACTTCACAATCTTCAGATCAAGGAC
 AAGGGCTTGTATCAATGTATCATCCATCACAAAAAGCCACAGGAATGATTTCGCATCCACCAGATGAATTCTGAACTGTC
 AGTGCTTGCTAACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAAAATGTGTACATAAAATTTGACCTGCT
 CATCTATACACGGTTACCCAGAACCTAAGAAGATGAGTGTTTTGCTAAGAACCAAGAATTCAACTATCGAGTATGATGGT
 GTTATGCAGAAATCTCAAGATAATGTCACAGAACTGTACGACGTTTCCATCAGCTTGTCTGTTTCATTCCCTGATGTTAC
 GAGCAATATGACCATCTTCTGTATTCTGGAACCTGACAAGACGCGGCTTTTATCTTCACCTTTCTCTATAGGAACCAACA
 CAATGGAGAGGGAAGAGAGTGAACAGACCAAGAAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAGCCCAGCGT
 GTTTTTAAAGTTCGAAGACATCTTCATGCGACAAAAGTGATACATGTTTTTAATTAAAGAGTAAAGCCCATACAAGTAT
 TCATTTTTTCTACCCTTTCTTTGTAAGTTCCTGGGCAACCTTTTTGATTTCTTCCAGAAGGCAAAAAGACATTACCATG
 AGTAATAAGGGGGCTCCAGGACTCCCTCTAAGTGAATAGCCTCCCTGTAACCTCCAGCTCTGCTCCGTATGCCAAGAGGA
 GACTTTAATTCTCTTACTGCTTCTTTTCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCATGACCTGGA
 AATAAAATTTAGGACCAATACCTCCTCCAGATCAGATTCTTCTCTTAATTTTCATAGATTGTGTTTTTTTTTAAATAGAC
 CTCTCAATTTCTGAAAACTGCCTTTTATCTGCCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGTACCTGTGA
 CTAACAACCTACCTCCTCAGTCTGGGTGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAAACATAGAGATC
 TATGTACTGTAATAGTGTGATTACTATGCTCTAGAGAAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCTGTCAGGGT
 CAGTAAGGAAAACGGTGGCCTAGGGTACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAGAGGCAGAG
 ATAGAACCTGGAGCCACTTCTATCTGGGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCCAACAAGCCATAGTGGAGAG
 AACTGAATAAACAGGAAAAATGCCAGAGCTTGTGAACCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCCTGGGGAAG
 CTGTGAAAGAACCAAAAAGAGATCACAACTCAAAAAGAGAGAGAGAGAGAAAAAAGAGAGATCTTGATCCACAGAAATAC
 ATGAAATGTCTGGTCTGTCCACCCCATCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATGGACATAAG
 ACAGACAGCAGTTTCCCTGGTGGTCAGGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCTGGAAGCAG
 AGCTGGGGAGGGAGAGCCATCACCTTGATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGCTGAGAGAG
 GAAGAGCTGCAACGGAATTAGGAAGACCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCCTACGGGAACG
 TGGGCTGGCCCAGCATAGGGCTAGCAAATTTGAGTTGGATGATTGTTTTTGCTCAAGGCAACCAGAGGAACTTGCATAC
 AGAGACAGATATACTGGGAGAAATGACTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAGTCTCTGCC
 CAAACATAAAGAGAACTCTGGGGAGCCTGAGCCACAAAAATGTTCTTTATTTTATGTAAACCCTCAAGGGTTATAGACT
 GCCATGCTAGACAAGCTTGTCCATGTAATATTCCTATGTTTTTACCCTGCCCTGCCTTGATTAGACTCCTAGCACCTGG
 CTAGTTTCTAACATGTTTTGTGCAGCACAGTTTTTAATAAATGCTTGTTACATTCA

Genetic association between cluster of differentiation 86 variations and sepsis
 risk: A case-control study

Medicine (Baltimore) 98 (43), e17482 (2019)

AGAAGTTATTTGGAACCAAGCAAGAGCACTGTCCCTGGCTGTGGTGTGTTTCTCTAGTCAGTTCCCCTTTCTGTATTTG
 AGTTCTACCGTCAGTCTCGGCATTATTTCTCTCTCTACAAGGAGCCTTAGGAGGTACGGGGAGCTCGAAATACTCCTTT
 TGGTTTTATTCTTACCACCTTGCTTCTGTGTTCCCTGGGAATGCTGCTGTGCTTATGCATCTGGTCTCTTTTTGGAGCTAC
 AGTGGACAGGCATTTGTGACAGCACTATGGGACTGAGTAACATTCTCTTTGTGATGGCCTTCCTGCTCTCTGGTGCTGCT
 CCTCTGAAGATTCAAGCTTATTTCAATGAGACTGCAGACCTGCCATGCCAATTTGCAAACCTCTCAAAACCAAAGCCTGAG
 TGAGCTAGTAGTATTTTGGCAGGACCAGGAAAACTTGGTTCTGAATGAGGTATACTTAGGCAAAGAGAAATTTGACAGTG
 TTCATTCCAAGTATATGGGCCGCACAAGTTTTGATTTCGGACAGTTGGACCCTGAGACTTCACAATCTTCAGATCAAGGAC
 AAGGGCTTGTATCAATGTATCATCCATCACAAAAAGCCACAGGAATGATTTCGCATCCACCAGATGAATTCTGAACTGTC
 AGTGCTTGCTAACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAAAATGTGTACATAAAATTTGACCTGCT
 CATCTATACACGGTTACCCAGAACCTAAGAAGATGAGTGTTTTGCTAAGAACCAAGAATTCAACTATCGAGTATGATGGT
 GTTATGCAGAAATCTCAAGATAATGTCACAGAACTGTACGACGTTTCCATCAGCTTGTCTGTTTCATTCCCTGATGTTAC
 GAGCAATATGACCATCTTCTGTATTCTGGAACCTGACAAGACGCGGCTTTTATCTTCACCTTTCTCTATAGGAACCAACA
 CAATGGAGAGGGAAGAGAGTGAACAGACCAAGAAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAGCCCAGCGT

GTTTTTAAAGTTCTGAAGACATCTTCATGCGACAAAAGTGATACATGTTTTTAATTAAAGAGTAAAGCCCATACAAGTAT
 TCATTTTTCTACCCCTTTCCTTTGTAAGTTCCTGGGCAACCTTTTTGATTTCTTCCAGAAGGCAAAAAGACATTACCATG
 AGTAATAAGGGGGCTCCAGGACTCCCTCTAAGTGGAATAGCCTCCCTGTAAGTCCAGCTCTGCTCCGTATGCCAAGAGGA
 GACTTTAATTCTCTTACTGCTTCTTTTCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCATGACCTGGA
 AATAAAATTTAGGACCAATACCTCCTCCAGATCAGATTCTTCTCTTAATTTTCATAGATTGTGTTTTTTTTTAAATAGAC
 CTCTCAATTTCTGAAAACTGCCTTTTATCTGCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGTACCTGTGA
 CTAAACAACACTACCTCCTCAGTCTGGGTGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAAACATAGAGATC
 TATGTACTGTAATAGTGTGATTACTATGCTCTAGAGAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCTGTCAGGGT
 CAGTAAGGAAAAACGGTGGCCTAGGGTACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAGAGGCAGAG
 ATAGAACCTGGAGCCACTTCTATCTGGGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCCAACAAGCCATAGTGAGAG
 AACTGAATAAACAGGAAAATGCCAGAGCTTGTGAACCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCCTGGGGAAG
 CTGTGAAAGAACCAAAAGAGATCACAATACTCAAAAAGAGAGAGAGAGAGAAAAAGAGAGATCTTGATCCACAGAAATAC
 ATGAAATGTCTGGTCTGTCCACCCCATCAACAAGTCTTGAAAACAAGCAACAGATGGATAGTCTGTCCAAATGGACATAAG
 ACAGACAGCAGTTTCCCTGGTGGTTCAGGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCTGGAAGCAG
 AGCTGGGGAGGGAGAGCCATCACCTTGATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGCTGAGAGAG
 GAAGAGCTGCAACGGAATTAGGAAGACCAAGACACAGATCACCCGGGGCTTACTAGCCTACAGATGTCCTACGGGAACG
 TGGGCTGGCCAGCATAGGGCTAGCAAATTTGAGTTGGATGATTGTTTTTGCTCAAGGCAACCAGAGGAACTTGCATAC
 AGAGACAGATATACTGGGAGAAATGACTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAGTCTCTGCC
 CAAACATAAAGAGAACTCTGGGGAGCCTGAGCCACAAAAATGTTCCCTTTATTTTATGTAAACCTCAAGGGTTATAGACT
 GCCATGCTAGACAAGCTTGTCCATGTAATATCCCATGTTTTTACCCTGCCCCGCTTGATTAGACTCCTAGCACCTGG
 CTAGTTTCTAACATGTTTTGTGTCAGCACAGTTTTTAATAAATGCTTGTTACATTCA

Silencing of CD86 in dendritic cells by small interfering RNA regulates cytokine
 production in T cells from patients with allergic rhinitis in vitro
 Mol Med Rep 20 (4), 3893-3900 (2019)

AGAAGTTATTTGGAACCAAGCAAGAGCACTGTCCCTGGCTGTGGTGTGTTTCTCTAGTCAGTTCCCCTTTCTGTATTG
 AGTTCTACCGTCAGTCTGTCATTATTTCTCTCTCTACAAGGAGCCTTAGGAGGTACGGGGAGCTCGCAAATACTCCTTT
 TGGTTTATTTCTTACCACCTTGCTTCTGTGTTCCCTTGGGAATGCTGCTGTGCTTATGCATCTGGTCTCTTTTTGGAGCTAC
 AGTGAGCAGGCATTTGTGACAGCACTATGGGACTGAGTAACATTCTCTTTGTGATGGCCTTCTGCTCTCTGGTGTGCT
 CCTCTGAAGATTCAAGCTTATTTCAATGAGACTGCAGACCTGCCATGCCAATTTGCAAACCTCTCAAAACCAAGCCTGAG
 TGAGCTAGTAGTATTTTGGCAGGACCAGGAAAACTTGGTTCTGAATGAGGTATACTTAGGCAAAGAGAAATTTGACAGTG
 TTCATTCCAAGTATATGGGCCGCACAAGTTTTGATTGCGACAGTTGGACCCTGAGACTTCACAATCTTCAGATCAAGGAC
 AAGGGCTTGTATCAATGTATCATCCATCACAAAAAGCCACAGGAATGATTGCGATCCACCAGATGAATTCTGAACTGTC
 AGTGCTTGCTAACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAAAATGTGTACATAAATTTGACCTGCT
 CATCTATACACGGTTACCCAGAACCTAAGAAGATGAGTGTTTTGCTAAGAACCAAGAATTCAACTATCGAGTATGATGGT
 GTTATGCAGAAATCTCAAGATAATGTCACAGAACTGTACGACGTTTCCATCAGCTTGTCTGTTTCATTCCCTGATGTTAC
 GAGCAATATGACCATCTTCTGTATTCTGGAACCTGACAAGACGCGGCTTTTATCTTCACCTTTCTCTATAGGAACCAACA
 CAATGGAGAGGGAAGAGAGTGAACAGACCAAGAAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAGCCCAGCGT
 GTTTTTAAAGTTCTGAAGACATCTTCATGCGACAAAAGTGATACATGTTTTTAATTAAAGAGTAAAGCCCATACAAGTAT
 TCATTTTTCTACCCCTTTCCTTTGTAAGTTCCTGGGCAACCTTTTTGATTTCTTCCAGAAGGCAAAAAGACATTACCATG
 AGTAATAAGGGGGCTCCAGGACTCCCTCTAAGTGGAATAGCCTCCCTGTAAGTCCAGCTCTGCTCCGTATGCCAAGAGGA
 GACTTTAATTCTCTTACTGCTTCTTTTCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCATGACCTGGA
 AATAAAATTTAGGACCAATACCTCCTCCAGATCAGATTCTTCTCTTAATTTTCATAGATTGTGTTTTTTTTTAAATAGAC
 CTCTCAATTTCTGAAAACTGCCTTTTATCTGCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGTACCTGTGA
 CTAAACAACACTACCTCCTCAGTCTGGGTGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAAACATAGAGATC
 TATGTACTGTAATAGTGTGATTACTATGCTCTAGAGAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCTGTCAGGGT
 CAGTAAGGAAAAACGGTGGCCTAGGGTACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAGAGGCAGAG
 ATAGAACCTGGAGCCACTTCTATCTGGGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCCAACAAGCCATAGTGAGAG

AACTGAATAAACAGGAAAAATGCCAGAGCTTGTGAACCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCCTGGGGAAG
CTGTGAAAGAACCAAAAAGAGATCACAATACTCAAAAAGAGAGAGAGAGAGAAAAAGAGAGATCTTGATCCACAGAAATAC
ATGAAATGTCTGGTCTGTCCACCCCATCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATGGACATAAG
ACAGACAGCAGTTTCCCTGGTGGTCAGGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCCCTGGAAGCAG
AGCTGGGGAGGGAGAGCCATCACCTTGATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGCTGAGAGAG
GAAGAGCTGCAACGGAATTAGGAAGACCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCCTACGGGAACG
TGGGCTGGCCAGCATAGGGCTAGCAAATTTGAGTTGGATGATTGTTTTTGTCTCAAGGCAACCAGAGGAAACTTGCATAC
AGAGACAGATATACTGGGAGAAATGACTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAGTCTCTGCC
CAAACATAAAGAGAACTCTGGGGAGCCTGAGCCACAAAAATGTTCTTTATTTTATGTAAACCCTCAAGGGTTATAGACT
GCCATGCTAGACAAGCTTGTCCATGTAATATTCCCATGTTTTTACCCTGCCCCTGCCTTGATTAGACTCCTAGCACCTGG
CTAGTTTCTAACATGTTTTGTGCAGCACAGTTTTTAATAAATGCTTGTTACATTCA

Staphylococcal and Streptococcal Superantigens Trigger B7/CD28 Costimulatory
Receptor Engagement to Hyperinduce Inflammatory Cytokines
Front Immunol 10, 942 (2019)

AGAAGTTATTTGGAACCAAGCAAGAGCACTGTCCCTGGCTGTGGTGTGTTTTCTCTAGTCAGTTCCCCTTTCTGTATTTG
AGTTCTACCGTCAGTCTCTGGCATTATTTCTCTCTCTACAAGGAGCCTTAGGAGGTACGGGGAGCTCGAAATACTCCTTT
TGTTTTATTCTTACCACCTTGCTTCTGTGTTCCCTTGGGAATGCTGCTGTGCTTATGCATCTGGTCTCTTTTTGGAGCTAC
AGTGGACAGGCATTTGTGACAGCACTATGGGACTGAGTAACATTCTCTTTGTGATGGCCTTCTGCTCTCTGGTGTGCT
CCTCTGAAGATTCAAGCTTATTTCAATGAGACTGCAGACCTGCCATGCCAATTTGCAAACTCTCAAAACCAAGCCTGAG
TGAGCTAGTAGTATTTTGGCAGGACCAGGAAAACTTGGTTCTGAATGAGGTATACTTAGGCAAAGAGAAATTTGACAGTG
TTCATTCCAAGTATATGGGCCGCACAAGTTTTGATTTCGGACAGTTGGACCCTGAGACTTCACAATCTTCAGATCAAGGAC
AAGGGCTTGTATCAATGTATCATCCATCACAAAAAGCCACAGGAATGATTTCGCATCCACCAGATGAATTCTGAACTGTC
AGTGCTTGCTAACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAAAATGTGTACATAAATTTGACCTGCT
CATCTATACACGGTTACCCAGAACCTAAGAAGATGAGTGTTTTGCTAAGAACCAAGAATTCAACTATCGAGTATGATGGT
GTTATGCAGAAATCTCAAGATAATGTACAGAACTGTACGACGTTTCCATCAGCTTGTCTGTTTCATTCCCTGATGTTAC
GAGCAATATGACCATCTTCTGTATTCTGGAACCTGACAAGACGCGGCTTTTATCTTACCTTTCTCTATAGGAACCAACA
CAATGGAGAGGGAAGAGAGTGAACAGACCAAGAAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAGCCCAGCGT
GTTTTTAAAGTTCTGAAGACATCTTCATGCGACAAAAGTGATACATGTTTTTAATTAAGAGTAAAGCCCATACAAGTAT
TCATTTTTTCTACCTTTTCTTTGTAAGTTCTGGGCAACCTTTTTGATTTCTTCCAGAAGGCAAAAAGACATTACCATG
AGTAATAAGGGGGCTCCAGGACTCCCTCTAAGTGGAATAGCCTCCCTGTAAGTCCAGCTCTGCTCCGTATGCCAAGAGGA
GACTTTAATTCTCTTACTGCTTCTTTTCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCATGACCTGGA
AATAAAATTTAGGACCAATACCTCCTCCAGATCAGATTCTTCTTAAATTTTATAGATTGTGTTTTTTTTTAAATAGAC
CTCTCAATTTCTGAAAACTGCCTTTTATCTGCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGTACCTGTGA
CTAAACAACTACCTCCTCAGTCTGGGTGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAAACATAGAGATC
TATGTACTGTAATAGTGTGATTACTATGCTCTAGAGAAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCTGTACGGGT
CAGTAAGGAAAACGGTGGCCTAGGGTACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAGAGGCAGAG
ATAGAACCTGGAGCCACTTCTATCTGGGCTGTGCTAATATTGAGGAGGCTTGCCCCACCAACAAGCCATAGTGGAGAG
AACTGAATAAACAGGAAAAATGCCAGAGCTTGTGAACCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCCTGGGGAAG
CTGTGAAAGAACCAAAAAGAGATCACAATACTCAAAAAGAGAGAGAGAGAGAAAAAGAGAGATCTTGATCCACAGAAATAC
ATGAAATGTCTGGTCTGTCCACCCCATCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATGGACATAAG
ACAGACAGCAGTTTCCCTGGTGGTCAGGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCCCTGGAAGCAG
AGCTGGGGAGGGAGAGCCATCACCTTGATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGCTGAGAGAG
GAAGAGCTGCAACGGAATTAGGAAGACCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCCTACGGGAACG
TGGGCTGGCCAGCATAGGGCTAGCAAATTTGAGTTGGATGATTGTTTTTGTCTCAAGGCAACCAGAGGAAACTTGCATAC
AGAGACAGATATACTGGGAGAAATGACTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAGTCTCTGCC
CAAACATAAAGAGAACTCTGGGGAGCCTGAGCCACAAAAATGTTCTTTATTTTATGTAAACCCTCAAGGGTTATAGACT
GCCATGCTAGACAAGCTTGTCCATGTAATATTCCCATGTTTTTACCCTGCCCCTGCCTTGATTAGACTCCTAGCACCTGG

CTAGTTTCTAACATGTTTTGTGCAGCACAGTTTTTAATAAATGCTTGTTACATTCA

Localization in situ of the co-stimulatory molecules B7.1, B7.2, CD40 and their ligands in normal human lymphoid tissue

Eur J Immunol 25 (11), 3023-3029 (1995)

AGAAGTTATTTGGAACCAAGCAAGAGCACTGTCCCTGGCTGTGGTGTGTTTTCTCTAGTCAGTTCCCCTTTCTGTATTG
AGTTCTACCGTCAGTCCTGGCATTATTTCTCTCTCTACAAGGAGCCTTAGGAGGTACGGGGAGCTCGCAAATACTCCTTT
TGGTTTTATTCTTACCACCTTGCTTCTGTGTTCCCTGGGAATGCTGCTGTGCTTATGCATCTGGTCTCTTTTTGGAGCTAC
AGTGGACAGGCATTTGTGACAGCACTATGGGACTGAGTAACATTCTCTTTGTGATGGCCTTCCTGCTCTCTGGTGTGCT
CCTCTGAAGATTCAAGCTTATTTCAATGAGACTGCAGACCTGCCATGCCAATTTGCAAACCTCTCAAAACCAAAGCCTGAG
TGAGCTAGTAGTATTTTGGCAGGACCAGGAAAACTTGGTTCTGAATGAGGTATACTTAGGCAAAGAGAAATTTGACAGTG
TTCATTTCCAAGTATATGGGCCGCACAAGTTTTGATTTCGGACAGTTGGACCCTGAGACTTCACAATCTTCAGATCAAGGAC
AAGGGCTTGTATCAATGTATCATCCATCACAAAAAGCCACAGGAATGATTTCGCATCCACCAGATGAATTCTGAACTGTC
AGTGCTTGCTAACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAAAATGTGTACATAAAATTTGACCTGCT
CATCTATACACGGTTACCCAGAACCTAAGAAGATGAGTGTTTTGCTAAGAACCAAGAATTCAACTATCGAGTATGATGGT
GTTATGCAGAAATCTCAAGATAATGTCACAGAACTGTACGACGTTTCCATCAGCTTGTCTGTTTCATTCCCTGATGTTAC
GAGCAATATGACCATCTTCTGTATTCTGGAACCTGACAAGACGCGGCTTTTATCTTCACCTTTCTCTATAGGAACCAACA
CAATGGAGAGGGAAGAGAGTGAACAGACCAAGAAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAGCCCAGCGT
GTTTTTAAAGTTCTGAAGACATCTTCATGCGACAAAAAGTGATACATGTTTTTAATTAAAGAGTAAAGCCCATACAAGTAT
TCATTTTTTCTACCTTTTCTTTGTAAGTTCCCTGGGCAACCTTTTTGATTTCTTCAGAAAGGCAAAAAGACATTACCATG
AGTAATAAGGGGGCTCCAGGACTCCCTCTAAGTGGAATAGCCTCCCTGTAACCTCCAGCTCTGCTCCGTATGCCAAGAGGA
GACTTTAATTCTCTTACTGCTTCTTTTCACTTCAGAGCACACTTATGGGCCAAGCCAGCTTAATGGCTCATGACCTGGA
AATAAAATTTAGGACCAATACCTCCTCCAGATCAGATTCTTCTCTTAATTTTCATAGATTGTGTTTTTTTTTAAATAGAC
CTCTCAATTTCTGAAAACTGCCTTTTATCTGCCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGTACCTGTGA
CTAAACAACCTACCTCCTCAGTCTGGGTGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAAACATAGAGATC
TATGTACTGTAATAGTGTGATTACTATGCTCTAGAGAAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCTGTCAGGGT
CAGTAAGGAAAAACGGTGGCCTAGGGTACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAGAGGCAGAG
ATAGAACCTGGAGCCACTTCTATCTGGGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCCAACAAGCCATAGTGGAGAG
AACTGAATAAACAGGAAAAATGCCAGAGCTTGTGAACCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCCTGGGGAAG
CTGTGAAAGAACCAAAAAGAGATCACAACTCAAAAAGAGAGAGAGAGAGAAAAAGAGAGATCTTGATCCACAGAAATAC
ATGAAATGTCTGGTCTGTCCACCCCATCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATGGACATAAG
ACAGACAGCAGTTTCCCTGGTGGTCAGGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCTGGAAGCAG
AGCTGGGGAGGGAGAGCCATCACCTTGATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGCTGAGAGAG
GAAGAGCTGCAACGGAATTAGGAAGACCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCCTACGGGAACG
TGGGCTGGCCCAGCATAGGGCTAGCAAATTTGAGTTGGATGATTGTTTTTGCTCAAGGCAACCAGAGGAACTTGCCATAC
AGAGACAGATATACTGGGAGAAATGACTTTGAAAACTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAGTCTCTGCC
CAAACATAAAGAGAACTCTGGGGAGCCTGAGCCACAAAAATGTTCCCTTTATTTTATGTAAACCCCTCAAGGGTTATAGACT
GCCATGCTAGACAAGCTTGTCCATGTAATATCCCATGTTTTTACCCTGCCCTGCCTTGATTAGACTCCTAGCACCTGG
CTAGTTTCTAACATGTTTTGTGCAGCACAGTTTTTAATAAATGCTTGTTACATTCA

CD86 (B70/B7-2) on endothelial cells co-stimulates allogeneic CD4+ T cells

Int Immunol 7 (8), 1331-1337 (1995)

AGAAGTTATTTGGAACCAAGCAAGAGCACTGTCCCTGGCTGTGGTGTGTTTTCTCTAGTCAGTTCCCCTTTCTGTATTG
AGTTCTACCGTCAGTCCTGGCATTATTTCTCTCTCTACAAGGAGCCTTAGGAGGTACGGGGAGCTCGCAAATACTCCTTT
TGGTTTTATTCTTACCACCTTGCTTCTGTGTTCCCTGGGAATGCTGCTGTGCTTATGCATCTGGTCTCTTTTTGGAGCTAC
AGTGGACAGGCATTTGTGACAGCACTATGGGACTGAGTAACATTCTCTTTGTGATGGCCTTCCTGCTCTCTGGTGTGCT
CCTCTGAAGATTCAAGCTTATTTCAATGAGACTGCAGACCTGCCATGCCAATTTGCAAACCTCTCAAAACCAAAGCCTGAG
TGAGCTAGTAGTATTTTGGCAGGACCAGGAAAACTTGGTTCTGAATGAGGTATACTTAGGCAAAGAGAAATTTGACAGTG

TTCATTCCAAGTATATGGGCCGCACAAGTTTTGATTTCGGACAGTTGGACCCTGAGACTTCACAATCTTCAGATCAAGGAC
 AAGGGCTTGTATCAATGTATCATCCATCACAAAAAGCCACAGGAATGATTTCGCATCCACCAGATGAATTCTGAACTGTC
 AGTGCTTGCTAACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAAAATGTGTACATAAATTTGACCTGCT
 CATCTATACACGGTTACCCAGAACCTAAGAAGATGAGTGTTTTGCTAAGAACCAAGAATTCAACTATCGAGTATGATGGT
 GTTATGCAGAAATCTCAAGATAATGTCACAGAACTGTACGACGTTTCCATCAGCTTGTCTGTTTCATTCCCTGATGTTAC
 GAGCAATATGACCATCTTCTGTATTCTGGAACCTGACAAGACGCGGCTTTTATCTTCACCTTTCTCTATAGGAACCAACA
 CAATGGAGAGGGAAGAGAGTGAACAGACCAAGAAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAGCCCAGCGT
 GTTTTTAAAAAGTTCGAAGACATCTTCATGCGACAAAAGTGATACATGTTTTTAATTAAAGAGTAAAGCCCATACAAGTAT
 TCATTTTTTCTACCCTTTCTTTGTAAGTTCCTGGGCAACCTTTTTGATTTCTTCCAGAAGGCAAAAAGACATTACCATG
 AGTAATAAGGGGGCTCCAGGACTCCCTCTAAGTGGAATAGCCTCCCTGTAAGTCCAGCTCTGCTCCGTATGCCAAGAGGA
 GACTTTAATTCTCTTACTGCTTCTTTTCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCATGACCTGGA
 AATAAAATTTAGGACCAATACCTCCTCCAGATCAGATTCTTCTCTTAATTTTCATAGATTGTGTTTTTTTTTAAATAGAC
 CTCTCAATTTCTGAAAACTGCCTTTTATCTGCCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGTACCTGTGA
 CTAACAACACTACCTCCTCAGTCTGGGTGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAAACATAGAGATC
 TATGTACTGTAATAGTGTGATTACTATGCTCTAGAGAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCTGTCAGGGT
 CAGTAAGGAAAAACGGTGGCCTAGGGTACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAGAGGCAGAG
 ATAGAACCTGGAGCCACTTCTATCTGGGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCCAACAAGCCATAGTGGAGAG
 AACTGAATAAACAGGAAAAATGCCAGAGCTTGTGAACCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCCTGGGGAAG
 CTGTGAAAGAACCAAAAGAGATCACAATACTCAAAAAGAGAGAGAGAGAGAAAAAGAGAGATCTTGATCCACAGAAATAC
 ATGAAATGTCTGGTCTGTCCACCCCATCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATGGACATAAG
 ACAGACAGCAGTTTCCCTGGTGGTCAGGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCTGGAAGCAG
 AGCTGGGGAGGGAGAGCCATCACCTTGATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGCTGAGAGAG
 GAAGAGCTGCAACGGAATTAGGAAGACCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCCTACGGGAACG
 TGGGCTGGCCAGCATAGGGCTAGCAAATTTGAGTTGGATGATTGTTTTTGTCTCAAGGCAACCAGAGGAACTTGCATAC
 AGAGACAGATATACTGGGAGAAATGACTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAGTCTCTGCC
 CAAACATAAAGAGAACTCTGGGGAGCCTGAGCCACAAAAATGTTCTTTATTTTATGTAAACCCTCAAGGGTTATAGACT
 GCCATGCTAGACAAGCTTGTCCATGTAATATCCCATGTTTTTACCCTGCCCCCTGCCTTGATTAGACTCCTAGCACCTGG
 CTAGTTTCTAACATGTTTTGTGCAGCACAGTTTTTAATAAATGCTTGTTACATTCA

CD80 (B7) and CD86 (B70) provide similar costimulatory signals for T cell
 proliferation, cytokine production, and generation of CTL
 J Immunol 154 (1), 97-105 (1995)

AGAAGTTATTTGGAACCAAGCAAGAGCACTGTCCCTGGCTGTGGTGTTGTTTCTCTAGTCAGTTCCCCTTTCTGTATTTG
 AGTTCTACCGTCAGTCTGTCATTATTTCTCTCTCTACAAGGAGCCTTAGGAGGTACGGGGAGCTCGCAAATACTCCTTT
 TGGTTTTATTTCTTACCACCTTGCTTCTGTGTTCCCTGGGAATGCTGCTGTGCTTATGCATCTGGTCTCTTTTTGGAGCTAC
 AGTGGACAGGCATTTGTGACAGCACTATGGGACTGAGTAACATTCTCTTTGTGATGGCCTTCTGCTCTCTGGTGTGCT
 CCTCTGAAGATTCAAGCTTATTTCAATGAGACTGCAGACCTGCCATGCCAATTTGAAAACCTCTCAAAACCAAGCCTGAG
 TGAGCTAGTAGTATTTTGGCAGGACCAGGAAAACTTGGTTCTGAATGAGGTATACTTAGGCAAAGAGAAATTTGACAGTG
 TTCATTCCAAGTATATGGGCCGCACAAGTTTTGATTTCGGACAGTTGGACCCTGAGACTTCACAATCTTCAGATCAAGGAC
 AAGGGCTTGTATCAATGTATCATCCATCACAAAAAGCCACAGGAATGATTTCGCATCCACCAGATGAATTCTGAACTGTC
 AGTGCTTGCTAACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAAAATGTGTACATAAATTTGACCTGCT
 CATCTATACACGGTTACCCAGAACCTAAGAAGATGAGTGTTTTGCTAAGAACCAAGAATTCAACTATCGAGTATGATGGT
 GTTATGCAGAAATCTCAAGATAATGTCACAGAACTGTACGACGTTTCCATCAGCTTGTCTGTTTCATTCCCTGATGTTAC
 GAGCAATATGACCATCTTCTGTATTCTGGAACCTGACAAGACGCGGCTTTTATCTTCACCTTTCTCTATAGGAACCAACA
 CAATGGAGAGGGAAGAGAGTGAACAGACCAAGAAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAGCCCAGCGT
 GTTTTTAAAAAGTTCGAAGACATCTTCATGCGACAAAAGTGATACATGTTTTTAATTAAAGAGTAAAGCCCATACAAGTAT
 TCATTTTTTCTACCCTTTCTTTGTAAGTTCCTGGGCAACCTTTTTGATTTCTTCCAGAAGGCAAAAAGACATTACCATG
 AGTAATAAGGGGGCTCCAGGACTCCCTCTAAGTGGAATAGCCTCCCTGTAAGTCCAGCTCTGCTCCGTATGCCAAGAGGA

GACTTTAATTCTCTTACTGCTTCTTTTCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCATGACCTGGA
 AATAAAATTTAGGACCAATACCTCCTCCAGATCAGATTCTTCTCTTAATTTTCATAGATTGTGTTTTTTTTTAAATAGAC
 CTCTCAATTTCTGAAAACTGCCTTTTATCTGCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGTACCTGTGA
 CTAAACAACTACCTCCTCAGTCTGGGTGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAAACATAGAGATC
 TATGTACTGTAATAGTGTGATTACTATGCTCTAGAGAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCTGTCAGGGT
 CAGTAAGGAAAACGGTGGCCTAGGGTACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAAATTAGGAGAGGCAGAG
 ATAGAACCTGGAGCCACTTCTATCTGGGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCAACAAGCCATAGTGGAGAG
 AACTGAATAAACAGGAAAATGCCAGAGCTTGTGAACCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCCTGGGGAAG
 CTGTGAAAGAACCAAAAAGAGATCACAATACTCAAAAAGAGAGAGAGAGAGAAAAAGAGAGATCTTGATCCACAGAAATAC
 ATGAAATGTCTGGTCTGTCCACCCCATCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATGGACATAAG
 ACAGACAGCAGTTTCCCTGGTGGTCAGGGAGGGGTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCCCTGGAAGCAG
 AGCTGGGGAGGGAGAGCCATCACCTTGATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGCTGAGAGAG
 GAAGAGCTGCAACGGAATTAGGAAGACCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCCTACGGGAACG
 TGGGCTGGCCCAGCATAGGGCTAGCAAATTTGAGTTGGATGATTGTTTTTGTCTCAAGGCAACCAGAGGAAACTTGCATAC
 AGAGACAGATATACTGGGAGAAATGACTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAGTCTCTGCC
 CAAACATAAAGAGAACTCTGGGGAGCCTGAGCCACAAAAATGTTCTTTATTTTATGTAAACCCTCAAGGGTTATAGACT
 GCCATGCTAGACAAGCTTGTCCATGTAATATTTCCCATGTTTTTACCCTGCCCCTGCCTTGATTAGACTCCTAGCACCTGG
 CTAGTTTCTAACATGTTTTGTGCAGCACAGTTTTTAATAAATGCTTGTTACATTCA

The B7-2 (B70) costimulatory molecule expressed by monocytes and activated B
 lymphocytes is the CD86 differentiation antigen
 Blood 84 (5), 1402-1407 (1994)

AGAAGTTATTTGGAACCAAGCAAGAGCACTGTCCCTGGCTGTGGTGTGTTTCTCTAGTCAGTTCCCCTTTCTGTATTG
 AGTTCTACCGTCAGTCTGGCATTATTTCTCTCTCTACAAGGAGCCTTAGGAGGTACGGGGAGCTCGAAATACTCCTTT
 TGGTTTTATTCTTACCACCTTGCTTCTGTGTTCCCTGGGAATGCTGCTGTGCTTATGCATCTGGTCTCTTTTTGGAGCTAC
 AGTGGACAGGCATTTGTGACAGCACTATGGGACTGAGTAACATTCTCTTTGTGATGGCCTTCTGCTCTCTGGTGCTGCT
 CCTCTGAAGATTCAAGCTTATTTCAATGAGACTGCAGACCTGCCATGCCAATTTGCAAACTCTCAAAACCAAGCCTGAG
 TGAGCTAGTAGTATTTTGGCAGGACCAGGAAAACCTTGGTTCTGAATGAGGTATACTTAGGCAAAGAGAAATTTGACAGTG
 TTCATTCCAAGTATATGGGCCGCACAAGTTTTGATTTCGGACAGTTGGACCCTGAGACTTCACAATCTTCAGATCAAGGAC
 AAGGGCTTGTATCAATGTATCATCCATCACAAAAAGCCACAGGAATGATTTCGCATCCACCAGATGAATTCTGAACTGTC
 AGTGCTTGCTAACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAAAATGTGTACATAAATTTGACCTGCT
 CATCTATACACGGTTACCCAGAACCTAAGAAGATGAGTGTTTTGCTAAGAACCAAGAATTCAACTATCGAGTATGATGGT
 GTTATGCAGAAATCTCAAGATAATGTACAGAACTGTACGACGTTTCCATCAGCTTGTCTGTTTCATTCCCTGATGTTAC
 GAGCAATATGACCATCTTCTGTATTCTGGAACCTGACAAGACGCGGCTTTTATCTTACCTTTCTCTATAGGAACCAACA
 CAATGGAGAGGGAAGAGAGTGAACAGACCAAGAAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAGCCCAGCGT
 GTTTTTAAAAAGTTGGAAGACATCTTCATGCGACAAAAAGTGATACATGTTTTTAATTAAAGAGTAAAGCCCATACAAGTAT
 TCATTTTTTCTACCCTTTCTTTGTAAGTTCCTGGGCAACCTTTTTGATTTCTTCCAGAAGGCAAAAAGACATTACCATG
 AGTAATAAGGGGGCTCCAGGACTCCCTCTAAGTGGAATAGCCTCCCTGTAAGTCCAGCTCTGCTCCGTATGCCAAGAGGA
 GACTTTAATTCTCTTACTGCTTCTTTTCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCATGACCTGGA
 AATAAAATTTAGGACCAATACCTCCTCCAGATCAGATTCTTCTCTTAATTTTCATAGATTGTGTTTTTTTTTAAATAGAC
 CTCTCAATTTCTGAAAACTGCCTTTTATCTGCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGTACCTGTGA
 CTAAACAACTACCTCCTCAGTCTGGGTGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAAACATAGAGATC
 TATGTACTGTAATAGTGTGATTACTATGCTCTAGAGAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCTGTCAGGGT
 CAGTAAGGAAAACGGTGGCCTAGGGTACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAAATTAGGAGAGGCAGAG
 ATAGAACCTGGAGCCACTTCTATCTGGGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCAACAAGCCATAGTGGAGAG
 AACTGAATAAACAGGAAAATGCCAGAGCTTGTGAACCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCCTGGGGAAG
 CTGTGAAAGAACCAAAAAGAGATCACAATACTCAAAAAGAGAGAGAGAGAGAAAAAGAGAGATCTTGATCCACAGAAATAC
 ATGAAATGTCTGGTCTGTCCACCCCATCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATGGACATAAG

ACAGACAGCAGTTTCCCTGGTGGTCAGGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCTGGAAGCAG
AGCTGGGGAGGGAGAGCCATCACCTTGATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGCTGAGAGAG
GAAGAGCTGCAACGGAATTAGGAAGACCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCCTACGGGAACG
TGGGCTGGCCCAGCATAGGGCTAGCAAATTTGAGTTGGATGATTGTTTTTGCTCAAGGCAACCAGAGGAACTTGCATAC
AGAGACAGATATACTGGGAGAAATGACTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAGTCTCTGCC
CAAACATAAAGAGAACTCTGGGGAGCCTGAGCCACAAAAATGTTCTTTATTTTATGTAAACCCTCAAGGGTTATAGACT
GCCATGCTAGACAAGCTTGTCCATGTAATATTCCCATGTTTTTACCCTGCCCTGCCTTGATTAGACTCCTAGCACCTGG
CTAGTTTCTAACATGTTTTGTGCAGCACAGTTTTTAATAAATGCTTGTTACATTCA

Molecular cloning and expression of early T cell costimulatory molecule-1 and
its characterization as B7-2 molecule

J Immunol 152 (10), 4929-4936 (1994)

AGAAGTTATTTGGAACCAAGCAAGAGCACTGTCCCTGGCTGTGGTGTGTTTTCTCTAGTCAGTTCCCCTTTCTGTATTTG
AGTTCTACCGTCAGTCCTGGCATTATTTCTCTCTCTACAAGGAGCCTTAGGAGGTACGGGGAGCTCGAAATACTCCTTT
TGTTTTATTCTTACCACCTTGCTTCTGTGTTCCCTGGGAATGCTGCTGTGCTTATGCATCTGGTCTCTTTTTGGAGCTAC
AGTGGACAGGCATTTGTGACAGCACTATGGGACTGAGTAACATTCTCTTTGTGATGGCCTTCTGCTCTCTGGTGTGCT
CCTCTGAAGATTCAAGCTTATTTCAATGAGACTGCAGACCTGCCATGCCAATTTGCAAACCTCTCAAAACCAAAGCCTGAG
TGAGCTAGTAGTATTTTGGCAGGACCAGGAAAACTTGGTTCTGAATGAGGTATACTTAGGCAAAGAGAAATTTGACAGTG
TTCATTCCAAGTATATGGGCCGCACAAGTTTTGATTTCGGACAGTTGGACCCTGAGACTTCACAATCTTCAGATCAAGGAC
AAGGGCTTGTATCAATGTATCATCCATCACAAAAAGCCACAGGAATGATTTCGCATCCACCAGATGAATTCTGAACTGTC
AGTGCTTGCTAACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAAAATGTGTACATAAATTTGACCTGCT
CATCTATACACGGTTACCCAGAACCTAAGAAGATGAGTGTTTTGCTAAGAACCAAGAATTCAACTATCGAGTATGATGGT
GTTATGCAGAAATCTCAAGATAATGTACAGAACTGTACGACGTTTCCATCAGCTTGTCTGTTTCATTCCCTGATGTTAC
GAGCAATATGACCATCTTCTGTATTCTGGAACCTGACAAGACGCGGCTTTTATCTTCACCTTTCTCTATAGGAACCAACA
CAATGGAGAGGGAAGAGAGTGAACAGACCAAGAAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAGCCCAGCGT
GTTTTTAAAAGTTGGAAGACATCTTCATGCGACAAAAGTGATACATGTTTTTAATTAAGAGTAAAGCCCATACAAGTAT
TCATTTTTTCTACCCTTTCTTTGTAAGTTCCTGGGCAACCTTTTTGATTTCTTCCAGAAGGCAAAAAGACATTACCATG
AGTAATAAGGGGGCTCCAGGACTCCCTCTAAGTGGAATAGCCTCCCTGTAACCTCCAGCTCTGCTCCGTATGCCAAGAGGA
GACTTTAATTTCTTACTGCTTCTTTTCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCATGACCTGGA
AATAAAATTTAGGACCAATACCTCCTCCAGATCAGATTCTTCTCTTAATTTTCATAGATTGTGTTTTTTTTTAAATAGAC
CTCTCAATTTCTGAAAACTGCCTTTTATCTGCCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGTACCTGTGA
CTAAACAACCTACCTCCTCAGTCTGGGTGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAACATAGAGATC
TATGTACTGTAATAGTGTGATTACTATGCTCTAGAGAAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCTGTCAGGGT
CAGTAAGGAAAAACGGTGGCCTAGGGTACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAGAGGCAGAG
ATAGAACCTGGAGCCACTTCTATCTGGGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCAACAAGCCATAGTGAGAG
AACTGAATAAACAGGAAAAATGCCAGAGCTTGTGAACCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCCTGGGGAAAG
CTGTGAAAGAACCAAAAAGAGATCACAACTCAAAAAGAGAGAGAGAGAGAAAAAAGAGAGATCTTGATCCACAGAAATAC
ATGAAATGTCTGGTCTGTCCACCCCATCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATGGACATAAG
ACAGACAGCAGTTTCCCTGGTGGTCAGGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCTGGAAGCAG
AGCTGGGGAGGGAGAGCCATCACCTTGATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGCTGAGAGAG
GAAGAGCTGCAACGGAATTAGGAAGACCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCCTACGGGAACG
TGGGCTGGCCCAGCATAGGGCTAGCAAATTTGAGTTGGATGATTGTTTTTGCTCAAGGCAACCAGAGGAACTTGCATAC
AGAGACAGATATACTGGGAGAAATGACTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAGTCTCTGCC
CAAACATAAAGAGAACTCTGGGGAGCCTGAGCCACAAAAATGTTCTTTATTTTATGTAAACCCTCAAGGGTTATAGACT
GCCATGCTAGACAAGCTTGTCCATGTAATATTCCCATGTTTTTACCCTGCCCTGCCTTGATTAGACTCCTAGCACCTGG
CTAGTTTCTAACATGTTTTGTGCAGCACAGTTTTTAATAAATGCTTGTTACATTCA

Increases of CD80 and CD86 Expression on Peripheral Blood Cells and their Gene

Polymorphisms in Autoimmune Thyroid Disease

Immunol Invest 49 (1-2), 191-203 (2020)

AGAAGTTATTTGGAACCAAGCAAGAGCACTGTCCCTGGCTGTGGTGTGTTTCTCTAGTCAGTTCCCCTTTCTGTATTG
AGTTCTACCGTCAGTCCTGGCATTATTTCTCTCTCTACAAGGAGCCTTAGGAGGTACGGGGAGCTCGCAAATACTCCTTT
TGGTTTATTCTTACCACCTTGCTTCTGTGTTCCCTTGGGAATGCTGCTGTGCTTATGCATCTGGTCTCTTTTTGGAGCTAC
AGTGGACAGGCATTTGTGACAGCACTATGGGACTGAGTAACATTCTCTTTGTGATGGCCTTCCTGCTCTCTGGTGTGCT
CCTCTGAAGATTCAAGCTTATTTCAATGAGACTGCAGACCTGCCATGCCAATTTGCAAACCTCTCAAAACCAAGCCTGAG
TGAGCTAGTAGTATTTTGGCAGGACCAGGAAAACTTGGTTCTGAATGAGGTATACTTAGGCAAAGAGAAATTTGACAGTG
TTCATTCCAAGTATATGGGCCGCACAAGTTTTGATTGCGACAGTTGGACCCTGAGACTTCACAATCTTCAGATCAAGGAC
AAGGGCTTGTATCAATGTATCATCCATCACAAAAAGCCACAGGAATGATTGCGATCCACCAGATGAATTCTGAACTGTC
AGTGCTTGCTAACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAAAATGTGTACATAAAATTTGACCTGCT
CATCTATACACGGTTACCCAGAACCTAAGAAGATGAGTGTTTTGCTAAGAACCAAGAATTCAACTATCGAGTATGATGGT
GTTATGCAGAAATCTCAAGATAATGTACAGAACTGTACGACGTTTTCCATCAGCTTGTCTGTTTCATTCCCTGATGTTAC
GAGCAATATGACCATCTTCTGTATTCTGGAACCTGACAAGACGCGGCTTTTATCTTCACCTTTCTCTATAGAGCTTGAGG
ACCCTCAGCTCCCCAGACCACATTCCCTGGATTACAGCTGTACTTCCAACAGTTATTATATGTGTGATGGTTTTCTGT
CTAATTCTATGAAATGGAAGAAGAAGAAGCGGCTCGCAACTCTTATAAATGTGGAACCAACACAATGGAGAGGGAAGA
GAGTGAACAGACCAAGAAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAGCCAGCGTGTTTTTAAAGTTCTGA
AGACATCTTTCATGCGACAAAAGTGATACATGTTTTTAATTAAGAGTAAAGCCCATACAAGTATTCATTTTTTCTACCCT
TTCCTTTGTAAGTTCCTGGGCAACCTTTTTGATTCTTCCAGAAGGCAAAAAGACATTACCATGAGTAATAAGGGGGCTC
CAGGACTCCCTCTAAGTGGAATAGCCTCCCTGTAACCTCAGCTCTGCTCCGTATGCCAAGAGGAGACTTTAATTCTCTTA
CTGCTTCTTTTCACTTCAGAGCACACTTATGGGCCAAGCCAGCTTAATGGCTCATGACCTGGAAATAAAATTTAGGACC
AATACCTCCTCCAGATCAGATTCTTCTCTTAATTTTCATAGATTGTGTTTTTTTTTAAATAGACCTCTCAATTTCTGGAA
AACTGCCTTTTATCTGCCCAGAATTCTAAGCTGGTGCCCACTGAATTTTGTGTGTACCTGTGACTAAACAACCTACCTCC
TCAGTCTGGGTGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAAACATAGAGATCTATGTACTGTAATAGT
GTGATTACTATGCTCTAGAGAAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCTGTGAGGGTCAGTAAGAAAAACGGT
GGCCTAGGGTACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAGAGGCAGAGATAGAACCTGGAGCCA
CTTCTATCTGGGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCCAACAAGCCATAGTGAGAGAACTGAATAAACAGGA
AAATGCCAGAGCTTGTGAACCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCCTGGGGAAGCTGTGAAAGAACCAAA
AGAGATCACAATACTCAAAAAGAGAGAGAGAGAGAAAAAAGAGAGATCTTGATCCACAGAAATACATGAAATGTCTGGTCT
GTCCACCCCATCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATGGACATAAGACAGACAGCAGTTTCC
CTGGTGGTCAGGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCTGGAAGCAGAGCTGGGGAGGGAGAG
CCATCACCTTGATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGCTGAGAGAGGAAGAGCTGCAACGGA
ATTAGGAAGACCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCCTACGGGAACGTGGGCTGGCCCAGCAT
AGGGCTAGCAAAATTTGAGTTGGATGATTGTTTTTGTCTCAAGGCAACCAGAGGAACTTGCATACAGAGACAGATATACTG
GGAGAAATGACTTTGAAAACCTGGCTCTAAGTGGGATCACTAAGGGATGGGGCAGTCTCTGCCCCAACATAAAGAGAAC
TCTGGGGAGCCTGAGCCACAAAAATGTTCCCTTATTTTATGTAAACCCTCAAGGGTTATAGACTGCCATGCTAGACAAGC
TTGTCCATGTAATATTCCCATGTTTTTACCCTGCCCTGCCTTGATTAGACTCCTAGCACCTGGCTAGTTTCTAACATGT
TTTGTGCAGCACAGTTTTTAATAAATGCTTGTACATTCA

Cowpox virus encodes a protein that binds B7.1 and B7.2 and subverts T cell costimulation

Proc Natl Acad Sci U S A 116 (42), 21113-21119 (2019)

AGAAGTTATTTGGAACCAAGCAAGAGCACTGTCCCTGGCTGTGGTGTGTTTCTCTAGTCAGTTCCCCTTTCTGTATTG
AGTTCTACCGTCAGTCCTGGCATTATTTCTCTCTCTACAAGGAGCCTTAGGAGGTACGGGGAGCTCGCAAATACTCCTTT
TGGTTTATTCTTACCACCTTGCTTCTGTGTTCCCTTGGGAATGCTGCTGTGCTTATGCATCTGGTCTCTTTTTGGAGCTAC
AGTGGACAGGCATTTGTGACAGCACTATGGGACTGAGTAACATTCTCTTTGTGATGGCCTTCCTGCTCTCTGGTGTGCT
CCTCTGAAGATTCAAGCTTATTTCAATGAGACTGCAGACCTGCCATGCCAATTTGCAAACCTCTCAAAACCAAGCCTGAG
TGAGCTAGTAGTATTTTGGCAGGACCAGGAAAACTTGGTTCTGAATGAGGTATACTTAGGCAAAGAGAAATTTGACAGTG

TTCATTCCAAGTATATGGGCCGCACAAGTTTTGATTTCGGACAGTTGGACCCTGAGACTTCACAATCTTCAGATCAAGGAC
 AAGGGCTTGTATCAATGTATCATCCATCACAAAAAGCCACAGGAATGATTTCGCATCCACCAGATGAATTCTGAACTGTC
 AGTGCTTGCTAACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAAAATGTGTACATAAAATTTGACCTGCT
 CATCTATACACGGTTACCCAGAACCTAAGAAGATGAGTGTTTTGCTAAGAACCAAGAATTCAACTATCGAGTATGATGGT
 GTTATGCAGAAATCTCAAGATAATGTACAGAACTGTACGACGTTTCCATCAGCTTGTCTGTTTCATTCCCTGATGTTAC
 GAGCAATATGACCATCTTCTGTATTCTGGAACTGACAAGACGCGGCTTTTATCTTCACCTTTCTCTATAGAGCTTGAGG
 ACCCTCAGCCTCCCCAGACCACATTCCCTGGATTACAGCTGTACTTCCAACAGTTATTATATGTGTGATGGTTTTCTGT
 CTAATTCTATGGAAATGGAAGAAGAAGAAGCGGCCTCGCAACTCTTATAAATGTGGAACCAACACAATGGAGAGGGAAGA
 GAGTGAACAGACCAAGAAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAGCCCAGCGTGTTTTTAAAGTTCTGA
 AGACATCTTCATGCGACAAAAGTGATACATGTTTTTAATTAAGAGTAAAGCCCATACAAGTATTCATTTTTTCTACCCT
 TTCCTTTGTAAGTTCCTGGGCAACCTTTTTGATTTCCTCCAGAAGGCAAAAAGACATTACCATGAGTAATAAGGGGGCTC
 CAGGACTCCCTCTAAGTGGAATAGCCTCCCTGTAACCTCAGCTCTGCTCCGTATGCCAAGAGGAGACTTTAATTCTCTTA
 CTGCTTCTTTTCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCATGACCTGGAAATAAAATTTAGGACC
 AATACCTCCTCCAGATCAGATTCTTCTCTTAATTTTCATAGATTGTGTTTTTTTTTAAATAGACCTCTCAATTTCTGGAA
 AACTGCCTTTTATCTGCCCAGAATTCTAAGCTGGTGCCCACTGAATTTTGTGTGTACCTGTGACTAAACAACCTACCTCC
 TCAGTCTGGGTGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAAACATAGAGATCTATGTACTGTAATAGT
 GTGATTACTATGCTCTAGAGAAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCTGTGAGGGTCAGTAAGGAAAAACGGT
 GGCCTAGGGTACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAATTAGGAGAGGCAGAGATAGAACCTGGAGCCA
 CTTCTATCTGGGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCAACAAGCCATAGTGAGAGAACTGAATAAACAGGA
 AAATGCCAGAGCTTGTGAACCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCCTGGGGAAGCTGTGAAAGAACCAAAA
 AGAGATCACAATACTCAAAAAGAGAGAGAGAGAGAAAAAAGAGAGATCTTGATCCACAGAAATACATGAAATGTCTGGTCT
 GTCCACCCCATCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATGGACATAAGACAGACAGCAGTTTCC
 CTGGTGGTCAGGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCTGGAAGCAGAGCTGGGGAGGGAGAG
 CCATCACCTTGATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGCTGAGAGAGGAAGAGCTGCAACCGGA
 ATTAGGAAGACCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCTACGGGAACGTGGGCTGGCCCAGCAT
 AGGGCTAGCAAAATTTGAGTTGGATGATTGTTTTTGTCTCAAGGCAACCAGAGGAACTTGCATACAGAGACAGATATACTG
 GGAGAAATGACTTTGAAAACCTGGCTCTAAGTGGGATCACTAAGGGATGGGGCAGTCTCTGCCCCAACATAAAGAGAAC
 TCTGGGGAGCCTGAGCCACAAAAATGTTCCCTTATTTTATGTAAACCCTCAAGGGTTATAGACTGCCATGCTAGACAAGC
 TTGTCCATGTAATATTCCCATGTTTTTACCCTGCCCTTGATTAGACTCCTAGCACCTGGCTAGTTTCTAACATGT
 TTTGTGCAGCACAGTTTTTAATAAATGCTTGTACATTCA

Genetic association between cluster of differentiation 86 variations and sepsis
 risk: A case-control study

Medicine (Baltimore) 98 (43), e17482 (2019)

AGAAGTTATTTGGAACCAAGCAAGAGCACTGTCCCTGGCTGTGGTGTGTTTCTCTAGTCAGTTCCCCTTTCTGTATTTG
 AGTTCTACCGTCAGTCTGGCATTATTTCTCTCTCTACAAGGAGCCTTAGGAGGTACGGGGAGCTCGCAAATACTCCTTT
 TGGTTTTATTCTTACCACCTTGCTTCTGTGTTCCCTTGGGAATGCTGCTGTGCTTATGCATCTGGTCTCTTTTTGGAGCTAC
 AGTGGACAGGCATTTGTGACAGCACTATGGGACTGAGTAACATTCTCTTTGTGATGGCCTTCTGCTCTCTGGTGTGCT
 CCTCTGAAGATTCAAGCTTATTTCAATGAGACTGCAGACCTGCCATGCCAATTTGCAAACTCTCAAAACCAAGCCTGAG
 TGAGCTAGTAGTATTTTGGCAGGACCAGGAAAACTTGGTTCTGAATGAGGTATACTTAGGCAAAAGAGAAATTTGACAGTG
 TTCATTCCAAGTATATGGGCCGCACAAGTTTTGATTTCGGACAGTTGGACCCTGAGACTTCACAATCTTCAGATCAAGGAC
 AAGGGCTTGTATCAATGTATCATCCATCACAAAAAGCCACAGGAATGATTTCGCATCCACCAGATGAATTCTGAACTGTC
 AGTGCTTGCTAACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAAAATGTGTACATAAAATTTGACCTGCT
 CATCTATACACGGTTACCCAGAACCTAAGAAGATGAGTGTTTTGCTAAGAACCAAGAATTCAACTATCGAGTATGATGGT
 GTTATGCAGAAATCTCAAGATAATGTACAGAACTGTACGACGTTTCCATCAGCTTGTCTGTTTCATTCCCTGATGTTAC
 GAGCAATATGACCATCTTCTGTATTCTGGAACTGACAAGACGCGGCTTTTATCTTCACCTTTCTCTATAGAGCTTGAGG
 ACCCTCAGCCTCCCCAGACCACATTCCCTGGATTACAGCTGTACTTCCAACAGTTATTATATGTGTGATGGTTTTCTGT
 CTAATTCTATGGAAATGGAAGAAGAAGAAGCGGCCTCGCAACTCTTATAAATGTGGAACCAACACAATGGAGAGGGAAGA

GAGTGAACAGACCAAGAAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAGCCCAGCGTGTGTTTTAAAAAGTTCGA
AGACATCTTCATGCGACAAAAGTGATACATGTTTTTAATTAAGAGTAAAGCCCATACAAGTATTCATTTTTTCTACCCT
TTCCTTTGTAAGTTCCTGGGCAACCTTTTTGATTCTTCCAGAAGGCAAAAAGACATTACCATGAGTAATAAGGGGGCTC
CAGGACTCCCTCTAAGTGGAATAGCCTCCCTGTAAGTCCAGCTCTGCTCCGTATGCCAAGAGGAGACTTTAATTCTCTTA
CTGCTTCTTTTCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCATGACCTGGAAATAAAATTTAGGACC
AATACCTCCTCCAGATCAGATTCTTCTCTTAATTTTCATAGATTGTGTTTTTTTTTAAATAGACCTCTCAATTTCTGGAA
AACTGCCTTTTATCTGCCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGTACCTGTGACTAAACAACCTACCTCC
TCAGTCTGGGTGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAAACATAGAGATCTATGTACTGTAATAGT
GTGATTACTATGCTCTAGAGAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCTGTGAGGGTCAGTAAGGAAAACGGT
GGCCTAGGGTACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAGAGGCAGAGATAGAACCTGGAGCCA
CTTCTATCTGGGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCAACAAGCCATAGTGAGAGAACTGAATAAACAGGA
AAATGCCAGAGCTTGTGAACCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCCTGGGGAAGCTGTGAAAGAACCAAAA
AGAGATCACAATACTCAAAAAGAGAGAGAGAGAGAAAAAAGAGAGATCTTGATCCACAGAAATACATGAAATGTCTGGTCT
GTCCACCCCATCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATGGACATAAGACAGACAGCAGTTTCC
CTGGTGGTCAGGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCTGGAAGCAGAGCTGGGGAGGGAGAG
CCATCACCTTGATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGCTGAGAGAGGAAGAGCTGCAACGGA
ATTAGGAAGACCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCCTACGGGAACGTGGGCTGGCCCAGCAT
AGGGCTAGCAAATTTGAGTTGGATGATTGTTTTTGTCTCAAGGCAACCAGAGGAACTTGCATACAGAGACAGATATACTG
GGAGAAATGACTTTGAAAACCTGGCTCTAAGTGGGATCACTAAGGGATGGGGCAGTCTCTGCCCCAACATAAAGAGAAC
TCTGGGGAGCCTGAGCCACAAAAATGTTCTTTATTTTATGTAAACCCTCAAGGGTTATAGACTGCCATGCTAGACAAGC
TTGTCCATGTAATATTTCCATGTTTTTACCCTGCCCCTGCCTTGATTAGACTCCTAGCACCTGGCTAGTTTCTAACATGT
TTTGTGCAGCACAGTTTTTTAATAAATGCTTGTACATTCA

Silencing of CD86 in dendritic cells by small interfering RNA regulates cytokine
production in T cells from patients with allergic rhinitis in vitro

Mol Med Rep 20 (4), 3893-3900 (2019)

AGAAGTTATTTGGAACCAAGCAAGAGCACTGTCCCTGGCTGTGGTGTGTTTTCTCTAGTCAGTTCCCCTTTCTGTATTTG
AGTTCTACCGTCAGTCTGGCATTATTTCTCTCTCTACAAGGAGCCTTAGGAGGTACGGGGAGCTCGCAAATACTCCTTT
TGTTTTATTCTTACCACCTTGCTTCTGTGTTCTTGGGAATGCTGCTGTGCTTATGCATCTGGTCTCTTTTTGGAGCTAC
AGTGGACAGGCATTTGTGACAGCACTATGGGACTGAGTAACATTCTCTTTGTGATGGCCTTCTGCTCTCTGGTGTGCT
CCTCTGAAGATTCAAGCTTATTTCAATGAGACTGCAGACCTGCCATGCCAATTTGCAAACCTCTCAAAACCAAGCCTGAG
TGAGCTAGTAGTATTTTGGCAGGACCAGGAAAACCTGGTTCTGAATGAGGTATACTTAGGCAAAGAGAAATTTGACAGTG
TTCATTCCAAGTATATGGGCCGCACAAGTTTTGATTGCGACAGTTGGACCCTGAGACTTCACAATCTTCAGATCAAGGAC
AAGGGCTTGTATCAATGTATCATCCATCACAAAAAGCCACAGGAATGATTGCGATCCACCAGATGAATTCTGAACTGTC
AGTGCTTGCTAACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAAAATGTGTACATAAATTTGACCTGCT
CATCTATACACGGTTACCCAGAACCTAAGAAGATGAGTGTTTTGCTAAGAACCAAGAATTCAACTATCGAGTATGATGGT
GTTATGCAGAAATCTCAAGATAATGTACAGAACTGTACGACGTTTCCATCAGCTTGTCTGTTTCATTCCCTGATGTTAC
GAGCAATATGACCATCTTCTGTATTCTGAAAACCTGACAAGACGCGGCTTTTATCTTACCTTTCTCTATAGAGCTTGAGG
ACCCTCAGCCTCCCCAGACCACATTCCCTGGATTACAGCTGTACTTCCAACAGTTATTATATGTGTGATGGTTTTCTGT
CTAATTTCTATGAAAATGGAAGAAGAAGAAGCGGCCTCGCAACTCTTATAAATGTGGAACCAACACAATGGAGAGGGAAGA
GAGTGAACAGACCAAGAAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAGCCCAGCGTGTGTTTTAAAAAGTTCGA
AGACATCTTCATGCGACAAAAGTGATACATGTTTTTAATTAAGAGTAAAGCCCATACAAGTATTCATTTTTTCTACCCT
TTCCTTTGTAAGTTCCTGGGCAACCTTTTTGATTCTTCCAGAAGGCAAAAAGACATTACCATGAGTAATAAGGGGGCTC
CAGGACTCCCTCTAAGTGGAATAGCCTCCCTGTAAGTCCAGCTCTGCTCCGTATGCCAAGAGGAGACTTTAATTCTCTTA
CTGCTTCTTTTCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCATGACCTGGAAATAAAATTTAGGACC
AATACCTCCTCCAGATCAGATTCTTCTCTTAATTTTCATAGATTGTGTTTTTTTTTAAATAGACCTCTCAATTTCTGGAA
AACTGCCTTTTATCTGCCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGTACCTGTGACTAAACAACCTACCTCC
TCAGTCTGGGTGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAAACATAGAGATCTATGTACTGTAATAGT

GTGATTACTATGCTCTAGAGAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCTGTCAGGGTCAGTAAGGAAAACGGT
GGCCTAGGGTACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAGAGGCAGAGATAGAACCTGGAGCCA
CTTCTATCTGGGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCAACAAGCCATAGTGGAGAGAACTGAATAAACAGGA
AAATGCCAGAGCTTGTGAACCCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCCTGGGGAAGCTGTGAAAGAACCAAA
AGAGATCACAATACTCAAAAGAGAGAGAGAGAGAAAAAAGAGAGATCTTGATCCACAGAAATACATGAAATGTCTGGTCT
GTCCACCCCATCAACAAGTCTTGAACAAGCAACAGATGGATAGTCTGTCCAAATGGACATAAGACAGACAGCAGTTTCC
CTGGTGGTCAGGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCTGGAAGCAGAGCTGGGGAGGGAGAG
CCATCACCTTGATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGCTGAGAGAGGAAGAGCTGCAACGGA
ATTAGGAAGACCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCCTACGGGAACGTGGGCTGGCCACGAT
AGGGCTAGCAAATTTGAGTTGGATGATTGTTTTTGTCTCAAGGCAACCAGAGGAACTTGCATACAGAGACAGATATACTG
GGAGAAATGACTTTGAAAACCTGGCTCTAAGTGAGGATCACTAAGGGATGGGGCAGTCTCTGCCCCAACATAAAGAGAAC
TCTGGGGAGCCTGAGCCACAAAAATGTTCTTTATTTTATGTAAACCCTCAAGGGTTATAGACTGCCATGCTAGACAAGC
TTGTCCATGTAATATTCCCATGTTTTTACCCTGCCCCTGCCTTGATTAGACTCCTAGCACCTGGCTAGTTTCTAACATGT
TTTGTGCAGCACAGTTTTTAATAAATGCTTGTTACATTCA

Staphylococcal and Streptococcal Superantigens Trigger B7/CD28 Costimulatory
Receptor Engagement to Hyperinduce Inflammatory Cytokines
Front Immunol 10, 942 (2019)

AGAAGTTATTTGGAACCAAGCAAGAGCACTGTCCCTGGCTGTGGTGTGTTTCTCTAGTCAGTTCCCCTTTCTGTATTG
AGTTCTACCGTCAGTCTGGCATTATTTCTCTCTCTACAAGGAGCCTTAGGAGGTACGGGGAGCTCGCAAATACTCCTTT
TGGTTTATTTCTTACCACCTTGCTTCTGTGTTCCCTGGGAATGCTGCTGTGCTTATGCATCTGGTCTCTTTTTGGAGCTAC
AGTGGACAGGCATTTGTGACAGCACTATGGGACTGAGTAACATTCTCTTTGTGATGGCCTTCTGCTCTCTGGTGTGCT
CCTCTGAAGATTCAAGCTTATTTCAATGAGACTGCAGACCTGCCATGCCAATTTGCAAACCTCTCAAAACCAAGCCTGAG
TGAGCTAGTAGTATTTTGGCAGGACCAGGAAAACCTGGTTCTGAATGAGGTATACTTAGGCAAAGAGAAATTTGACAGTG
TTCATTCCAAGTATATGGGCCGCACAAGTTTTGATTGCGACAGTTGGACCCTGAGACTTCACAATCTTCAGATCAAGGAC
AAGGGCTTGTATCAATGTATCATCCATCACAAAAAGCCACAGGAATGATTGCGATCCACCAGATGAATTCTGAACTGTC
AGTGCTTGCTAACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAAAATGTGTACATAAATTTGACCTGCT
CATCTATACACGGTTACCCAGAACCTAAGAAGATGAGTGTTTTGCTAAGAACCAAGAATTCAACTATCGAGTATGATGGT
GTTATGCAGAAATCTCAAGATAATGTACAGAACTGTACGACGTTTCCATCAGCTTGTCTGTTTCATTCCCTGATGTTAC
GAGCAATATGACCATCTTCTGTATTCTGGAACCTGACAAGACGCGGCTTTTATCTTCACCTTTCTCTATAGAGCTTGAGG
ACCCTCAGCCTCCCCAGACCACATTCTTGGATTACAGCTGTACTTCCAACAGTTATTATATGTGTGATGGTTTTCTGT
CTAATTCTATGAAAATGGAAGAAGAAGAAGCGGCCTCGCAACTCTTATAAATGTGGAACCAACACAATGGAGAGGGAAGA
GAGTGAACAGACCAAGAAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAGCCCAGCGTGTTTTTAAAAGTTCTGA
AGACATCTTCATGCGACAAAAGTGATACATGTTTTTAATTAAGAGTAAAGCCCATACAAGTATTCATTTTTTCTACCCT
TTCCTTTGTAAGTTCCTGGGCAACCTTTTTGATTCTTCCAGAAGGCAAAAAGACATTACCATGAGTAATAAGGGGGCTC
CAGGACTCCCTCTAAGTGGAATAGCCTCCCTGTAACCTCAGCTCTGCTCCGTATGCCAAGAGGAGACTTTAATTCTCTTA
CTGCTTCTTTTCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCATGACCTGGAAATAAAATTTAGGACC
AATACCTCCTCCAGATCAGATTCTTCTCTTAATTTCATAGATTGTGTTTTTTTTTAAATAGACCTCTCAATTTCTGGAA
AACTGCCTTTTATCTGCCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGTACCTGTGACTAAACAACCTACCTCC
TCAGTCTGGGTGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAAACATAGAGATCTATGTACTGTAATAGT
GTGATTACTATGCTCTAGAGAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCTGTCAGGGTCAGTAAGGAAAACGGT
GGCCTAGGGTACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAGAGGCAGAGATAGAACCTGGAGCCA
CTTCTATCTGGGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCAACAAGCCATAGTGGAGAGAACTGAATAAACAGGA
AAATGCCAGAGCTTGTGAACCCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCCTGGGGAAGCTGTGAAAGAACCAAA
AGAGATCACAATACTCAAAAGAGAGAGAGAGAGAAAAAAGAGAGATCTTGATCCACAGAAATACATGAAATGTCTGGTCT
GTCCACCCCATCAACAAGTCTTGAACAAGCAACAGATGGATAGTCTGTCCAAATGGACATAAGACAGACAGCAGTTTCC
CTGGTGGTCAGGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCTGGAAGCAGAGCTGGGGAGGGAGAG
CCATCACCTTGATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGCTGAGAGAGGAAGAGCTGCAACGGA

ATTAGGAAGACCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCCTACGGGAACGTGGGCTGGCCCAGCAT
AGGGCTAGCAAATTTGAGTTGGATGATTGTTTTTGTCTCAAGGCAACCAGAGGAACTTGCATACAGAGACAGATATACTG
GGAGAAATGACTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAGTCTCTGCCCCAACATAAAGAGAAC
TCTGGGGAGCCTGAGCCACAAAAATGTTCCCTTTATTTTATGTAAACCCTCAAGGGTTATAGACTGCCATGCTAGACAAGC
TTGTCCATGTAATATTCCCATGTTTTTACCCTGCCCTGCCTTGATTAGACTCCTAGCACCTGGCTAGTTTCTAACATGT
TTTGTGCAGCACAGTTTTTAATAAATGCTTGTTACATTCA

Localization in situ of the co-stimulatory molecules B7.1, B7.2, CD40 and their
ligands in normal human lymphoid tissue

Eur J Immunol 25 (11), 3023-3029 (1995)

AGAAGTTATTTGGAACCAAGCAAGAGCACTGTCCCTGGCTGTGGTGTGTTTCTCTAGTCAGTTCCCCTTTCTGTATTG
AGTTCTACCGTCAGTCTGGCATTATTTCTCTCTCTACAAGGAGCCTTAGGAGGTACGGGGAGCTCGCAAATACTCCTTT
TGGTTTATTTCTTACCACCTTGCTTCTGTGTTCCCTGGGAATGCTGCTGTGCTTATGCATCTGGTCTCTTTTTGGAGCTAC
AGTGGACAGGCATTTGTGACAGCACTATGGGACTGAGTAACATTCTCTTTGTGATGGCCTTCCTGCTCTCTGGTGTGCT
CCTCTGAAGATTCAAGCTTATTTCAATGAGACTGCAGACCTGCCATGCCAATTTGCAAACCTCTCAAAACCAAGCCTGAG
TGAGCTAGTAGTATTTTGGCAGGACCAGGAAAACCTGGTTCTGAATGAGGTATACTTAGGCAAAGAGAAATTTGACAGTG
TTCATTCCAAGTATATGGGCCGACAAAGTTTTGATTGCGACAGTTGGACCCTGAGACTTCACAATCTTCAGATCAAGGAC
AAGGGCTTGTATCAATGTATCATCCATCACAAAAAGCCACAGGAATGATTGCGATCCACCAGATGAATTCTGAACTGTC
AGTGCTTGCTAACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAAAATGTGTACATAAATTTGACCTGCT
CATCTATACACGGTTACCCAGAACCTAAGAAGATGAGTGTTTTGCTAAGAACCAAGAATTCAACTATCGAGTATGATGGT
GTTATGCAGAAATCTCAAGATAATGTACAGAACTGTACGACGTTTTCCATCAGCTTGTCTGTTTCATTCCCTGATGTTAC
GAGCAATATGACCATCTTCTGTATTCTGGAACCTGACAAGACGCGGCTTTTATCTTCACCTTTCTCTATAGAGCTTGAGG
ACCCTCAGCTCCCCAGACCACATTCCCTGGATTACAGCTGTACTTCCAACAGTTATTATATGTGTGATGGTTTTCTGT
CTAATTCTATGAAATGGAAGAAGAAGAAGCGGCCTCGCAACTCTTATAAATGTGGAACCAACACAATGGAGAGGGAAGA
GAGTGAACAGACCAAGAAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAGCCCAGCGTGTTTTTAAAGTTCTGA
AGACATCTTCATGCGACAAAAGTGATACATGTTTTTAATTAAGAGTAAAGCCCATACAAGTATTCATTTTTTCTACCCT
TTCCTTTGTAAGTTCCCTGGGCAACCTTTTTGATTCTTCCAGAAGGCAAAAAGACATTACCATGAGTAATAAGGGGGCTC
CAGGACTCCCTCTAAGTGGAATAGCCTCCCTGTAACCTCAGCTCTGCTCCGTATGCCAAGAGGAGACTTTAATTCTCTTA
CTGCTTCTTTTCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCATGACCTGGAAATAAAATTTAGGACC
AATACCTCCTCCAGATCAGATTCTTCTCTTAATTTTCATAGATTGTGTTTTTTTTTAAATAGACCTCTCAATTTCTGGAA
AACTGCCTTTTATCTGCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGTACCTGTGACTAAACAACCTACCTCC
TCAGTCTGGGTGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAAACATAGAGATCTATGTACTGTAATAGT
GTGATTACTATGCTCTAGAGAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCTGTGAGGGTCAGTAAGGAAAACGGT
GGCCTAGGGTACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAGAGGCAGAGATAGAACCTGGAGCCA
CTTCTATCTGGGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCCAACAAGCCATAGTGAGAGAACTGAATAAACAGGA
AAATGCCAGAGCTTGTGAACCCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCCTGGGGAAGCTGTGAAAGAACCAAA
AGAGATCACAATACTCAAAAAGAGAGAGAGAGAGAAAAAAGAGAGATCTTGATCCACAGAAATACATGAAATGTCTGGTCT
GTCCACCCCATCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATGGACATAAGACAGACAGCAGTTTCC
CTGGTGGTCAGGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCTGGAAGCAGAGCTGGGGAGGGAGAG
CCATCACCTTGATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGCTGAGAGAGGAAGAGCTGCAACGGA
ATTAGGAAGACCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCCTACGGGAACGTGGGCTGGCCCAGCAT
AGGGCTAGCAAATTTGAGTTGGATGATTGTTTTTGTCTCAAGGCAACCAGAGGAACTTGCATACAGAGACAGATATACTG
GGAGAAATGACTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAGTCTCTGCCCCAACATAAAGAGAAC
TCTGGGGAGCCTGAGCCACAAAAATGTTCCCTTTATTTTATGTAAACCCTCAAGGGTTATAGACTGCCATGCTAGACAAGC
TTGTCCATGTAATATTCCCATGTTTTTACCCTGCCCTGCCTTGATTAGACTCCTAGCACCTGGCTAGTTTCTAACATGT
TTTGTGCAGCACAGTTTTTAATAAATGCTTGTTACATTCA

CD86 (B70/B7-2) on endothelial cells co-stimulates allogeneic CD4+ T cells

Int Immunol 7 (8), 1331-1337 (1995)

AGAAGTTATTTGGAACCAAGCAAGAGCACTGTCCCTGGCTGTGGTGTGTTTCTCTAGTCAGTTCCCCTTTCTGTATTG
AGTTCTACCGTCAGTCCTGGCATTATTTCTCTCTCTACAAGGAGCCTTAGGAGGTACGGGGAGCTCGCAAATACTCCTTT
TGGTTTATTTCTTACCACCTTGCTTCTGTGTTCCCTGGGAATGCTGCTGTGCTTATGCATCTGGTCTCTTTTTGGAGCTAC
AGTGGACAGGCATTTGTGACAGCACTATGGGACTGAGTAACATTCTCTTTGTGATGGCCTTCCTGCTCTCTGGTGTGCT
CCTCTGAAGATTCAAGCTTATTTCAATGAGACTGCAGACCTGCCATGCCAATTTGCAAACCTCTCAAAACCAAAGCCTGAG
TGAGCTAGTAGTATTTTGGCAGGACCAGGAAAACCTGGTTCTGAATGAGGTATACTTAGGCAAAGAGAAAATTTGACAGTG
TTCATTCCAAGTATATGGGCCGACAAAGTTTTGATTTCGACAGTTGGACCCTGAGACTTCACAATCTTCAGATCAAGGAC
AAGGGCTTGTATCAATGTATCATCCATCACAAAAAGCCACAGGAATGATTTCGCATCCACCAGATGAATTCTGAACTGTC
AGTGCTTGCTAACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAAATGTGTACATAAATTTGACCTGCT
CATCTATACACGGTTACCCAGAACCTAAGAAGATGAGTGTTTTGCTAAGAACCAGAATTCAACTATCGAGTATGATGGT
GTTATGCAGAAATCTCAAGATAATGTACAGAACTGTACGACGTTTCCATCAGCTTGTCTGTTTCATTCCCTGATGTTAC
GAGCAATATGACCATCTTCTGTATTCTGGAACCTGACAAGACGCGGCTTTTATCTTCACCTTTCTCTATAGAGCTTGAGG
ACCCTCAGCCTCCCCAGACCACATTCCCTGGATTACAGCTGTACTTCCAACAGTTATTATATGTGTGATGGTTTTCTGT
CTAATTTCTATGAAATGGAAGAAGAAGAAGCGGCTCGCAACTCTTATAAATGTGGAACCAACACAATGGAGAGGGAAGA
GAGTGAACAGACCAAGAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAGCCCAGCGTGTTTTTAAAGTTCTGA
AGACATCTTCATGCGACAAAAGTGATACATGTTTTTAATTAAGAGTAAAGCCCATAACAAGTATTCATTTTTTCTACCCT
TTCCTTTGTAAGTTCTGGGCAACCTTTTTGATTCTTCCAGAAGGCAAAAAGACATTACCATGAGTAATAAGGGGGCTC
CAGGACTCCCTCTAAGTGGAATAGCCTCCCTGTAACCTCAGCTCTGCTCCGTATGCCAAGAGGAGACTTTAATTTCTCTTA
CTGCTTCTTTTCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCATGACCTGGAATAAAATTTAGGACC
AATACCTCCTCCAGATCAGATTCTTCTCTTAATTTTCATAGATTGTGTTTTTTTTTAAATAGACCTCTCAATTTCTGGAA
AACTGCCTTTTATCTGCCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGTACCTGTGACTAAACAACCTACCTCC
TCAGTCTGGGTGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAAACATAGAGATCTATGTACTGTAATAGT
GTGATTACTATGCTCTAGAGAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCTGTCAGGGTCAGTAAGGAAAACGGT
GGCCTAGGGTACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAGAGGCAGAGATAGAACCTGGAGCCA
CTTCTATCTGGGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCCAACAAGCCATAGTGGAGAGAACTGAATAAACAGGA
AAATGCCAGAGCTTGTGAACCCCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCCTGGGGAAGCTGTGAAAGAACCAAA
AGAGATCACAATACTCAAAAGAGAGAGAGAGAGAAAAAAGAGAGATCTTGATCCACAGAAATACATGAAATGTCTGGTCT
GTCCACCCCATCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATGGACATAAGACAGACAGCAGTTTCC
CTGGTGGTCAGGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCTGGAAGCAGAGCTGGGGAGGGAGAG
CCATCACCTTGATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGCTGAGAGAGGAAGAGCTGCAACGGA
ATTAGGAAGACCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCCTACGGGAACGTGGGCTGGCCCAGCAT
AGGGCTAGCAAATTTGAGTTGGATGATTGTTTTTGTCTCAAGGCAACCAGAGGAACTTGCATACAGAGACAGATATACTG
GGAGAAATGACTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAGTCTCTGCCCCAACATAAAGAGAAC
TCTGGGGAGCTGAGCCACAAAAATGTTCCCTTATTTTATGTAAACCCTCAAGGGTTATAGACTGCCATGCTAGACAAGC
TTGTCCATGTAATATTTCCATGTTTTTACCCTGCCCCTGCCTTGATTAGACTCCTAGCACCTGGCTAGTTTCTAACATGT
TTTGTGCAGCACAGTTTTTAATAAATGCTTGTTACATTCA

CD80 (B7) and CD86 (B70) provide similar costimulatory signals for T cell proliferation, cytokine production, and generation of CTL

J Immunol 154 (1), 97-105 (1995)

AGAAGTTATTTGGAACCAAGCAAGAGCACTGTCCCTGGCTGTGGTGTGTTTCTCTAGTCAGTTCCCCTTTCTGTATTG
AGTTCTACCGTCAGTCCTGGCATTATTTCTCTCTCTACAAGGAGCCTTAGGAGGTACGGGGAGCTCGCAAATACTCCTTT
TGGTTTATTTCTTACCACCTTGCTTCTGTGTTCCCTGGGAATGCTGCTGTGCTTATGCATCTGGTCTCTTTTTGGAGCTAC
AGTGGACAGGCATTTGTGACAGCACTATGGGACTGAGTAACATTCTCTTTGTGATGGCCTTCCTGCTCTCTGGTGTGCT
CCTCTGAAGATTCAAGCTTATTTCAATGAGACTGCAGACCTGCCATGCCAATTTGCAAACCTCTCAAAACCAAAGCCTGAG
TGAGCTAGTAGTATTTTGGCAGGACCAGGAAAACCTGGTTCTGAATGAGGTATACTTAGGCAAAGAGAAAATTTGACAGTG
TTCATTCCAAGTATATGGGCCGACAAAGTTTTGATTTCGACAGTTGGACCCTGAGACTTCACAATCTTCAGATCAAGGAC

AAGGGCTTGTATCAATGTATCATCCATCACAAAAAGCCACAGGAATGATTTCGCATCCACCAGATGAATTCTGAACTGTC
 AGTGCTTGCTAACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAAAATGTGTACATAAAATTTGACCTGCT
 CATCTATACACGGTTACCCAGAACCTAAGAAGATGAGTGTTTTGCTAAGAACCAAGAATTCAACTATCGAGTATGATGGT
 GTTATGCAGAAATCTCAAGATAATGTACAGAACTGTACGACGTTTCCATCAGCTTGTCTGTTTCATTCCCTGATGTTAC
 GAGCAATATGACCATCTTCTGTATTCTGGAACCTGACAAGACGCGGCTTTTATCTTCACCTTTCTCTATAGAGCTTGAGG
 ACCCTCAGCTCCCCAGACCACATTTCCTTGATTACAGCTGTACTTCCAACAGTTATTATATGTGTGATGGTTTTCTGT
 CTAATTTCTATGAAATGGAAGAAGAAGAAGCGGCCTCGCAACTCTTATAAATGTGGAACCAACACAATGGAGAGGGAAGA
 GAGTGAACAGACCAAGAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAGCCCAGCGTGTTTTTAAAAGTTCGA
 AGACATCTTCATGCGACAAAAGTGATACATGTTTTTAATTAAGAGTAAAGCCCATAACAAGTATTCATTTTTTCTACCCT
 TTCCTTTGTAAGTTCTTGCGCAACCTTTTTGATTTCTTCCAGAAGGCAAAAAGACATTACCATGAGTAATAAGGGGGCTC
 CAGGACTCCCTCTAAGTGGAATAGCCTCCCTGTAACCTCAGCTCTGCTCCGTATGCCAAGAGGAGACTTTAATTTCTCTA
 CTGCTTCTTTTCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCATGACCTGGAATAAAATTTAGGACC
 AATACCTCCTCCAGATCAGATTCTTCTCTTAATTTTCATAGATTGTGTTTTTTTTTAAATAGACCTCTCAATTTCTGGAA
 AACTGCCTTTTATCTGCCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGTACCTGTGACTAAACAACCTACCTCC
 TCAGTCTGGGTGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAAACATAGAGATCTATGTACTGTAATAGT
 GTGATTACTATGCTCTAGAGAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCTGTCAGGGTCAGTAAGGAAAACGGT
 GGCCTAGGGTACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAGAGGCAGAGATAGAACCTGGAGCCA
 CTTCTATCTGGGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCAACAAGCCATAGTGGAGAGAACTGAATAAACAGGA
 AAATGCCAGAGCTTGTGAACCTGTTTTCTTGAAGAACTGACTAGTGAGATGGCCTGGGGAAGCTGTGAAAGAACCAAA
 AGAGATCACAATACTCAAAAGAGAGAGAGAGAGAAAAAAGAGAGATCTTGATCCACAGAAATACATGAAATGTCTGGTCT
 GTCCACCCCATCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATGGACATAAGACAGACAGCAGTTTCC
 CTGGTGGTCAGGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCTGGAAGCAGAGCTGGGGAGGGAGAG
 CCATCACCTTGATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGCTGAGAGAGGAAGAGCTGCAACGGA
 ATTAGGAAGACCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCCTACGGGAACGTGGGCTGGCCCAGCAT
 AGGGCTAGCAAATTTGAGTTGGATGATTGTTTTTGTCTCAAGGCAACCAGAGGAACTTGATACAGAGACAGATATACTG
 GGAGAAATGACTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAGTCTCTGCCCAAACATAAAGAGAAC
 TCTGGGGAGCTGAGCCACAAAATGTTCCTTTATTTTATGTAAACCCTCAAGGGTTATAGACTGCCATGCTAGACAAGC
 TTGTCCATGTAATATTTCCATGTTTTTACCCTGCCCCTGCCTTGATTAGACTCCTAGCACCTGGCTAGTTTCTAACATGT
 TTTGTGCAGCACAGTTTTTAATAAATGCTTGTACATTCA

The B7-2 (B70) costimulatory molecule expressed by monocytes and activated B
 lymphocytes is the CD86 differentiation antigen
 Blood 84 (5), 1402-1407 (1994)

AGAAGTTATTTGGAACCAAGCAAGAGCACTGTCCCTGGCTGTGGTGTGTTTCTCTAGTCAGTTCCCCTTTCTGTATTTG
 AGTTCTACCGTCAGTCTGGCATTATTTCTCTCTCTACAAGGAGCCTTAGGAGGTACGGGGAGCTCGAAATACTCCTTT
 TGGTTTTATTTCTTACCACCTTGCTTCTGTGTTCCCTTGGGAATGCTGCTGTGCTTATGCATCTGGTCTCTTTTTGGAGCTAC
 AGTGGACAGGCATTTGTGACAGCACTATGGGACTGAGTAACATTCTCTTTGTGATGGCCTTCTGCTCTCTGGTGTGCT
 CCTCTGAAGATTCAAGCTTATTTCAATGAGACTGCAGACCTGCCATGCCAATTTGCAAACCTCTCAAAACCAAGCCTGAG
 TGAGCTAGTAGTATTTTGGCAGGACCAGGAAAACTTGGTTCTGAATGAGGTATACTTAGGCAAAGAGAAATTTGACAGTG
 TTCATTCCAAGTATATGGGCCGCACAAGTTTTGATTGCGACAGTTGGACCCTGAGACTTCACAATCTTCAGATCAAGGAC
 AAGGGCTTGTATCAATGTATCATCCATCACAAAAAGCCACAGGAATGATTTCGCATCCACCAGATGAATTCTGAACTGTC
 AGTGCTTGCTAACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAAAATGTGTACATAAAATTTGACCTGCT
 CATCTATACACGGTTACCCAGAACCTAAGAAGATGAGTGTTTTGCTAAGAACCAAGAATTCAACTATCGAGTATGATGGT
 GTTATGCAGAAATCTCAAGATAATGTACAGAACTGTACGACGTTTCCATCAGCTTGTCTGTTTCATTCCCTGATGTTAC
 GAGCAATATGACCATCTTCTGTATTCTGGAACCTGACAAGACGCGGCTTTTATCTTCACCTTTCTCTATAGAGCTTGAGG
 ACCCTCAGCTCCCCAGACCACATTTCCTTGATTACAGCTGTACTTCCAACAGTTATTATATGTGTGATGGTTTTCTGT
 CTAATTTCTATGAAATGGAAGAAGAAGAAGCGGCCTCGCAACTCTTATAAATGTGGAACCAACACAATGGAGAGGGAAGA
 GAGTGAACAGACCAAGAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAGCCCAGCGTGTTTTTAAAAGTTCGA

AGACATCTTCATGCGACAAAAGTGATACATGTTTTTAATTAAAGAGTAAAGCCCATACAAGTATTCATTTTTCTACCCCT
 TTCCTTTGTAAGTTCCTGGGCAACCTTTTTGATTCTTCCAGAAGGCAAAAAGACATTACCATGAGTAATAAGGGGGCTC
 CAGGACTCCCTCTAAGTGGAATAGCCTCCCTGTAACCTCAGCTCTGCTCCGTATGCCAAGAGGAGACTTTAATTCTCTTA
 CTGCTTCTTTTCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCATGACCTGGAAATAAAATTTAGGACC
 AATACCTCCTCCAGATCAGATTCTTCTCTTAATTTTCATAGATTGTGTTTTTTTTTAAATAGACCTCTCAATTTCTGGAA
 AACTGCCTTTTATCTGCCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGTACCTGTGACTAAACAACCTACCTCC
 TCAGTCTGGGTGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAAACATAGAGATCTATGTACTGTAATAGT
 GTGATTACTATGCTCTAGAGAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCTGTCAGGGTCAGTAAGGAAAACGGT
 GGCCTAGGGTACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAGAGGCAGAGATAGAACCTGGAGCCA
 CTTCTATCTGGGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCCAACAAGCCATAGTGGAGAGAACTGAATAAACAGGA
 AAATGCCAGAGCTTGTGAACCTGTTTTCTTGAAGAACTGACTAGTGAGATGGCCTGGGGAAGCTGTGAAAGAACCAAAA
 AGAGATCACAATACTCAAAAGAGAGAGAGAGAGAAAAAAGAGAGATCTTGATCCACAGAAATACATGAAATGTCTGGTCT
 GTCCACCCCATCAACAAGTCTTGAACAAGCAACAGATGGATAGTCTGTCCAAATGGACATAAGACAGACAGCAGTTTCC
 CTGGTGGTCAGGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCTGGAAGCAGAGCTGGGGAGGGAGAG
 CCATCACCTTGATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGCTGAGAGAGGAAGAGCTGCAACGGA
 ATTAGGAAGACCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCCTACGGGAACGTGGGCTGGCCCAGCAT
 AGGGCTAGCAAATTTGAGTTGGATGATTGTTTTTGTCTCAAGGCAACCAGAGGAACTTGATACAGAGACAGATATACTG
 GGAGAAATGACTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAGTCTCTGCCCAAACATAAAGAGAAC
 TCTGGGGAGCCTGAGCCACAAAAATGTTCCTTTATTTTATGTAAACCCTCAAGGGTTATAGACTGCCATGCTAGACAAGC
 TTGTCCATGTAATATTCCCATGTTTTTACCCTGCCCCTGCCTTGATTAGACTCCTAGCACCTGGCTAGTTTCTAACATGT
 TTTGTGCAGCACAGTTTTTAATAAATGCTTGTACATTCA

Molecular cloning and expression of early T cell costimulatory molecule-1 and
 its characterization as B7-2 molecule

J Immunol 152 (10), 4929-4936 (1994)

AGAAGTTATTTGGAACCAAGCAAGAGCACTGTCCCTGGCTGTGGTGTGTTTCTCTAGTCAGTTCCTTTCTGTATTG
 AGTTCTACCGTCAGTCTGCGCATTATTTCTCTCTCTACAAGGAGCCTTAGGAGGTACGGGGAGCTCGCAAATACTCCTTT
 TGGTTTATTTCTTACCACCTTGCTTCTGTGTTCCCTTGGGAATGCTGCTGTGCTTATGCATCTGGTCTCTTTTTGGAGCTAC
 AGTGAGACAGGCATTTGTGACAGCACTATGGGACTGAGTAACATTCTCTTTGTGATGGCCTTCTGCTCTCTGGTGTGCT
 CCTCTGAAGATTCAAGCTTATTTCAATGAGACTGCAGACCTGCCATGCCAATTTGCAAACCTCTCAAAACCAAGCCTGAG
 TGAGCTAGTAGTATTTTGGCAGGACCAGGAAAACTTGGTTCTGAATGAGGTATACTTAGGCAAAGAGAAATTTGACAGTG
 TTCATTCCAAGTATATGGGCCGACAAAGTTTTGATTGCGACAGTTGGACCCTGAGACTTCACAATCTTCAGATCAAGGAC
 AAGGGCTTGTATCAATGTATCATCCATCACAAAAAGCCACAGGAATGATTGCGATCCACCAGATGAATTCTGAACTGTC
 AGTGCTTGCTAACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAAAATGTGTACATAAATTTGACCTGCT
 CATCTATACACGGTTACCCAGAACCTAAGAAGATGAGTGTTTTGCTAAGAACCAAGAATTCAACTATCGAGTATGATGGT
 GTTATGCAGAAATCTCAAGATAATGTACAGAACTGTACGACGTTTCCATCAGCTTGTCTGTTTCATTCCCTGATGTTAC
 GAGCAATATGACCATCTTCTGTATTCTGGAACCTGACAAGACGCGGCTTTTATCTTCACCTTTCTCTATAGAGCTTGAGG
 ACCCTCAGCCTCCCCAGACCACATTCTTGGATTACAGCTGTACTTCCAACAGTTATTATATGTGTGATGGTTTTCTGT
 CTAATTTCTATGGAATGGAAGAAGAAGAAGCGGCCTCGCAACTCTTATAAATGTGGAACCAACACAATGGAGAGGGAAGA
 GAGTGAACAGACCAAGAAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAGCCCAGCGTGTTTTTAAAGTTTCGA
 AGACATCTTCATGCGACAAAAGTGATACATGTTTTTAATTAAAGAGTAAAGCCCATACAAGTATTCATTTTTTTCTACCCCT
 TTCCTTTGTAAGTTCCTGGGCAACCTTTTTGATTCTTCCAGAAGGCAAAAAGACATTACCATGAGTAATAAGGGGGCTC
 CAGGACTCCCTCTAAGTGGAATAGCCTCCCTGTAACCTCAGCTCTGCTCCGTATGCCAAGAGGAGACTTTAATTCTCTTA
 CTGCTTCTTTTCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCATGACCTGGAAATAAAATTTAGGACC
 AATACCTCCTCCAGATCAGATTCTTCTCTTAATTTTCATAGATTGTGTTTTTTTTTAAATAGACCTCTCAATTTCTGGAA
 AACTGCCTTTTATCTGCCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGTACCTGTGACTAAACAACCTACCTCC
 TCAGTCTGGGTGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAAACATAGAGATCTATGTACTGTAATAGT
 GTGATTACTATGCTCTAGAGAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCTGTCAGGGTCAGTAAGGAAAACGGT

GGCCTAGGGTACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAGAGGCAGAGATAGAACCTGGAGCCA
 CTTCTATCTGGGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCCAACAAGCCATAGTGAGAGAACTGAATAAACAGGA
 AAATGCCAGAGCTTGTGAACCCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCCTGGGGAAGCTGTGAAAGAACCAAA
 AGAGATCACAATACTCAAAAGAGAGAGAGAGAGAAAAAGAGAGATCTTGATCCACAGAAATACATGAAATGTCTGGTCT
 GTCCACCCCATCAACAAGTCTTGAACAAGCAACAGATGGATAGTCTGTCCAAATGGACATAAGACAGACAGCAGTTTCC
 CTGGTGGTCAGGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCTGGAAGCAGAGCTGGGGAGGGAGAG
 CCATCACCTTGATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGCTGAGAGAGGAAGAGCTGCAACGGA
 ATTAGGAAGACCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCCTACGGGAACGTGGGCTGGCCCAGCAT
 AGGGCTAGCAAATTTGAGTTGGATGATTGTTTTTGTCTAAGGCAACCAGAGGAAACTTGCATACAGAGACAGATATACTG
 GGAGAAATGACTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAGTCTCTGCCCCAACATAAAGAGAAC
 TCTGGGGAGCCTGAGCCACAAAAATGTTCTTTATTTTATGTAAACCCTCAAGGGTTATAGACTGCCATGCTAGACAAGC
 TTGTCCATGTAATATTCCCATGTTTTTACCCTGCCCCTGCCTTGATTAGACTCCTAGCACCTGGCTAGTTTCTAACATGT
 TTTGTGCAGCACAGTTTTTAATAAATGCTTGTACATTCA

A reference map of the human binary protein interactome
 Nature 580 (7803), 402-408 (2020)

CTGCGCGCTCGGGCTGGCTCGGCGGCTGCGGCGGGCGGGCAGGCGGGCAGGCCGGCAGGCGGGTGCGCGGAGGGCTGGTG
 CCCCCGAGCAGGTGGGCGGGGTGCGGTTGGCGGCGGCGGCTGGGCCGGGGCTGCCGGCTGCGCTCGGGCCGTGCGCGGC
 GGCCGTGCGGGCAGCCATGGACTTCAACATGAAGAAGCTGGCGTGGACGCGGCATCTTCTTACCCGGGCGGTGACG
 TTCACGGAGGAGAAATTTGGCCAGGCTGAGAAGACTGAGCTTGATGCCACTTTGAAAACCTTCTGGCCCGGCAGACAG
 CACCAAGAACTGGACAGAGAAGATCTTGAGGCAGACAGAGGTGCTGCTGCAGCCCAACCCCAAGTGGCCGAGTGGAGGAGT
 TCCTGTATGAGAAGCTGGACAGGAAGGTCCCTCAAGGGTCACCAACGGGGAGCTGCTGGCTCAGTACATGGCAGACGCG
 GCCAGTGAGCTGGGGCCGACCACCCCTATGGGAAGACACTGATCAAGGTGGCAGAAGCTGAAAAGCAACTGGGAGCCGC
 GGAGAGGGATTTTATCCACACGGCCTCCATCAGCTTCTCACACCCTTGCGCAACTTCTGGAGGGGGACTGGAAGACCA
 TCTCGAAGGAGAGGCGGCTCCTCCAAAACGGCGTCTGGACTTGATGCCTGCAAAGCGAGGCTGAAGAAGGCCAAGGCT
 GCAGAAGCCAAAGCCACGTGTGAGGGAGATACGGTGCCTGACTTTTACAGGAGACTAGACCTCGTAATTACATTCTCTCGGC
 CAGCGCTCCGCGCTCTGGAATGATGAAGTGACAAGGCCGAGCAGGAGCTCCGCGTGGCCAGACAGAGTTTGACCGGC
 AAGCAGAAGTGACCCGTCTCTTGCTGGAGGGAATCAGTAGCACTCACGTGAACCACCTGCGCTGCCTCCACGAGTTCGTC
 AAGTCTCAGACAACTACTACGCACAGTGCTACCGCCACATGCTGGACTTGCAGAAGCAGCTGGGCAGCTCCCAGGGTGC
 CATATTTCCCGGCACCTTCGTGGGCACCACAGAGCCCGCTCCCCACCCCTGAGCAGCACCTCACCCACCACTGCTGCGG
 CCACTATGCCTGTGGTGCCCTCTGTGGCCAGCCTGGCCCTCCGGGGGAGGCCTCGCTCTGCCTGGAAGAGGTGGCCCCC
 CCTGCCAGTGGGACCCGCAAAGCTCGGGTGCTCTATGACTACGAGGCAGCCGACAGCAGTGAGCTGGCCCTGCTGGCTGA
 TGAGCTCATCACTGTCTACAGCCTGCCTGGCATGGACCCTGACTGGCTCATTGGCGAGAGAGGCAACAAGAAGGGCAAGG
 TCCCTGTACCTACTTGGAAGTGTCTAGCTAGGAGGTGCCCCATCCCCCGCATTCTGGCCTAGGCAGGAGAGGATG
 GGCGCAGCCCTGCCACTTAACTTGTTTGTGGTGACACAGTTGTTTACAGAGTGGGGAGAATTACCCCACTTCTGTCCCTGC
 CCCTAGTCACCTAGCTGTGAGGGTGCTGAGGCTGAATGGCTCCACCCCTCCCCAGCCCTGCTTCTGACCTGTGGCTCT
 GGAGCCCCTGCCCTGCCTGCATCCCCGAGCACCCACCCCTCCAGGCTCCACTAAGGAGGGAGGGGCTGTCTGCAGCAGC
 TGCCTCAGCACCTAGGCCAGGGTGGGGCCCGGCAGATGGGCTCAGGAAGCCCCAGGTGCACTCAGCGAGAGCCCTGCC
 TTTCAGTTGCCAAAAGCTGCATCAGGGGAATGCGGCAAGGCACACAGGGCTCTGGCAGCCCCTGGGGACTGGGCGCTGCC
 CCTGGGAGGGGAGAGCCTGGCCAGGGCTGGTGTGGGCCCGGAGCAGCATCTTCCGGTGCTATCTCCCTCCACCCCT
 CACAGCTCAAGCCAAGTCCAGCGCCGAGTCTTCACTCTCCACACTCACTTTTTATCTGGTGTTTTTACTTCTGCCTG
 CGTTTGCTCTCTAGCCAATAAACCGTCCTTGTGTGCGAGTCACCTGGGCTCCTGTGAGGGCCTGGCCCTGAGGGTGGTAA
 AGGAAAAGGTAGACTCACCTCTGCCCCACTTCCACAGAGTGAGCAGGGGCCCTGTGGCTGCCCGGCCCCCAGCTCT
 CTAGTTGGGAAGAAGTGACGCCCTCCCTGTCTTCTGCGGGGCTGTGCCTCTCAGAGGGCAGTGCTGTTCTGGACATGA
 AGCCGCACAAGGAACGTTTTTATTCCTAAGAAAAAGTTTCTAAATTTGGATTGTGGAGCGGACTGTAGAATGCGTCTGAC
 AGTTTCAGTTCAAGCACAAGAAGTGGGTAGCGTCAGTGCTGTCTGCAGGTCGGGCGTTTACCCAGCATGTGCCCCGTG
 CCATGGGTTCTCATGCCGTCTCAGTGTCACATTTACAGATGAGATCAGCAAGACAGTCAGCTCCTCAAGGGACCACA
 GTTGGCAAGTGCCAAGCAGGGACTGAAGCCCAGGCAGCCTGATTCTAGAAACCCTAAGTGATGTCTGTGTTTTAGATGG

CCCCTAGCAGGACCTAGCATTCTGACTTCAGTCCTGAGAAGGCCAACAGCCAGTAGGCCCCACTGTTGGGGCTTCTGAAG
 AGGGGATCGGGGGATGACGGGGGCACGGGGCTATAAATAGGAAGGCACAGAGCTTCAAGAAAGGCTCACCCAGGGATGAG
 CTCAGCCCACTGGGCCAATGAAAGCAGGGTCAAGGACAGGACCAGCGCAGGCCAAGGAAGGAATATCTGACAGCGCCCA
 CCCAGCCAAACCTCAGCCCAAGGACAGGAATGAGGAGATGCTGGTGAAGTACCATCCATCAGTACCTGCCTTCCCCCG
 AGGCTGCAGCCCCACTCCCAGGCGCCTGGCCAGGGGAGTTTTCTAGGTTCTGAGAGCCACGTTGTATCCCTGGGCTTTG
 AAGTTAAACATCACACAGCTGTCTATAACAAGATTTTAATATCTGTATAAATAGACCACAGAATTACCAAACTGCAAA

Endophilin B2 facilitates endosome maturation in response to growth factor
 stimulation, autophagy induction, and influenza A virus infection

J Biol Chem 292 (24), 10097-10111 (2017)

CTGCGCGCTCGGGCTGGCTCGGCGGCTGCGCGGGCGGGCAGGCGGGCAGGCCGGCAGGCGGGTGC GCGGAGGGCTGGTG
 CCCC GCAGCAGGTGGGCGGGGTGCGGTTGGCGGCGGCGGCTGGGCCGGGGGCTGCCGGCTGCGCTCGGGCCGTGCGCGGC
 GGCCGTGCGGGCACGCCATGGACTTCAACATGAAGAAGCTGGCGTGGACGCGGGCATCTTCTTACCCGGGCGGTGCAG
 TTCAGGAGGAGAAATTTGGCCAGGCTGAGAAGACTGAGCTTGATGCCACTTTGAAAACCTTCTGGCCCGGCAGACAG
 CACCAAGAACTGGACAGAGAAGATCTTGAGGCAGACAGAGGTGCTGCTGCAGCCCAACCCAGTGCCCGAGTGAGGAGT
 TCCTGTATGAGAAGCTGGACAGGAAGGTCCCCCTCAAGGGTCACCAACGGGGAGCTGCTGGCTCAGTACATGGCAGACGCG
 GCCAGTGAGCTGGGGCCGACCACCCCTATGGGAAGACACTGATCAAGGTGGCAGAAGCTGAAAAGCAACTGGGAGCCGC
 GGAGAGGGATTTATCCACACGGCCTCCATCAGCTTCTCTCACACCCCTTGCGCAACTTCTTGAGGGGGACTGGAAGACCA
 TCTCGAAGGAGAGGCGGCTCCTCCAAAACCGCGTCTGGACTTGATGCCTGCAAAGCGAGGCTGAAGAAGGCCAAGGCT
 GCAGAAGCCAAAGCCACGTGTGAGGGAGATACGTTGCTGACTTTTACAGGAGACTAGACCTCGTAATTACATTCTCTCGGC
 CAGCGCCTCCGCGCTCTGGAATGATGAAGTGGACAAGGCCGAGCAGGAGCTCCGCGTGGCCCGACAGAGTTTGACCGGC
 AAGCAGAAGTGACCCGTCTCTTGCTGGAGGGAATCAGTAGCACTCACGTGAACCACTGCGCTGCCTCCACGAGTTCGTC
 AAGTCTCAGACAACCTACTACGCACAGTGCTACCGCCACATGCTGGACTTGCAGAAGCAGCTGGGCAGCTCCCAGGGTGC
 CATATTTCCCGGCACCTTCTGTGGGCACCACAGAGCCCGCTCCCCACCCCTGAGCAGCACCTACCCACCACTGCTGCGG
 CCACTATGCCTGTGGTGCCCTCTGTGGCCAGCCTGGCCCCCTCCGGGGGAGGCCTCGCTCTGCCTGGAAGAGGTGGCCCC
 CCTGCCAGTGGGACCCGCAAAGCTCGGGTGTCTATGACTACGAGGCAGCCGACAGCAGTGAGCTGGCCCTGCTGGCTGA
 TGAGCTCATCACTGTCTACAGCCTGCCTGGCATGGACCCCTGACTGGCTCATTGGCGAGAGAGGCAACAAGAAGGGCAAGG
 TCCCTGTACCTACTTGGAAGTGTCTAGCTAGGCAGGTGCCCCATCCCCCGCATTCTGGCCTAGGCAGGAGAGGATG
 GGCGCAGCCCTGCCACTTAACTTGTTTTGTTGGTGACACAGTTGTTTACAGAGTGGGAGAAATTCACCCCATTTCTGTCCCTGC
 CCCTAGTCACCTAGCTGTGAGGGTGCCTGAGGCTGAATGGCTCCACCCCTCCCCAGCCCTGCTTCTGACCTGTGGCTCT
 GGAGCCCTGCCCCTGCCTGCATCCCCGAGCACCCACCCCTCCAGGCTCCACTAAGGAGGGAGGGGCTGTCTGCAGCAGC
 TGCACCTCAGCACCTAGGCCAGGTGGGGCCGCGCAGATGGGCTCAGGAAGCCCCAGGTGCACTCAGCGAGAGCCCTGCC
 TTTTCAAGTTGCCAAAAGCTGCATCAGGGGAATGCGGCAAGGCACACAGGGCTCTGGCAGCCCTGGGGACTGGGCGCTGCC
 CCTGGGAGGGGAGAGCCTGGCCAGGGCTGGTGTGGGCCCGGAGCAGCATCTTCCGGTGCTATCCTCCCCTCCCACCCCT
 CACAGCTCAAGCCAAGTCCAGCGCGCAGTCTTACCTCTCCACACTCACTTTTATCTGGTGTTTTTACTTCTGCCTG
 CGTTTGCTCTCTAGCCAATAAACCGTCCTTGTGTGCGAGTCACCTGGGCTCCTGTGAGGGCCTGGCCCTGAGGGTGGTAA
 AGGGAAGGTAGACTCACCCCTCTGCCCCACTCTTCCACAGAGTGAGCAGGGGCCCTGTGGCTGCCCCGGCCCCAGCTCT
 CTAGTTGGGAAGAAGTGACGCCCTCCCTGTCTTCTGCGGGGCTGTGCCTCTCAGAGGGCAGTGCTGTTCTGGACATGA
 AGCCGCACAAGGAACGTTTTATTCTAAGAAAAAGTTTCTAAATTTGGATTGTGGAGCGGACTGTAGAATGCGTCTGAC
 AGTTCAGTTCAAGCACAAGAAGTGGGTAGCGTCACTGCTGTCTGCAGGTGCGGCGTTTACCCAGCATGTGCCCCCGTG
 CCATGGGTTCTCATGCCGTCTCAGTGTCCACATTTACAGATGAGATCAGCAAGACAGTCAGCTCCTCAAGGGACCACA
 GTTGGCAAGTGCCAAGCAGGGACTGAAGCCAGGCAGCCTGATTCTAGAAACCCTAAGTGATGTCTGTGTTTTAGATGG
 CCCCTAGCAGGACCTAGCATTCTGACTTCAGTCTGAGAAGGCCAACAGCCAGTAGGCCCACTGTTGGGGCTTCTGAAG
 AGGGGATCGGGGGATGACGGGGGCACGGGGCTATAAATAGGAAGGCACAGAGCTTCAAGAAAGGCTCACCCAGGGATGAG
 CTCAGCCCACTGGGCCAATGAAAGCAGGGTCAAGGACAGGACCAGCGCAGGCCAAGGAAGGAATATCTGACAGCGCCCA
 CCCAGCCAAACCTCAGCCCAAGGACAGGAATGAGGAGATGCTGGTGAAGTACCATCCATCAGTACCTGCCTTCCCCCG
 AGGCTGCAGCCCCACTCCCAGGCGCCTGGCCAGGGGAGTTTTCTAGGTTCTGAGAGCCACGTTGTATCCCTGGGCTTTG
 AAGTTAAACATCACACAGCTGTCTATAACAAGATTTTAATATCTGTATAAATAGACCACAGAATTACCAAACTGCAAA

Endophilin B2 promotes inner mitochondrial membrane degradation by forming heterodimers with Endophilin B1 during mitophagy

Sci Rep 6, 25153 (2016)

CTGCGCGCTCGGGCTGGCTCGGCGGGCTGCGGCGGGCGGGCAGGCGGGCAGGCCGGCAGGCGGGTGCGCGGAGGGCTGGTG
CCCCGCAGCAGGTGGGCGGGGTGCGGTTGGCGGCGGGCGGGCTGGGCCGGGGGCTGCCGGCTGCGCTCGGGCCGTGCGCGGC
GGCCGTGCGGGCACGCCATGGACTTCAACATGAAGAAGCTGGCGTCGGACGCGGGCATCTTCTTACCCGGGCGGTGCAG
TTCACGGAGGAGAAATTTGGCCAGGCTGAGAAGACTGAGCTTGATGCCCACCTTGAAAACTTCTGGCCCGGGCAGACAG
CACCAAGAACTGGACAGAGAAGATCTTGAGGCAGACAGAGGTGCTGCTGCAGCCCAACCCCAAGTGCCCGAGTGGAGGAGT
TCCTGTATGAGAAGCTGGACAGGAAGGTCCCCTCAAGGGTCAACAACGGGGAGCTGCTGGCTCAGTACATGGCAGACGCG
GCCAGTGAGCTGGGGCCGACCACCCCTATGGGAAGACACTGATCAAGGTGGCAGAAGCTGAAAAGCAACTGGGAGCCGC
GGAGAGGGATTTTATCCACACGGCCTCCATCAGTTCCTCACACCCTTGCGCAACTTCCTGGAGGGGGACTGGAAGACCA
TCTCGAAGGAGAGGCGGCTCCTCCAAAACGGCGTCTGGACTTGATGCCTGCAAAGCGAGGCTGAAGAAGGCCAAGGCT
GCAGAAGCCAAAGCCACGTGTGAGGGAGATACGGTGCCTGACTTTTACAGGAGACTAGACCTCGTAATTACATTCTCTCGGC
CAGCGCCTCCGCGCTCTGGAATGATGAAGTGACAAGGCCGAGCAGGAGCTCCGCGTGGCCAGACAGAGTTTGACCGGC
AAGCAGAAGTGACCCGTCTCTTGCTGGAGGGAATCAGTAGCACTCACGTGAACCACCTGCGCTGCCTCCACGAGTTCGTC
AAGTCTCAGACAACCTACTACGCACAGTGCTACCGCCACATGCTGGACTTGCAAGAAGCAGCTGGGCAGCTCCCAGGGTGC
CATATTTCCCGGCACCTTCGTGGGCACCACAGAGCCCGCTCCCCACCCCTGAGCAGCACCTCACCCACCACTGCTGCGG
CCACTATGCCTGTGGTGCCCTCTGTGGCCAGCCTGGCCCCCTCCGGGGGAGGCCCTCGCTCTGCCTGGAAGAGGTGGCCCC
CCTGCCAGTGGGACCCGCAAAGCTCGGGTGCTCTATGACTACGAGGCAGCCGACAGCAGTGAGCTGGCCCTGCTGGCTGA
TGAGCTCATCACTGTCTACAGCCTGCCTGGCATGGACCCTGACTGGCTCATTGGCGAGAGAGGCAACAAGAAGGGCAAGG
TCCCTGTCACCTACTTGGAAGTGTCTAGCTAGGCAGGTGCCCCCATCCCCCGCATTCTGGCCTAGGCAGGAGAGGATG
GGCGCAGCCCTGCCACTTAACTTGTTTGTGGTGACACAGTTGTTTACAGAGTGGGAGAAATTCACCCCACTTCTGTCCCTGC
CCCTAGTCACCTAGCTGTGAGGGTGCTGAGGCTGAATGGCTCCACCCCTCCCCAGCCCTGCTTCTGACCTGTGGCTCT
GGAGCCCTGCCCCTGCCTGCATCCCCGAGCACCCACCCCTCCAGGCTCCACTAAGGAGGGAGGGGCTGTCTGCAGCAGC
TGCACTCAGCACCTAGGCCAGGGTGGGGCCGCGCAGATGGGCTCAGGAAGCCCCAGGTGCACTCAGCGAGAGCCCTGCC
TTTCAGTTGCCAAAAGCTGCATCAGGGGAATGCGGCAAGGCACACAGGGCTCTGGCAGCCCTGGGGACTGGGCGTGCC
CCTGGGAGGGGAGAGCCTGGCCAGGGCTGGTGTGGGGCCGAGCAGCATCTTCCGGTGCTATCCTCCCCTCCCACCCCT
CACAGCTCAAGCCAAGTCCAGCGGCCGAGTCTTACCTCTCCACACTCACTTTTATCTGGTGTTTTTACTTCTGCCTG
CGTTTGCTCTCTAGCCAATAAACCGTCCTTGTGTGCGAGTCACCTGGGCTCCTGTGAGGGCCTGGCCCTGAGGGTGGTAA
AGGGAAAGGTAGACTCACCTCTGCCCCACTCTTCCACAGAGTGAGCAGGGGCCCTGTGGCTGCCCCGGCCCCCAGCTCT
CTAGTTGGGAAGAAGTGAGCCCTCCCTGTCTTCTGCGGGGCTGTGCCTCTCAGAGGGCAGTGCTGTTCTGGACATGA
AGCCGCACAAGGAACGTTTTTATTCCTAAGAAAAAGTTTCTAAATTTGGATTGTGGAGCGGACTGTAGAATGCGTCTGAC
AGTTCAAGTTCAAGCACAAGAAGTGGGTAGCGGTCACTGCTGTCTGCAGGTCGGGCGTTTACCCAGCATGTGCCCCGTG
CCATGGGTTCTCATGCCGTCTCAGTGTCACATTTACAGATGAGATCAGCAAGACAGTCAGCTCCTCAAGGGACCACA
GTTGGCAAGTGCCAAGCAGGACTGAAGCCAGGCAGCCTGATTCTAGAAACCCTAAGTGATGTCTGTGTTTTAGATGG
CCCCTAGCAGGACCTAGCATTCTGACTTCAGTCTGAGAAGGCCAACAGCCAGTAGGCCCACTGTTGGGGCTTCTGAAG
AGGGGATCGGGGATGACGGGGGCACGGGGCTATAAATAGGAAGGCACAGAGCTTCAAGAAAGGCTCACCCAGGGATGAG
CTCAGCCCACTGGGCCAATGAAAGCAGGTCAAGGACAGGACCAGCGCAGGCCAAGGAAGGAATATCTGACAGCGCCCA
CCCAGCCAAACCCCTCAGCCCAAGGACAGGAATGAGGAGATGCTGGTGAAGTCCATCCATCAGTACCTGCCTTCCCCCG
AGGCTGCAGCCCCACTCCCAGGCGCCTGGCCAGGGGAGTTTTCTAGGTTCTGAGAGCCACGTTGTCTATCCCTGGGCTTTG
AAGTTAAACATCACACAGCTGTCTATAACAAGATTTTAATATCTGTATAAATAGACCACAGAATTACCAAACTGCAAAA

An inter-species protein-protein interaction network across vast evolutionary distance

Mol Syst Biol 12 (4), 865 (2016)

CTGCGCGCTCGGGCTGGCTCGGCGGGCTGCGGCGGGCGGGCAGGCGGGCAGGCCGGCAGGCGGGTGCGCGGAGGGCTGGTG
CCCCGCAGCAGGTGGGCGGGGTGCGGTTGGCGGCGGGCGGGCTGGGCCGGGGGCTGCCGGCTGCGCTCGGGCCGTGCGCGGC

GGCCGTGCGGGCACGCCATGGACTTCAACATGAAGAAGCTGGCGTCGGACGCGGGCATCTTCTTACCCGGGCGGTGCAG
TTCACGGAGGAGAAAATTTGGCCAGGCTGAGAAGACTGAGCTTGATGCCACTTTGAAAACCTTCTGGCCCGGCAGACAG
CACCAAGAACTGGACAGAGAAGATCTTGAGGCAGACAGAGGTGCTGCTGCAGCCCAACCCAGTGCCCGAGTGAGGAGT
TCCTGTATGAGAAGCTGGACAGGAAGGTCCCTCAAGGGTCACCAACGGGGAGCTGCTGGCTCAGTACATGGCAGACGCG
GCCAGTGAGCTGGGGCCGACCACCCCTATGGGAAGACACTGATCAAGGTGGCAGAAGCTGAAAAGCAACTGGGAGCCGC
GGAGAGGGATTTTATCCACACGGCCTCCATCAGCTTCTCTCACACCCTTGCGCAACTTCTGGAGGGGGACTGGAAGACCA
TCTCGAAGGAGAGGCGGCTCCTCCAAAACCGGCTCTGGACTTGATGCCTGCAAAGCGAGGCTGAAGAAGGCCAAGGCT
GCAGAAGCCAAAGCCACGTGTGAGGGAGATACGGTGCCTGACTTTCAGGAGACTAGACCTCGTAATTACATTCTCTCGGC
CAGCGCCTCCGCGCTCTGGAATGATGAAGTGGACAAGGCCGAGCAGGAGCTCCGCGTGGCCAGACAGAGTTTGACCGGC
AAGCAGAAGTGACCCGTCTCTTGCTGGAGGGAATCAGTAGCACTCACGTGAACCACCTGCGCTGCCTCCACGAGTTCGTC
AAGTCTCAGACAACCTACTACGCACAGTGCTACCGCCACATGCTGGACTTGAGAAGCAGCTGGGCAGCTCCCAGGGTGC
CATATTTCCCGGCACCTTCGTGGGCACCACAGAGCCCGCTCCCCACCCCTGAGCAGCACCTACCCACCACTGCTGCGG
CCACTATGCCTGTGGTGCCCTCTGTGGCCAGCCTGGCCCCCTCCGGGGGAGGCCTCGCTCTGCCTGGAAGAGGTGGCCCC
CCTGCCAGTGGGACCCGCAAAGCTCGGGTGCTCTATGACTACGAGGCAGCCGACAGCAGTGAGCTGGCCCTGCTGGCTGA
TGAGCTCATCACTGTCTACAGCCTGCCTGGCATGGAACCTGACTGGCTCATTGGCGAGAGAGGCAACAAGAAGGGCAAGG
TCCCTGTCACCTACTTGGAAGTGTCTAGCTAGGCAGGTGCCCCCATCCCCCGCATTCTGGCCTAGGCAGGAGAGGATG
GGCGCAGCCCTGCCACTTAACTTGTTTGTGGTGACACAGTTGTTTCAAGTGGGGAGAATTCACCCCATTTCTGTCCCTGC
CCCTAGTCACCTAGCTGTGAGGGTGCTGAGGTGAATGGCTCCACCCCTCCCCAGCCCTGCTTCTGACCTGTGGCTCT
GGAGCCCTGCCCCTGCCTGCATCCCCGAGCACCCACCCCTCCAGGCTCCACTAAGGAGGGAGGGGCTGTCTGCAGCAGC
TGCACTCAGCACCTAGGCCAGGTGGGGCCGCGCAGATGGGCTCAGGAAGCCCCAGGTGCACTCAGCGAGAGCCCTGCC
TTTCAGTTGCCAAAAGCTGCATCAGGGGAATGCGGCAAGGCACACAGGGCTCTGGCAGCCCCCTGGGGACTGGGCGTGCC
CCTGGGAGGGGAGAGCCTGGCCAGGGCTGGTGTGGGGCCGAGCAGCATCTTCCGGTGCTATCCTCCCCTCCCACCCCT
CACAGCTCAAGCCAAGTCCAGCGGCCGAGTCTTACCTCTCCACACTCACTTTTATCTGGTGTTTTTACTTCTGCCTG
CGTTTGCTCTCTAGCCAATAAACCGTCCTTGTGTGCGAGTCACCTGGGCTCCTGTGAGGGCCTGGCCCTGAGGGTGGTAA
AGGGAAGGTAGACTCACCTCTGCCCCACTTTCACAGAGTGAGCAGGGGCCCTGTGGCTGCCCCGGCCCCAGCTCT
CTAGTTGGGAAGAAGTGCAGCCCTCCCTGTCTTCTGCGGGCCTGTGCCTCTCAGAGGGCAGTGCTGTTCTGGACATGA
AGCCGCACAAGGAACGTTTTTATTCCTAAGAAAAAGTTTCTAAATTTGGATTGTGGAGCGGACTGTAGAATGCGTCTGAC
AGTTTCAGTTCAAGCACAAGAAGTGGGTAGCGGTCACTGCTGTCTGCAGGTGCGGCGTTTACCCAGCATGTGCCCCGTG
CCATGGGTTCTCATGCCGTCTCAGTGTCCACATTTACAGATGAGATCAGCAAGACAGTCAGCTCCTCAAGGGACCACA
GTTGGCAAGTGCCAAGCAGGGACTGAAGCCAGGCAGCCTGATTCTAGAAACCTAAGTGATGTCTGTGTTTTAGATGG
CCCCTAGCAGGACCTAGCATTCTGACTTCAGTCTGAGAAGGCCAACAGCCAGTAGGCCCACTGTTGGGGCTTCTGAAG
AGGGGATCGGGGATGACGGGGGCACGGGGCTATAAATAGGAAGGCACAGAGCTTCAAGAAAGGCTCACCCAGGGATGAG
CTCAGCCCACTGGGCCAATGAAAGCAGGGTCAAGGACAGGACCAGCGCAGGCCAAGGAAGGGAATATCTGACAGCGCCCA
CCCAGCCAAACCTCAGCCCAAGGACAGGAATGAGGAGATGCTGGTGAAGTAGCCATCCATCAGTACCTGCCTTCCCCCG
AGGCTGCAGCCCCACTCCCAGGCGCCTGGCCAGGGGAGTTTCTAGGTTCTGAGAGCCACGTTGTCTATCCCTGGGCTTTG
AAGTTAAACATCACACAGCTGTCTATAACAAGATTTTAATATCTGTATAAATAGACCACAGAATTACCAAACTGCAAAA

Pooled-matrix protein interaction screens using Barcode Fusion Genetics

Mol Syst Biol 12 (4), 863 (2016)

CTGCGCGCTCGGGCTGGCTCGGCGGCTGCGGCGGGCGGGCAGGCGGGCAGGCCGGCAGGCGGGTGCGCGGAGGGCTGGTG
CCCCGCAGCAGGTGGGCGGGGTGCGGTTGGCGGCGGGCGGCTGGGCCGGGGGCTGCCGGCTGCGCTCGGGCCGTGCGCGGC
GGCCGTGCGGGCACGCCATGGACTTCAACATGAAGAAGCTGGCGTCGGACGCGGGCATCTTCTTACCCGGGCGGTGCAG
TTCACGGAGGAGAAAATTTGGCCAGGCTGAGAAGACTGAGCTTGATGCCACTTTGAAAACCTTCTGGCCCGGCAGACAG
CACCAAGAACTGGACAGAGAAGATCTTGAGGCAGACAGAGGTGCTGCTGCAGCCCAACCCAGTGCCCGAGTGAGGAGT
TCCTGTATGAGAAGCTGGACAGGAAGGTCCCTCAAGGGTCACCAACGGGGAGCTGCTGGCTCAGTACATGGCAGACGCG
GCCAGTGAGCTGGGGCCGACCACCCCTATGGGAAGACACTGATCAAGGTGGCAGAAGCTGAAAAGCAACTGGGAGCCGC
GGAGAGGGATTTTATCCACACGGCCTCCATCAGCTTCTCTCACACCCTTGCGCAACTTCTGGAGGGGGACTGGAAGACCA
TCTCGAAGGAGAGGCGGCTCCTCCAAAACCGGCTCTGGACTTGATGCCTGCAAAGCGAGGCTGAAGAAGGCCAAGGCT

GCAGAAGCCAAAGCCACGTGTGAGGGAGATACGGTGCCTGACTTTTCAGGAGACTAGACCTCGTAATTACATTCTCTCGGC
CAGCGCCTCCGCGCTCTGGAATGATGAAGTGGACAAGGCCGAGCAGGAGCTCCGCGTGGCCCAGACAGAGTTTGACCGGC
AAGCAGAAGTGACCCGTCTCTTGCTGGAGGGAATCAGTAGCACTCACGTGAACCACCTGCGCTGCCTCCACGAGTTCGTC
AAGTCTCAGACAACTACTACGCACAGTGCTACCGCCACATGCTGGACTTGCAGAAGCAGCTGGGCAGCTCCCAGGGTGC
CATATTTCCCGGCACCTTCGTGGGCACCACAGAGCCCGCTCCCCACCCCTGAGCAGCACCTCACCCACCACTGCTGCGG
CCACTATGCCTGTGGTGCCCTCTGTGGCCAGCCTGGCCCCCTCCGGGGGAGGCCTCGCTCTGCCTGGAAGAGGTGGCCCC
CCTGCCAGTGGGACCCGCAAAGCTCGGGTGTCTATGACTACGAGGCAGCCGACAGCAGTGAGCTGGCCCTGCTGGCTGA
TGAGCTCATCACTGTCTACAGCCTGCCTGGCATGGACCCTGACTGGCTCATTGGCGAGAGAGGCAACAAGAAGGGCAAGG
TCCCTGTCACCTACTTGAACTGCTCAGCTAGGCAGGTGCCCCATCCCCCGCATTCTGGCCTAGGCAGGAGAGGATG
GGCGCAGCCCTGCCACTTAACCTGTTTGTGGTGACACAGTTGTTTCAGAGTGGGAGAATTACCCCCATTCTGTCCCTGC
CCCTAGTCACCTAGCTGTGAGGGTGCCTGAGGCTGAATGGCTCCACCCCTCCCCAGCCCTGCTTCTGACCTGTGGCTCT
GGAGCCCTGCCCCTGCCTGCATCCCCGAGCACCCACCCCTCCAGGCTCCACTAAGGAGGGAGGGGCTGTCTGCAGCAGC
TGCACTCAGCACCTAGGCCAGGGTGGGGCCGCCGAGATGGGCTCAGGAAGCCCCAGGTGCACTCAGCGAGAGCCCTGCC
TTTCAGTTGCCAAAAGCTGCATCAGGGGAATGCGCAAGGCACACAGGGCTCTGGCAGCCCTGGGGACTGGGCGCTGCC
CCTGGGAGGGGAGAGCCTGGCCAGGGTGGTGTGGGCCCGAGCAGCATCTTCCGTGCTATCCTCCCCTCCCACCCCT
CACAGCTCAAGCCAAGTCCAGCGGCCGAGTCTTACCTCTCCACACTCACTTTTTATCTGGTGTCTTTACTTCTGCCTG
CGTTTGCTCTCTAGCCAATAAACCGTCCTTGTGTGCGAGTCACCTGGGCTCCTGTCAGGGCCTGGCCCTGAGGGTGGTAA
AGGGAAAGGTAGACTCACCTCTGCCCCACTCTTCCACAGAGTGAGCAGGGGCCCTGTGGCTGCCCCGGCCCCAGCTCT
CTAGTTGGGAAGAAGTGACGCCCTCCCTGTCTTCTGCGGGCCTGTGCCTCTCAGAGGGCAGTGCTGTTCTGGACATGA
AGCCGCACAAGGAACGTTTTATTCTTAAGAAAAAGTTTCTAAATTTGGATTGTGGAGCGGACTGTAGAATGCGTCTGAC
AGTTCAAGTTCAGTCAAGCACAAGAAGTGGGTAGCGTCACTGCTGTCTGCAGGTCGGGCGTTTCACCCAGCATGTGCCCCGTG
CCATGGGTCTCATGCCGTCTCAGTGTCCACATTTACAGATGAGATCAGCAAGACAGTCAGCTCCTCAAGGGACCACA
GTTGGCAAGTGCCAAGCAGGGACTGAAGCCAGGCAGCCTGATTCTAGAAACCCTAAGTGATGTCTGTGTTTTAGATGG
CCCCTAGCAGGACCTAGCATTCTGACTTCAGTCTGAGAAGGCCAACAGCCAGTAGGCCCCACTGTTGGGGCTTCTGAAG
AGGGGATCGGGGATGACGGGGGCACGGGGCTATAAATAGGAAGGCACAGAGCTTCAAGAAAGGCTCACCCAGGGATGAG
CTCAGCCCACTGGGCCAATGAAAGCAGGGTCAAGGACAGGACCAGCGCAGGCCAAGGAAGGAATATCTGACAGCGCCCA
CCCAGCCAAACCTCAGCCCAAGGACAGGAATGAGGAGATGCTGGTGAAGTACCATCCATCAGTACCTGCCTTCCCCCG
AGGCTGCAGCCCCACTCCCAGGCGCCTGGCCAGGGGAGTTTCTAGGTTCTGAGAGCCACGTTGTCTATCCCTGGGCTTTG
AAGTTAAACATCACACAGCTGTCTATAACAAGATTTTAATATCTGTATAAATAGACCACAGAATTACCAAACTGCAAA

Network organization of the human autophagy system
Nature 466 (7302), 68-76 (2010)

CTGCGCGCTCGGGCTGGCTCGGCGGCTGCGGCGGGCGGGCAGGCGGGCAGGCCGGCAGGCGGGTGC GCGGAGGGCTGGTG
CCCCGCAGCAGGTGGGCGGGGTGCGGTTGGCGGCGGCGCTGGGCCGGGGCTGCCGCTGCGCTCGGGCCGTGCGCGGC
GGCGGTGCGGGCAGCCATGGACTTCAACATGAAGAAGCTGGCGTGGACGCGGGCATCTTCTTACCCGGGCGGTGCAG
TTCACGGAGGAGAAATTTGGCCAGGCTGAGAAGACTGAGCTTGATGCCCACTTTGAAAACCTTCTGGCCCGGCAGACAG
CACCAAGAACTGGACAGAGAAGATCTTGAGGCAGACAGAGGTGCTGCTGCAGCCCAACCCCACTGCCCCAGTGAGGAGT
TCCTGTATGAGAAGCTGGACAGGAAGTCCCTCAAGGGTCACCAACGGGGAGCTGCTGGCTCAGTACATGGCAGACGCG
GCCAGTGAGCTGGGGCCGACCACCCCTATGGGAAGACACTGATCAAGGTGGCAGAAGCTGAAAAGCAACTGGGAGCCGC
GGAGAGGGATTTTATCCACACGGCCTCCATCAGTCTCTCACACCCTTGCGCAACTTCTGGAGGGGGACTGGAAGACCA
TCTCGAAGGAGAGGCGGCTCCTCCAAAACCGGCTCTGGACTTGATGCCTGCAAAGCGAGGCTGAAGAAGGCCAAGGCT
GCAGAAGCCAAAGCCACGTGTGAGGGAGATACGGTGCCTGACTTTTCAGGAGACTAGACCTCGTAATTACATTCTCTCGGC
CAGCGCCTCCGCGCTCTGGAATGATGAAGTGGACAAGGCCGAGCAGGAGCTCCGCGTGGCCCAGACAGAGTTTGACCGGC
AAGCAGAAGTGACCCGTCTCTTGCTGGAGGGAATCAGTAGCACTCACGTGAACCACCTGCGCTGCCTCCACGAGTTCGTC
AAGTCTCAGACAACTACTACGCACAGTGCTACCGCCACATGCTGGACTTGCAGAAGCAGCTGGGCAGCTCCCAGGGTGC
CATATTTCCCGGCACCTTCGTGGGCACCACAGAGCCCGCTCCCCACCCCTGAGCAGCACCTCACCCACCACTGCTGCGG
CCACTATGCCTGTGGTGCCCTCTGTGGCCAGCCTGGCCCCCTCCGGGGGAGGCCTCGCTCTGCCTGGAAGAGGTGGCCCC
CCTGCCAGTGGGACCCGCAAAGCTCGGGTGTCTATGACTACGAGGCAGCCGACAGCAGTGAGCTGGCCCTGCTGGCTGA

TGAGCTCATCACTGTCTACAGCCTGCCTGGCATGGACCCTGACTGGCTCATTGGCGAGAGAGGCAACAAGAAGGGCAAGG
TCCCTGTCACCTACTTGGAAGTCTCAGCTAGGCAGGTGCCCCATCCCCCGCATTCTGGCCTAGGCAGGAGAGGATG
GGCGCAGCCCTGCCACTTAACCTGTTTGTGGTGACACAGTTGTTTCTAGAGTGGGAGAATTCACCCCATCTGTCCCTGC
CCCTAGTCACCTAGCTGTGAGGGTGCCTGAGGCTGAATGGCTCCACCCCTCCCCAGCCCTGCTTCTGACCTGTGGCTCT
GGAGCCCCCTGCCCCTGCCTGCATCCCCGAGCACCCACCCCTCCAGGCTCCACTAAGGAGGGAGGGGCTGTCTGCAGCAGC
TGCACTCAGCACCTAGGCCAGGGTGGGGCCGCCGAGATGGGCTCAGGAAGCCCCAGGTGCACTCAGCGAGAGCCCTGCC
TTTCAGTTGCCAAAAGCTGCATCAGGGGAATGCGGCAAGGCACACAGGGCTCTGGCAGCCCCTGGGGACTGGGCGTGC
CCTGGGAGGGGAGAGCCTGGCCAGGGCTGGTGTGGGCCCCGAGCAGCATCTTCCGGTGCTATCCTCCCCTCCCACCCCT
CACAGCTCAAGCCAAGTCCAGCGGCCGAGTCTTCACTCTCCACACTCACTTTTTATCTGGTGTCTTTACTTCTGCCTG
CGTTTGCTCTCTAGCCAATAAACCGTCCTTGTGTGCGAGTCACCTGGGCTCCTGTGAGGGCCTGGCCCTGAGGGTGGTAA
AGGGAAGGTAGACTCACCTCTGCCCCACTCTTCCACAGAGTGAGCAGGGGCCCTGTGGCTGCCCCGGCCCCAGCTCT
CTAGTTGGGAAGAAGTGAGCCCTCCCTGTCTTCTGCGGGCCTGTGCCTCTCAGAGGGCAGTGCTGTTCCCTGGACATGA
AGCCGCACAAGGAACGTTTTATTCTAAGAAAAAGTTTCTAAATTTGGATTGTGGAGCGGACTGTAGAATGCGTCTGAC
AGTTTCAGTTCAAGCACAAGAAGTGGGTAGCGGTCACTGCTGTCTGCAGGTCGGGCGTTTCACCCAGCATGTCCCCCGTG
CCATGGGTTTCTCATGCCGTCTCAGTGTCCACATTTACAGATGAGATCAGCAAGACAGTCAGCTCCTCAAGGGACCACA
GTTGGCAAGTGGCCAAGCAGGGACTGAAGCCAGGCAGCCTGATTCTAGAAACCTAAGTGATGTCTGTGTTTTAGATGG
CCCCTAGCAGGACCTAGCATTCTGACTTCACTCTGAGAAGGCCAACAGCCAGTAGGCCCACTGTTGGGGCTTCTGAAG
AGGGGATCGGGGATGACGGGGGCACGGGGCTATAAATAGGAAGGCACAGAGCTTCAAGAAAGGCTCACCCAGGGATGAG
CTCAGCCCACTGGGCCAATGAAAGCAGGGTCAAGGACAGGACCAGCGCAGGCCAAGGAAGGGAATATCTGACAGCGCCCA
CCCAGCCAAACCTCAGCCCAAGGACAGGAATGAGGAGATGCTGGTGAAGTACCATCCATCAGTACCTGCCTTCCCCCG
AGGCTGCAGCCCCACTCCCAGGCGCCTGGCCAGGGGAGTTTTCTAGGTTCTGAGAGCCACGTTGTCTATCCCTGGGCTTTG
AAGTTAAACATCACACAGCTGTCTATAACAAGATTTTAATATCTGTATAAATAGACCACAGAATTACCAAACTGCAAA

SPAS-1 (stimulator of prostatic adenocarcinoma-specific T cells)/SH3GLB2: A
prostate tumor antigen identified by CTLA-4 blockade
Proc Natl Acad Sci U S A 105 (9), 3509-3514 (2008)

CTGCGCGCTCGGGCTGGCTCGGCGGCTGCGCGGGCGGGCAGGCGGGCAGGCCGGCAGGCGGGTGC GCGGAGGGCTGGTG
CCCCGCAGCAGGTGGGCGGGGTGCGGTTGGCGGCGGCGGCTGGGCCGGGGGCTGCCGGCTGCGCTCGGGCCGTGCGCGGC
GGCCGTGCGGGCAGCCATGGACTTCAACATGAAGAAGCTGGCGTGGACGCGGGCATCTTCTTACCCGGGCGGTGCAG
TTCACGGAGGAGAAAATTTGGCCAGGCTGAGAAGACTGAGCTTGATGCCACTTTGAAAACCTTCTGGCCCGGGCAGACAG
CACCAAGAACTGGACAGAGAAGATCTTGAGGCAGACAGAGGTGCTGCTGCAGCCCAACCCAGTGCCGAGTGAGGAGT
TCCTGTATGAGAAGCTGGACAGGAAGGTCCCCCTAAGGGTCACCAACGGGGAGCTGCTGGCTCAGTACATGGCAGACGCG
GCCAGTGAGCTGGGGCCGACCACCCCTATGGGAAGACACTGATCAAGGTGGCAGAAGCTGAAAAGCAACTGGGAGCCGC
GGAGAGGGATTTATCCACACGGCCTCCATCAGCTTCTCACACCCTTGCGCAACTTCTGGAGGGGGACTGGAAGACCA
TCTCGAAGGAGAGGCGGCTCCTCCAAAACGGCGTCTGGACTTGATGCCTGCAAAGCGAGGCTGAAGAAGGCCAAGGCT
GCAGAAGCCAAAGCCACGTGTGAGGGAGATACGGTGCCTGACTTTCAGGAGACTAGACCTCGTAATTACATTCTCTCGGC
CAGCGCCTCCGCGCTCTGGAATGATGAAGTGACAAGGCCGAGCAGGAGCTCCGCGTGGCCCAGACAGAGTTTGACCGGC
AAGCAGAAGTGACCCGTCTCTTGCTGGAGGGAATCAGTAGCACTCACGTGAACCACCTGCGCTGCCTCCACGAGTTCGTC
AAGTCTCAGACAACCTACTACGCACAGTGCTACCGCCACATGCTGGACTTGAGAAGCAGCTGGGCAGCTCCCAGGGTGC
CATATTTCCCGGCACCTTCTGTTGGCACCACAGAGCCCGCTCCCCACCCCTGAGCAGCACCTCACCCACCACTGCTGCGG
CCACTATGCCTGTGGTGCCCTCTGTGGCCAGCCTGGCCCCCTCCGGGGGAGGCCTCGCTCTGCCTGGAAGAGGTGGCCCC
CCTGCCAGTGGGACCCGCAAAGCTCGGGTGCTCTATGACTACGAGGCAGCCGACAGCAGTGAGCTGGCCCTGCTGGCTGA
TGAGCTCATCACTGTCTACAGCCTGCCTGGCATGGACCCTGACTGGCTCATTGGCGAGAGAGGCAACAAGAAGGGCAAGG
TCCCTGTCACCTACTTGGAAGTCTCAGCTAGGCAGGTGCCCCATCCCCCGCATTCTGGCCTAGGCAGGAGAGGATG
GGCGCAGCCCTGCCACTTAACCTGTTTGTGGTGACACAGTTGTTTCTAGAGTGGGAGAATTCACCCCATCTGTCCCTGC
CCCTAGTCACCTAGCTGTGAGGGTGCCTGAGGCTGAATGGCTCCACCCCTCCCCAGCCCTGCTTCTGACCTGTGGCTCT
GGAGCCCCCTGCCCCTGCCTGCATCCCCGAGCACCCACCCCTCCAGGCTCCACTAAGGAGGGAGGGGCTGTCTGCAGCAGC
TGCACTCAGCACCTAGGCCAGGGTGGGGCCGCCGAGATGGGCTCAGGAAGCCCCAGGTGCACTCAGCGAGAGCCCTGCC

TTTCAGTTGCCAAAAGCTGCATCAGGGGAATGCGGCAAGGCACACAGGGCTCTGGCAGCCCCTGGGGACTGGGCGCTGCC
CCTGGGAGGGGAGAGCCTGGCCAGGGCTGGTGTGGGCCCCGAGCAGCATCTTCCGGTGCTATCCTCCCCTCCCACCCCT
CACAGCTCAAGCCAAGTCCAGCGGCCGAGTCTTCACTCTCCACACTCACTTTTATCTGGTGTTTTTACTTCTGCCTG
CGTTTGCTCTCTAGCCAATAAACCGTCCTTGTGTGCGAGTCACCTGGGCTCCTGTCAGGGCCTGGCCCTGAGGGTGGTAA
AGGGAAAGGTAGACTCACCTCTGCCCCACTCTTCCACAGAGTGAGCAGGGGCCCTGTGGCTGCCCCGGCCCCCAGCTCT
CTAGTTGGGAAGAAGTGCAGCCCTCCCTGTCTTCTGCGGGGCTGTGCCTCTCAGAGGGCAGTGCTGTTCCCTGGACATGA
AGCCGCACAAGGAACGTTTTATTCTAAGAAAAAGTTTCTAAATTTGGATTGTGGAGCGGACTGTAGAATGCGTCTGAC
AGTTCAGTTCAAGCACAAGAAGTGGGTAGCGGTCACTGCTGTCTGCAGGTCGGGCGTTTCACCCAGCATGTGCCCCGTG
CCATGGGTTCTCATGCCGTCTCAGTGTCCACATTTACAGATGAGATCAGCAAGACAGTCAGCTCCTCAAGGGACCACA
GTTGGCAAGTGGCCAAGCAGGGACTGAAGCCCAGGCAGCCTGATTCTAGAAACCCTAAGTGATGTCTGTGTTTTAGATGG
CCCCTAGCAGGACCTAGCATTCTGACTTCAGTCTGAGAAGGCCAACAGCCAGTAGGCCCCACTGTTGGGGCTTCTGAAG
AGGGGATCGGGGATGACGGGGGCACGGGGCTATAAATAGGAAGGCACAGAGCTTCAAGAAAGGCTCACCCAGGGATGAG
CTCAGCCCACTGGGCCAATGAAAGCAGGGTCAAGGACAGGACCAGCGCAGGCCAAGGAAGGGAATATCTGACAGCGCCCA
CCCAGCCAAACCTCAGCCCAAGGACAGGAATGAGGAGATGCTGGTGAAGTACCATCCATCAGTACCTGCCTTCCCCCG
AGGCTGCAGCCCCACTCCCAGGCGCTGGCCAGGGGAGTTTCTAGGTTCTGAGAGCCACGTTGTCTATCCCTGGGCTTGT
AAGTTAAACATCACACAGCTGTCTATAACAAGATTTTAATATCTGTATAAATAGACCACAGAATTACCAAAACTGCAAA

RRIG1 mediates effects of retinoic acid receptor beta2 on tumor cell growth and
gene expression through binding to and inhibition of RhoA
Cancer Res 66 (14), 7111-7118 (2006)

CTGCGCGCTCGGGCTGGCTCGGCGGGCTGCGGCGGGCGGGCAGGCGGGCAGGCCGGCAGGCGGGTGCGCGGAGGGCTGGTG
CCCCGCAGCAGGTGGGCGGGGTGCGGTTGGCGGCGGGCGGCTGGGCCGGGGGCTGCCGGCTGCGCTCGGGCCGTGCGCGGC
GGCCGTGCGGGCAGCCATGGACTTCAACATGAAGAAGCTGGCGTCGGACGCGGGCATCTTCTTACCCGGGCGGTGCGAG
TTCACGGAGGAGAAATTTGGCCAGGCTGAGAAGACTGAGCTTGATGCCACTTTGAAAACCTTCTGGCCCGGGCAGACAG
CACCAAGAACTGGACAGAGAAGATCTTGAGGCAGACAGAGGTGCTGCTGCAGCCCAACCCCAAGTGCCCGAGTGAGGAGT
TCCTGTATGAGAAGCTGGACAGGAAGGTCCCCTCAAGGGTCACCAACGGGGAGCTGCTGGCTCAGTACATGGCAGACGCG
GCCAGTGAGCTGGGGCCGACCAACCCCTATGGGAAGACACTGATCAAGGTGGCAGAAGCTGAAAAGCAACTGGGAGCCGC
GGAGAGGGATTTTATCCACACGGCCTCCATCAGTTCCTCACACCCTTGCGCAACTTCTTGAGGGGGACTGGAAGACCA
TCTCGAAGGAGAGGCGGCTCCTCCAAAACCGCGCTTGGACTTGATGCCTGCAAAGCGAGGCTGAAGAAGGCCAAGGCT
GCAGAAGCCAAAGCCACGTGTGAGGGAGATACGTTGCTGACTTTTCAAGGAGACTAGACCTCGTAATTACATTCTCTCGGC
CAGCGCCTCCGCGCTCTGGAATGATGAAGTGACAAGGCCGAGCAGGAGCTCCGCGTGCGCCAGACAGAGTTTGACCGGC
AAGCAGAAGTGACCCGTCTCTTGCTGGAGGGAATCAGTAGCACTCACGTGAACCACCTGCGCTGCCTCCACGAGTTCGTC
AAGTCTCAGACAACTACTACGCACAGTGCTACCGCCACATGCTGGACTTGCAAGCAGCTGGGCAGCTCCCAGGGTGC
CATATTTCCCGCACCTTCGTGGGCACCACAGAGCCCGCTCCCCACCCCTGAGCAGCACCTCACCCACCACTGCTGCGG
CCACTATGCCTGTGGTGCCCTCTGTGGCCAGCCTGGCCCCCTCCGGGGGAGGCCTCGCTCTGCCTGGAAGAGGTGGCCCC
CCTGCCAGTGGGACCCGCAAAGCTCGGGTGCTCTATGACTACGAGGCAGCCGACAGCAGTGAGCTGGCCCTGCTGGCTGA
TGAGCTCATCACTGTCTACAGCCTGCCTGGCATGGACCCTGACTGGCTCATTGGCGAGAGAGGCAACAAGAAGGGCAAGG
TCCCTGTCACCTACTTGAACTGCTCAGCTAGGCAGGTGCCCCATCCCCCGCATTCTGGCCTAGGCAGGAGAGGATG
GGCGCAGCCCTGCCACTTAACTTGTTTGTGGTGACACAGTTGTTTCAGAGTGGGGAGAATTACCCCCATTCTGTCCCTGC
CCCTAGTCACCTAGCTGTGAGGGTGCTGAGGCTGAATGGCTCCACCCTCCCCAGCCCTGCTTCTGACCTGTGGCTCT
GGAGCCCCCTGCCCTGCCTGCATCCCCGAGCACCCACCCCTCCAGGCTCCACTAAGGAGGGAGGGGCTGTCTGCAGCAGC
TGCACTCAGCACCTAGGCCAGGGTGGGGCCGCGCAGATGGGCTCAGGAAGCCCCAGGTGCACTCAGCGAGAGCCCTGCC
TTTCAGTTGCCAAAAGCTGCATCAGGGGAATGCGGCAAGGCACACAGGGCTCTGGCAGCCCCTGGGGACTGGGCGCTGCC
CCTGGGAGGGGAGAGCCTGGCCAGGGCTGGTGTGGGCCCCGAGCAGCATCTTCCGGTGCTATCCTCCCCTCCCACCCCT
CACAGCTCAAGCCAAGTCCAGCGGCCGAGTCTTCACTCTCCACACTCACTTTTATCTGGTGTTTTTACTTCTGCCTG
CGTTTGCTCTCTAGCCAATAAACCGTCCTTGTGTGCGAGTCACCTGGGCTCCTGTCAGGGCCTGGCCCTGAGGGTGGTAA
AGGGAAAGGTAGACTCACCTCTGCCCCACTCTTCCACAGAGTGAGCAGGGGCCCTGTGGCTGCCCCGGCCCCCAGCTCT
CTAGTTGGGAAGAAGTGCAGCCCTCCCTGTCTTCTGCGGGGCTGTGCCTCTCAGAGGGCAGTGCTGTTCCCTGGACATGA

AGCCGCACAAGGAACGTTTTATTCTTAAGAAAAAGTTTCCTAAATTTGGATTGTGGAGCGGACTGTAGAATGCGTCTGAC
 AGTTCAGTTCAAGCACAAGAAGTGGGTAGCGGTCACTGCTGTCTGCAGGTCGGGCGTTTCACCCAGCATGTGCCCCGTG
 CCATGGGTTCTCATGCCGTCTCAGTGTCCACATTTACAGATGAGATCAGCAAGACAGTCAGCTCCTCAAGGGACCACA
 GTTGGCAAGTGGCCAAGCAGGGACTGAAGCCCAGGCAGCCTGATTCTAGAAACCCTAAGTGATGTCTGTGTTTTAGATGG
 CCCCTAGCAGGACCTAGCATTCTGACTTCAGTCTGAGAAGGCCAACAGCCAGTAGGCCCCACTGTTGGGGCTTCTGAAG
 AGGGGATCGGGGATGACGGGGGCACGGGGCTATAAATAGGAAGGCACAGAGCTTCAAGAAAGGCTCACCCAGGGATGAG
 CTCAGCCCACTGGGCAATGAAAGCAGGGTCAAGGACAGGACCAGCGCAGGCCAAGGAAGGAATATCTGACAGCGCCCA
 CCCAGCCAAACCCTCAGCCCAAGGACAGGAATGAGGAGATGCTGGTGAAGTACCATCCATCAGTACCTGCCTTCCCCCG
 AGGCTGCAGCCCCACTCCCAGGCGCTGGCCAGGGGAGTTTTCTAGGTTCTGAGAGCCACGTTGTCTATCCCTGGGCTTTG
 AAGTTAAACATCACACAGCTGTCTATAACAAGATTTTAATATCTGTATAAATAGACCACAGAATTACCAAACTGCAAA

Regulation of alternative splicing by SRp86 and its interacting proteins
 Mol Cell Biol 23 (21), 7437-7447 (2003)

CTGCGCGCTCGGGCTGGGCTCGGCGGCTGCGGCGGGCGGGCAGGCGGGCAGGCCGGCAGGCGGGTGCGCGAGGGCTGGTG
 CCCCCGAGCAGGTGGGCGGGGTGCGGTTGGCGGCGGCGCTGGGCCGGGGCTGCCGCTGCGCTCGGGCCGTGCGCGGC
 GGCCGTGCGGGCAGCCATGGAATCAACATGAAGAAGCTGGCGTCGGACGCGGCATCTTCTTACCCGGGCGGTGCAG
 TTCACGGAGGAGAAATTTGGCCAGGCTGAGAAGACTGAGCTTGATGCCACTTTGAAAACCTTCTGGCCCGGGCAGACAG
 CACCAAGAACTGGACAGAGAAGATCTTGAGGCAGACAGAGGTGCTGCTGCAGCCCAACCCCACTGCCCCAGTGAGGAGT
 TCCTGTATGAGAAGCTGGACAGGAAGTCCCCCAAGGGTCACCAACGGGGAGCTGCTGGCTCAGTACATGGCAGACGCG
 GCCAGTGAGCTGGGGCCGACACCCCTATGGGAAGACACTGATCAAGTGGCAGAAGCTGAAAAGCAACTGGGAGCCGC
 GGAGAGGGATTTTATCCACACGGCCTCCATCAGCTTCTCACCCTTGCGCACTTCTGAGAGGGGACTGGAAGACCA
 TCTCGAAGGAGAGGCGGCTCCTCCAAAACCGCGTCTGGACTTGATGCCTGCAAAGCGAGGCTGAAGAAGGCCAAGGCT
 GCAGAAGCCAAAGCCACGTGTGAGGGAGATACGGTGCCTGACTTTTACAGGAGTACAGCTCGTAATTACATTCTCTCGGC
 CAGCGCCTCCGCGCTCTGGAATGATGAAGTGGACAAGGCCGAGCAGGAGCTCCGCGTGGCCAGACAGAGTTTGACCGGC
 AAGCAGAAGTGACCCGTCTCTTGCTGGAGGGAATCAGTAGCACTCACGTGAACCCTGCGCTGCCTCCACGAGTTCTGTC
 AAGTCTCAGACAACTACTACGCACAGTGCTACCGCCACATGCTGGACTTGCGAAGCAGCTGGGCAGCTCCCAGGGTGC
 CATATTTCCCGCACCTTCGTGGGCACACAGAGCCCGCTCCCCACCCCTGAGCAGCACCTCACCCACCACTGCTGCGG
 CCACTATGCCGTGTGGTGCCCTCTGTGGCCAGCCTGGCCCCCTCCGGGGGAGGCCCTCGCTCTGCCTGGAAGAGGTGGCCCC
 CCTGCCAGTGGGACCCGCAAAGCTCGGGTGCTCTATGACTACGAGGCAGCCGACAGCAGTGAGCTGGCCCTGCTGGCTGA
 TGAGCTCATCACTGTCTACAGCCTGCCTGGCATGAACCTGACTGGCTCATTGGCGAGAGAGGCAACAAGAAGGGCAAGG
 TCCCTGTCACCTACTTGAACTGCTCAGCTAGGCAGGTGCCCCCATCCCCCGCATTCTGGCCTAGGCAGGAGAGGATG
 GCGCAGCCCTGCCACTTAACCTGTTTGTGGTGACACAGTTGTTTCAAGTGGGGAGAATTCACCCCATCTGTCCCTGC
 CCCTAGTCACCTAGCTGTGAGGGTGCTGAGGCTGAATGGCTCCACCCCTCCCCAGCCCTGCTTCTGACCTGTGGCTCT
 GGAGCCCTGCCCCTGCCTGCATCCCCGAGCACCCACCCCTCCAGGCTCCACTAAGGAGGGAGGGGCTGTCTGCAGCAGC
 TGCACTCAGCACCTAGGCCAGGTGGGGCCCGCAGATGGGCTCAGGAAGCCCCAGGTGCACTCAGCGAGAGCCCTGCC
 TTTCAGTTGCCAAAAGCTGCATCAGGGGAATGCGGCAAGGCACACAGGGCTCTGGCAGCCCCCTGGGGACTGGGCGCTGCC
 CCTGGGAGGGGAGAGCCTGGCCAGGGCTGGTGTGGGGCCGAGCAGCATCTCCGGTGCTATCCTCCCCTCCCACCCCT
 CACAGCTCAAGCCAAGTCCAGCGGCCGAGTCTTCACTCTCCACACTCACTTTTTATCTGGTGTTTTTACTTCTGCCTG
 CGTTTGCTCTCTAGCCAATAAACCGTCCTTGTGTGCGAGTCACCTGGGCTCCTGTCAGGGCCTGGCCCTGAGGGTGGTAA
 AGGGAAAGGTAGACTCACCTCTGCCCCACTCTTCCACAGAGTGAGCAGGGGCCCTGTGGCTGCCCCGGCCCCCAGCTCT
 CTAGTTGGGAAGAAGTGACGCCCTCCCTGTCTTCTGCGGGGCTGTGCCTCTCAGAGGGCAGTGCTGTTCTGGACATGA
 AGCCGCACAAGGAACGTTTTATTCTTAAGAAAAAGTTTCCTAAATTTGGATTGTGGAGCGGACTGTAGAATGCGTCTGAC
 AGTTCAGTTCAAGCACAAGAAGTGGGTAGCGGTCACTGCTGTCTGCAGGTCGGGCGTTTCACCCAGCATGTGCCCCGTG
 CCATGGGTTCTCATGCCGTCTCAGTGTCCACATTTACAGATGAGATCAGCAAGACAGTCAGCTCCTCAAGGGACCACA
 GTTGGCAAGTGGCCAAGCAGGGACTGAAGCCCAGGCAGCCTGATTCTAGAAACCCTAAGTGATGTCTGTGTTTTAGATGG
 CCCCTAGCAGGACCTAGCATTCTGACTTCAGTCTGAGAAGGCCAACAGCCAGTAGGCCCCACTGTTGGGGCTTCTGAAG
 AGGGGATCGGGGATGACGGGGGCACGGGGCTATAAATAGGAAGGCACAGAGCTTCAAGAAAGGCTCACCCAGGGATGAG
 CTCAGCCCACTGGGCAATGAAAGCAGGGTCAAGGACAGGACCAGCGCAGGCCAAGGAAGGAATATCTGACAGCGCCCA

CCCAGCCAAACCCTCAGCCCAAGGACAGGAATGAGGAGATGCTGGTGAAGTAGCCATCCATCAGTACCTGCCTTCCCCCG
AGGCTGCAGCCCCACTCCCAGGCGCCTGGCCAGGGAGTTTTCTAGGTTCTGAGAGCCACGTTGTTCATCCCTGGGCTTTG
AAGTTAAACATCACACAGCTGTCTATAACAAGATTTTAATATCTGTATAAATAGACCACAGAATTACCAAACTGCAAA

SH3GLB, a new endophilin-related protein family featuring an SH3 domain
Genomics 71 (2), 222-234 (2001)

CTGCGCGCTCGGGCTGGCTCGGCGGCTGCGGCGGGCGGGCAGGCGGGCAGGCCGGCAGGCGGGTGCGCGGAGGGCTGGTG
CCCCGCAGCAGGTGGGCGGGGTGCGGTTGGCGGCGGCGGCTGGGCCGGGGCTGCCGGCTGCGCTCGGGCCGTGCGCGGC
GGCCGTGCGGGCACGCCATGGAAGTTCAACATGAAGAAGCTGGCGTGGACGCGGGCATCTTCTTACCCGGGCGGTGCAG
TTCACGGAGGAGAAATTTGGCCAGGCTGAGAAGACTGAGCTTGATGCCACTTTGAAAACCTTCTGGCCCGGGCAGACAG
CACCAAGAACTGGACAGAGAAGATCTTGAGGCAGACAGAGGTGCTGCTGCAGCCCAACCCAGTGCCCGAGTGGAGGAGT
TCCTGTATGAGAAGCTGGACAGGAAGTCCCCTCAAGGGTCACCAACGGGGAGCTGCTGGCTCAGTACATGGCAGACGCG
GCCAGTGAGCTGGGGCCGACCACCCCTATGGGAAGACACTGATCAAGGTGGCAGAAGCTGAAAAGCAACTGGGAGCCGC
GGAGAGGGATTTTATCCACACGGCCTCCATCAGCTTCTCTCACACCCTTGCGCAACTTCTGGAGGGGGACTGGAAGACCA
TCTCGAAGGAGAGGCGGCTCCTCCAAAACCGCGCTCTGGACTTGATGCCTGCAAAGCGAGGCTGAAGAAGGCCAAGGCT
GCAGAAGCCAAAGCCACGTGTGAGGGAGATACGGTGCCTGACTTTTACAGGAGACTAGACCTCGTAATTACATTCTCTCGGC
CAGCGCCTCCGCGCTCTGGAATGATGAAGTGGACAAGGCCGAGCAGGAGCTCCGCGTGGCCAGACAGAGTTTGACCGGC
AAGCAGAAGTGACCCGTCTCTTGCTGGAGGGAATCAGTAGCACTCACGTGAACCACCTGCGCTGCCTCCACGAGTTCGTC
AAGTCTCAGACAACCTACTACGCACAGTGCTACCGCCACATGCTGGACTTGCAGAAGCAGCTGGGCAGCTCCCAGGGTGC
CATATTTCCCGGCACCTTCGTGGGCACCACAGAGCCCGCTCCCCACCCCTGAGCAGCACCTCACCCACCACTGCTGCGG
CCACTATGCCTGTGGTGCCCTCTGTGGCCAGCCTGGCCCCCTCCGGGGGAGGCCTCGCTCTGCCTGGAAGAGGTGGCCCC
CCTGCCAGTGGGACCCGCAAAGCTCGGGTGCTCTATGACTACGAGGCAGCCGACAGCAGTGAGCTGGCCCTGCTGGCTGA
TGAGCTCATCACTGTCTACAGCCTGCCTGGCATGGAACCTGACTGGCTCATTGGCGAGAGAGGCAACAAGAAGGGCAAGG
TCCCTGTCACCTACTTGAACTGCTCAGCTAGGCAGGTGCCCCATCCCCCGCATTCTGGCCTAGGCAGGAGAGGATG
GGCGCAGCCCTGCCACTTAACTTGTTTGTGGTGACACAGTTGTTTACAGAGTGGGGAGAATTCACCCCATTTCTGTCCCTGC
CCCTAGTCACCTAGCTGTGAGGGTGCTGAGGCTGAATGGCTCCACCCCTCCCCAGCCCTGCTTCTGACCTGTGGCTCT
GGAGCCCTGCCCCTGCCTGCATCCCCGAGCACCCACCCCTCCAGGCTCCACTAAGGAGGGAGGGGCTGTCTGCAGCAGC
TGCACTCAGCACCTAGGCCAGGTGGGGCCGCGCAGATGGGCTCAGGAAGCCCCAGGTGCACTCAGCGAGAGCCCTGCC
TTTCAGTTGCCAAAAGCTGCATCAGGGGAATGCGGCAAGGCACACAGGGCTCTGGCAGCCCTGGGGACTGGGCGTGCC
CCTGGGAGGGGAGAGCCTGGCCAGGGCTGGTGTGGGGCCGAGCAGCATCTTCCGGTGCTATCTCCCTCCCACCCCT
CACAGCTCAAGCCAAGTCCAGCGGCCGAGTCTTACCTCTCCACACTCACTTTTTATCTGGTGTTTTTACTTCTGCCTG
CGTTTGCTCTCTAGCCAATAAACCGTCCTTGTGTGCGAGTCACCTGGGCTCCTGTCAGGGCCTGGCCCTGAGGGTGGTAA
AGGGAAGGTAGACTCACCTCTGCCCCACTCTTCCACAGAGTGAGCAGGGGCCCTGTGGCTGCCCCGGCCCCAGCTCT
CTAGTTGGGAAGAAGTGCAGCCCTCCCTGTCTTCTGCGGGCCTGTGCCTCTCAGAGGGCAGTGCTGTTCTGGACATGA
AGCCGCACAAGGAACGTTTTATTCTTAAGAAAAAGTTTCTAAATTTGGATTGTGGAGCGGACTGTAGAATGCGTCTGAC
AGTTTCAGTTCAAGCACAAGAAGTGGGTAGCGGTCACTGCTGTCTGCAGGTCGGGCGTTTTACCCAGCATGTGCCCCGTG
CCATGGGTTCTCATGCCGTCTCAGTGTCCACATTTACAGATGAGATCAGCAAGACAGTCAGCTCCTCAAGGGACCACA
GTTGGCAAGTGGCCAAGCAGGGACTGAAGCCAGGCAGCCTGATTCTAGAAACCTAAGTGATGTCTGTGTTTTAGATGG
CCCCTAGCAGGACCTAGCATTCTGACTTCAGTCCTGAGAAGGCCAACAGCCAGTAGGCCCACTGTTGGGGCTTCTGAAG
AGGGGATCGGGGATGACGGGGGCACGGGGCTATAAATAGGAAGGCACAGAGCTTCAAGAAAGGCTCACCCAGGGATGAG
CTCAGCCCACTGGGCCAATGAAAGCAGGGTCAAGGACAGGACCAGCGCAGGCCAAGGAAGGGAATATCTGACAGCGCCCA
CCCAGCCAAACCCTCAGCCCAAGGACAGGAATGAGGAGATGCTGGTGAAGTAGCCATCCATCAGTACCTGCCTTCCCCCG
AGGCTGCAGCCCCACTCCCAGGCGCCTGGCCAGGGAGTTTTCTAGGTTCTGAGAGCCACGTTGTTCATCCCTGGGCTTTG
AAGTTAAACATCACACAGCTGTCTATAACAAGATTTTAATATCTGTATAAATAGACCACAGAATTACCAAACTGCAAA

A reference map of the human binary protein interactome
Nature 580 (7803), 402-408 (2020)

CTGCGCGCTCGGGCTGGCTCGGCGGCTGCGGCGGGCGGGCAGGCGGGCAGGCCGGCAGGCGGGTGCGCGGAGGGCTGGTG

CCCCCGAGCAGGTGGGCGGGGTGCGGTTGGCGGCGGCGGCTGGGCCGGGGGCTGCCGGCTGCGCTCGGGCCGTGCGCGGC
 GGCCGTGCGGGCAGCCATGGACTTCAACATGAAGAAGCTGGCGTCGGACGCGGGCATCTTCTTACCCGGGCGGTGCAG
 TTCACGGAGGAGAAATTTGGCCAGGCTGAGAAGACTGAGCTTGATGCCACTTTGAAAACCTTCTGGCCCGGGCAGACAG
 CACCAAGAACTGGACAGAGAAGATCTTGAGGCAGACAGAGGTGCTGCTGCAGCCCAACCCAGTGCCCGAGTGGAGGAGT
 TCCTGTATGAGAAGCTGGACAGGAAGGTCCCCCTCAAGGGTCACCAACGGGGAGCTGCTGGCTCAGTACATGGCAGACGCG
 GCCAGTGAGCTGGGGCCGACCACCCCTATGGGAAGACACTGATCAAGGTGGCAGAAGCTGAAAAGCAACTGGGAGCCGC
 GGAGAGGGATTTATCCACACGGCTCCATCAGCTTCTCACACCCTTGCGCAACTTCTGGAGGGGGACTGGAAGACCA
 TCTCGAAGGAGAGGCGGCTCCTCCAAAACCGGCTCTGGAAGTGGATGCCTGCAAAGCGAGGCTGAAGAAGGCCAAGGCT
 GCAGAAGCCAAAGCCACGAGGTGCTGACTTTCAGGAGACTAGACCTCGTAATTACATTCTCTCGGCCAGCGCTCCGC
 GCTCTGGAATGATGAAGTGACAAGGCCGAGCAGGAGCTCCGCGTGGCCAGACAGAGTTTGACCGGCAAGCAGAAGTGA
 CCCGTCTCTTGCTGGAGGGAATCAGTAGCACTCACGTGAACCACCTGCGCTGCCTCCACGAGTTCGTCAAGTCTCAGACA
 ACCTACTACGCACAGTGCTACCGCCACATGCTGGACTTGACAGAAGCAGCTGGGCAGATTTCCCGGCACCTTCGTGGGCAC
 CACAGAGCCCGCTCCCCACCCCTGAGCAGCACCTCACCCACCACTGCTGCGGCCACTATGCCTGTGGTGCCCTCTGTGG
 CCAGCCTGGCCCTCCGGGGGAGGCCTCGCTCTGCCTGGAAGAGGTGGCCCCCTGCCAGTGGGACCCGCAAAGCTCGG
 GTGCTCTATGACTACGAGGCAGCCGACAGCAGTGAGCTGGCCCTGCTGGCTGATGAGCTCATCACTGTCTACAGCCTGCC
 TGGCATGGACCCTGACTGGCTCATTGGCGAGAGAGGCAACAAGAAGGGCAAGGTCCCTGTACCTACTTGGAAGTGTCTCA
 GCTAGGCAGGTGCCCCCATCCCCCGCATTCTGGCCTAGGCAGGAGAGGATGGGCGCAGCCCTGCCACTTAACCTGTTTT
 GTTGGTGACACAGTTGTTTCAGAGTGGGGAGAATTCACCCCATTTCTGTCCCTGCCCTAGTCACCTAGCTGTGAGGGTGCC
 TGAGGCTGAATGGCTCCACCCCTCCCCAGCCCTGCTTCTGACCTGTGGCTCTGGAGCCCTGCCCTGCCTGCATCCCC
 GAGCACCCACCCCTCCAGGCTCCACTAAGGAGGGAGGGGCTGTCTGCAGCAGCTGCACTCAGCACCTAGGCCAGGGTGGG
 GCCGCCGAGATGGGCTCAGGAAGCCCCAGGTGCACTCAGCGAGAGCCCTGCCTTTCAGTTGCCAAAAGCTGCATCAGGG
 GAATGCGGCAAGGCACACAGGGCTCTGGCAGCCCTGGGGACTGGGCGCTGCCCTGGGAGGGGAGAGCCTGGCCAGGGC
 TGGTGTGGGGCCGAGCAGCATCTTCCGGTGCTATCTCCCTCCACCCCTCACAGCTCAAGCCAAGTCCAGCGGCCG
 CAGTCTTACCTCTCCACACTCACTTTTTATCTGGTGTTTTTACTTCTGCCTGCGTTTGCTCTCTAGCCAATAAACCGTC
 CTTGTGTGCGAGTCACTGGGCTCCTGTCAGGGCCTGGCCCTGAGGGTGGTAAAGGGAAAGGTAGACTCACCTCTGCCC
 CACTCTTCCACAGAGTGAGCAGGGGCCCTGTGGCTGCCCCGGCCCCAGCTCTCTAGTTGGGAAGAAGTGCAGCCCTCCC
 TGTCTTCTGCGGGCCTGTGCCTCTCAGAGGGCAGTGCTGTTCTGGACATGAAGCCGCACAAGGAACGTTTTATTCTTA
 AGAAAAAGTTTCTAAATTTGGATTGTGGAGCGGACTGTAGAATGCGTCTGACAGTTCAAGTCAAGACAAGAAGTGGGT
 AGCGGTCAAGTGTCTGTCAGGTGCGGCGTTTACCCAGCATGTGCCCCCGTGCCATGGGTTTCTATGCCGTCTCAGTG
 TCCACATTTACAGATGAGATCAGCAAGACAGTCAGCTCCTCAAGGGACCACAGTTGGCAAGTGGCCAAGCAGGGACTGA
 AGCCAGGCAGCCTGATTCTAGAAACCCTAAGTGATGTCTGTGTTTTAGATGGCCCTAGCAGGACCTAGCATTCTGACT
 TCAGTCTGAGAAGGCCAACAGCCAGTAGGCCCACTGTTGGGGCTTCTGAAGAGGGGATCGGGGGATGACGGGGGCACG
 GGGCTATAAATAGGAAGGCACAGAGCTTCAAGAAAGGCTCACCCAGGGATGAGCTCAGCCCACTGGGGCAATGAAAGCAG
 GGTCAAGGACAGGACCAGCGCAGGCCAAGGAAGGGAATATCTGACAGCGCCACCCAGCCAAACCCTCAGCCCAAGGACA
 GGAATGAGGAGATGCTGGTGAAGTAGCCATCCATCAGTACCTGCCTTCCCCGAGGCTGCAGCCCCACTCCCAGGCGCT
 GGCCAGGGGAGTTTCTAGGTTCTGAGAGCCACGTTGTCTATCCCTGGGCTTTGAAGTTAAACATCACACAGCTGTCTATA
 AACAAGATTTTAATATCTGTATAAATAGACCACAGAATTACCAAAACTGCAA

Endophilin B2 facilitates endosome maturation in response to growth factor
 stimulation, autophagy induction, and influenza A virus infection

J Biol Chem 292 (24), 10097-10111 (2017)

CTGCGCGCTCGGGCTGGCTCGGCGGCTGCGGCGGCGGGCAGGCGGGCAGGCCGGCAGGCGGGTGCAGGAGGGCTGGTG
 CCCCCGAGCAGGTGGGCGGGGTGCGGTTGGCGGCGGCGGCTGGGCCGGGGGCTGCCGGCTGCGCTCGGGCCGTGCGCGGC
 GGCCGTGCGGGCAGCCATGGACTTCAACATGAAGAAGCTGGCGTCGGACGCGGGCATCTTCTTACCCGGGCGGTGCAG
 TTCACGGAGGAGAAATTTGGCCAGGCTGAGAAGACTGAGCTTGATGCCACTTTGAAAACCTTCTGGCCCGGGCAGACAG
 CACCAAGAACTGGACAGAGAAGATCTTGAGGCAGACAGAGGTGCTGCTGCAGCCCAACCCAGTGCCCGAGTGGAGGAGT
 TCCTGTATGAGAAGCTGGACAGGAAGGTCCCCCTCAAGGGTCACCAACGGGGAGCTGCTGGCTCAGTACATGGCAGACGCG
 GCCAGTGAGCTGGGGCCGACCACCCCTATGGGAAGACACTGATCAAGGTGGCAGAAGCTGAAAAGCAACTGGGAGCCGC

GGAGAGGGATTTTATCCACACGGCCTCCATCAGCTTCTCACCCTTGCGCAACTTCTGGAGGGGGACTGGAAGACCA
TCTCGAAGGAGAGGGCGCTCCTCCAAAACCGCGTCTGGACTTGGATGCCTGCAAAGCGAGGCTGAAGAAGGCCAAGGCT
GCAGAAGCCAAAGCCACGACGGTGCCTGACTTTCAGGAGACTAGACCTCGTAATTACATTCTCTCGGCCAGCGCCTCCGC
GCTCTGGAATGATGAAGTGGACAAGGCCGAGCAGGAGCTCCGCGTGGCCCAGACAGAGTTTGACCGGCAAGCAGAAGTGA
CCCGTCTCTTGCTGGAGGGAATCAGTAGCACTCACGTGAACCACCTGCGCTGCCTCCACGAGTTTCGTCAAGTCTCAGACA
ACCTACTACGCACAGTGCTACCGCCACATGCTGGACTTGCAGAAGCAGCTGGGCAGATTTCCCGGCACCTTCGTGGGCAC
CACAGAGCCCCCTCCCCACCCCTGAGCAGCACCTCACCCACCACTGCTGCGGCCACTATGCCTGTGGTGGCCTCTGTGG
CCAGCCTGGCCCCCTCCGGGGGAGGCCTCGCTCTGCCTGGAAGAGGTGGCCCCCCTGCCAGTGGGACCCGCAAAGCTCGG
GTGCTCTATGACTACGAGGCAGCCGACAGCAGTGAGCTGGCCCTGCTGGCTGATGAGCTCATCACTGTCTACAGCCTGCC
TGGCATGGACCCTGACTGGCTCATTGGCGAGAGAGGCAACAAGAAGGGCAAGGTCCCTGTACCTACTTGGAACTGCTCA
GCTAGGCAGGTGCCCCATCCCCCGCATTCTGGCCTAGGCAGGAGAGGATGGGCGCAGCCCTGCCACTTAACCTGTTT
GTTGGTGACACAGTTGTTTCAAGTGGGAGAAATCACCCCATCTGTCCCTGCCCTAGTCACCTAGCTGTGAGGGTGCC
TGAGGCTGAATGGCTCCACCCCTCCCCAGCCCTGCTTCTGACCTGTGGCTCTGGAGCCCCCTGCCCTGCATCCCC
GAGCACCCACCTCCAGGCTCCACTAAGGAGGGAGGGGCTGTCTGCAGCAGCTGCACTCAGCACCTAGGCCAGGGTGGG
GCCGCCGAGATGGGCTCAGGAAGCCCCAGGTGCACTCAGCGAGAGCCCTGCCTTTCAGTTGCCAAAAGCTGCATCAGGG
GAATGCGGCAAGGCACACAGGGCTCTGGCAGCCCTGGGGACTGGGCGTGGCCCTGGGAGGGGAGAGCCTGGCCAGGGC
TGGTGTGGGGCCGAGCAGCATCTCCGGTGCTATCTCCCTCCACCCCTCACAGCTCAAGCCAAGTCCAGCGGCCG
CAGTCTTCACCTCTCCACACTCACTTTTTATCTGGTGTCTTTACTTCTGCCTGCGTTTGCTCTCTAGCCAATAAACCGTC
CTTGTGTGCGAGTCACTGGGCTCCTGTGAGGCCTGGCCCTGAGGGTGGTAAAGGGAAGGTAGACTCACCTCTGCCC
CACTCTTCCACAGAGTGAGCAGGGGCCCTGTGGCTGCCCGGGCCCCAGCTCTCTAGTTGGGAAGAAGTGCAGCCCTCCC
TGTCTTCTGCGGGCCTGTGCCTCTCAGAGGGCAGTGCTGTTCTGGACATGAAGCCGCACAAGGAACGTTTTATTCTTA
AGAAAAAGTTTCTAAATTTGGATTGTGGAGCGGACTGTAGAATGCGTCTGACAGTTCAGTTCAAGCACAAGAAGTGGGT
AGCGGTCAAGTGTCTGTCAGGTGCGGCGTTTACCCAGCATGTGCCCCGTGCCATGGGTTCTCATGCCGTCTCAGTG
TCCACATTTACAGATGAGATCAGCAAGACAGTCAGCTCCTCAAGGGACCACAGTTGGCAAGTGGCCAAGCAGGGACTGA
AGCCCAGGCAGCCTGATTCTAGAAACCCTAAGTGATGTCTGTGTTTTAGATGGCCCCTAGCAGGACCTAGCATTCTGACT
TCAGTCTGAGAAGGCCAACAGCCAGTAGGCCCACTGTTGGGGCTTCTGAAGAGGGGATCGGGGGATGACGGGGGCAGG
GGGCTATAAATAGGAAGGCACAGAGCTTCAAGAAAGGCTCACCCAGGGATGAGCTCAGCCCACTGGGCCAATGAAAGCAG
GGTCAAGGACAGGACCAGCGCAGGCCAAGGAAGGAATATCTGACAGCGCCCAACCAGCCAAACCCTCAGCCCAAGGACA
GGAATGAGGAGATGCTGGTGAAGTAGCCATCCATCAGTACCTGCCTTCCCCCGAGGTGCAGCCCCACTCCCAGGCGCCT
GGCCAGGGGAGTTTCTAGGTTCTGAGAGCCAGTTGTCTATCCCTGGGCTTTGAAGTTAAACATCACACAGCTGTCTATA
AACAAGATTTTAAATATCTGTATAAATAGACCACAGAATTACCAAAACTGCAAA

Endophilin B2 promotes inner mitochondrial membrane degradation by forming
heterodimers with Endophilin B1 during mitophagy
Sci Rep 6, 25153 (2016)

CTGCGCGCTCGGGCTGGCTCGGCGGCTGCGGCGGGCGGGCAGGCGGGCAGGCCGGCAGGCGGGTGC GCGGAGGGCTGGTG
CCCCGCAGCAGGTGGGCGGGGTGCGGTTGGCGGCGGGCGGCTGGGCCGGGGGCTGCCGGCTGCGCTCGGGCCGTGCGCGGC
GGCCGTGCGGGCACGCCATGGACTTCAACATGAAGAAGCTGGCGTGGACGCGGGCATCTTCTTACCCGGGCGGTGCAG
TTCACGGAGGAGAAATTTGGCCAGGCTGAGAAGACTGAGCTTGATGCCCACTTTGAAAACCTTCTGGCCCGGGCAGACAG
CACCAAGAACTGGACAGAGAAGATCTTGAGGCAGACAGAGGTGCTGCTGCAGCCCAACCCCACTGCCCCAGTGGAGGAGT
TCCTGTATGAGAAGCTGGACAGGAAGGTCCCCTCAAGGGTCAACACGGGGAGCTGCTGGCTCAGTACATGGCAGACGCG
GCCAGTGAGCTGGGGCCGACCACCCCTATGGGAAGACACTGATCAAGGTGGCAGAAGCTGAAAAGCAACTGGGAGCCGC
GGAGAGGGATTTTATCCACACGGCCTCCATCAGCTTCTCACCCTTGCGCAACTTCTGGAGGGGGACTGGAAGACCA
TCTCGAAGGAGAGGGCGCTCCTCCAAAACCGCGTCTGGACTTGGATGCCTGCAAAGCGAGGCTGAAGAAGGCCAAGGCT
GCAGAAGCCAAAGCCACGACGGTGCCTGACTTTCAGGAGACTAGACCTCGTAATTACATTCTCTCGGCCAGCGCCTCCGC
GCTCTGGAATGATGAAGTGGACAAGGCCGAGCAGGAGCTCCGCGTGGCCCAGACAGAGTTTGACCGGCAAGCAGAAGTGA
CCCGTCTCTTGCTGGAGGGAATCAGTAGCACTCACGTGAACCACCTGCGCTGCCTCCACGAGTTTCGTCAAGTCTCAGACA
ACCTACTACGCACAGTGCTACCGCCACATGCTGGACTTGCAGAAGCAGCTGGGCAGATTTCCCGGCACCTTCGTGGGCAC

CACAGAGCCCCGCTCCCCACCCCTGAGCAGCACCTACCCACCACTGCTGCGGCCACTATGCCTGTGGTGCCCTCTGTGG
CCAGCCTGGCCCTCCGGGGGAGGCCTCGCTCTGCCTGGAAGAGGTGGCCCCCCTGCCAGTGGGACCCGCAAAGCTCGG
GTGCTCTATGACTACGAGGCAGCCGACAGCAGTGAGCTGGCCCTGCTGGCTGATGAGCTCATCACTGTCTACAGCCTGCC
TGGCATGGACCCTGACTGGCTCATTGGCGAGAGAGGCAACAAGAAGGGCAAGGTCCCTGTACCTACTTGGAAGTGTCA
GCTAGGCAGGTGCCCCCATCCCCCGCATTTCTGGCCTAGGCAGGAGAGGATGGGCGCAGCCCTGCCACTTAACCTGTTT
GTTGGTGACACAGTTGTTTCAGAGTGGGGAGAATTACCCCCATTCTGTCCCTGCCCTAGTCACCTAGCTGTGAGGGTGCC
TGAGGCTGAATGGCTCCACCCCTCCCCAGCCCTGCTTCTGACCTGTGGCTCTGGAGCCCTGCCCTGCCTGCATCCCC
GAGCACCCACCCCTCCAGGCTCCACTAAGGAGGGAGGGGCTGTCTGCAGCAGCTGCACTCAGCACCTAGGCCAGGGTGGG
GCCGCCGAGATGGGCTCAGGAAGCCCCAGGTGCACTCAGCGAGAGCCCTGCCTTTCAGTTGCCAAAAGCTGCATCAGGG
GAATGCGGCAAGGCACACAGGGCTCTGGCAGCCCTGGGGACTGGGCGCTGCCCTGGGAGGGGAGAGCCTGGCCAGGGC
TGGTGTGGGGCCGAGCAGCATCTTCCGGTGCTATCCTCCCCTCCCACCCCTCACAGCTCAAGCCAAGTCCAGCGGCCG
CAGTCTTACCTCTCCACACTCACTTTTTATCTGGTGTTTTTACTTCTGCCTGCGTTTGCTCTCTAGCCAATAAACCGTC
CTTGTTGCGAGTCACTGGGCTCCTGTGAGGGCCTGGCCCTGAGGGTGGTAAAGGGAAAGGTAGACTCACCCCTGCCCC
CACTCTTCCACAGAGTGAGCAGGGGCCCTGTGGCTGCCCCGCGCCCCAGCTCTCTAGTTGGGAAGAAGTGCAGCCCTCCC
TGTCTTCTGCGGGCCTGTGCCTCTCAGAGGGCAGTGCTGTTCTGGACATGAAGCCGCACAAGGAACGTTTTATTCTTA
AGAAAAAGTTTCTAAATTTGGATTGTGGAGCGGACTGTAGAATGCGTCTGACAGTTCAGTTCAAGCACAAGAAGTGGGT
AGCGGTCACTGTCTGTGAGGTGCGGCGTTTACCCAGCATGTGCCCCCGTGCCATGGGTTCTCATGCCGTCTCAGTG
TCCACATTTACAGATGAGATCAGCAAGACAGTCAGCTCCTCAAGGGACCACAGTTGGCAAGTGGCCAAGCAGGGACTGA
AGCCCAGGCAGCCTGATTCTAGAAACCCTAAGTGATGTCTGTGTTTTAGATGGCCCTAGCAGGACCTAGCATTCTGACT
TCAGTCTGAGAAGGCCAACAGCCAGTAGGCCCACTGTTGGGGCTTCTGAAGAGGGGATCGGGGGATGACGGGGGCACG
GGGCTATAAATAGGAAGGCACAGAGCTTCAAGAAAGGCTCACCCAGGGATGAGCTCAGCCCACTGGGCCAATGAAAGCAG
GGTCAAGGACAGGACCAGCGCAGGCCAAGGAAGGAATATCTGACAGCGCCCAACCAGCCAAACCCTCAGCCCAAGGACA
GGAATGAGGAGATGTGGTGAAGTAGCCATCCATCAGTACCTGCCTTCCCCGAGGCTGCAGCCCCACTCCCAGGCGCCT
GGCCAGGGGAGTTTCTAGGTTCTGAGAGCCAGTTGTATCCCTGGGCTTTGAAGTTAAACATCACACAGCTGTCTATA
AACAGATTTTAAATATCTGTATAAATAGACCACAGAATTACCAAACTGCAAA

An inter-species protein-protein interaction network across vast evolutionary distance

Mol Syst Biol 12 (4), 865 (2016)

CTGCGCGCTCGGGCTGGCTCGGCGGCTGCGGCGGGCGGGCAGGCGGGCAGGCCGGCAGGCGGGTGCGCGGAGGGCTGGTG
CCCCGCAGCAGGTGGGCGGGGTGCGGTTGGCGGCGGCGCTGGGCCGGGGCTGCCGGCTGCGCTCGGGCCGTGCGCGGC
GGCCGTGCGGGCAGCCATGGACTTCAACATGAAGAAGCTGGCGTGGACGCGGGCATCTTCTTACCCGGGCGGTGCAG
TTCACGGAGGAGAAATTTGGCCAGGCTGAGAAGACTGAGCTTGATGCCCACTTTGAAAACCTTCTGGCCCGGGCAGACAG
CACCAAGAACTGGACAGAGAAGATCTTGAGGCAGACAGAGGTGCTGCTGCAGCCCAACCCAGTGCCCGAGTGGAGGAGT
TCCTGTATGAGAAGCTGGACAGGAAGTCCCCTCAAGGGTCACCAACGGGGAGCTGCTGGCTCAGTACATGGCAGACGCG
GCCAGTGAGCTGGGGCCGACCACCCCTATGGGAAGACACTGATCAAGGTGGCAGAAGCTGAAAAGCAACTGGGAGCCGC
GGAGAGGGATTTTATCCACACGGCCTCCATCAGCTTCTCTCACACCCTTGCGCAACTTCTTGGAGGGGGACTGGAAGACCA
TCTCGAAGGAGAGGCGGCTCCTCCAAAACCGGCTCTGGACTTGATGCCTGCAAAGCGAGGCTGAAGAAGGCCAAGGCT
GCAGAAGCCAAAGCCACGACGGTGCTGACTTTCAGGAGACTAGACCTCGTAATTACATTCTCTCGGCCAGCGCTCCGC
GCTCTGGAATGATGAAGTGACAAGGCCGAGCAGGAGCTCCGCGTGGCCCAGACAGAGTTTGACCGGCAAGCAGAAGTGA
CCCGTCTCTTGCTGGAGGGAATCAGTAGCACTCACGTGAACCACCTGCGCTGCCTCCACGAGTTTCGTCAAGTCTCAGACA
ACCTACTACGCACAGTGCTACCGCCACATGCTGGACTTGACAGAAGCAGCTGGGCAGATTTCCCGGCACCTTCGTGGGCAC
CACAGAGCCCGCTCCCCACCCCTGAGCAGCACCTACCCACCACTGCTGCGGCCACTATGCCTGTGGTGCCCTCTGTGG
CCAGCCTGGCCCTCCGGGGGAGGCCTCGCTCTGCCTGGAAGAGGTGGCCCCCCTGCCAGTGGGACCCGCAAAGCTCGG
GTGCTCTATGACTACGAGGCAGCCGACAGCAGTGAGCTGGCCCTGCTGGCTGATGAGCTCATCACTGTCTACAGCCTGCC
TGGCATGGACCCTGACTGGCTCATTGGCGAGAGAGGCAACAAGAAGGGCAAGGTCCCTGTACCTACTTGGAAGTGTCTCA
GCTAGGCAGGTGCCCCCATCCCCCGCATTTCTGGCCTAGGCAGGAGAGGATGGGCGCAGCCCTGCCACTTAACCTGTTT
GTTGGTGACACAGTTGTTTCAGAGTGGGGAGAATTACCCCCATTCTGTCCCTGCCCTAGTCACCTAGCTGTGAGGGTGCC

TGAGGCTGAATGGCTCCACCCCTCCCCAGCCCTGCTTCTGACCTGTGGCTCTGGAGCCCTGCCCCTGCCTGCATCCCC
GAGCACCCACCCCTCCAGGCTCCACTAAGGAGGGAGGGGCTGTCTGCAGCAGCTGCACTCAGCACCTAGGCCAGGGTGGG
GCCGCCGAGATGGGCTCAGGAAGCCCCAGGTGCACTCAGCGAGAGCCCTGCCTTTCAGTTGCCAAAAGCTGCATCAGGG
GAATGCGGCAAGGCACACAGGGCTCTGGCAGCCCTGGGGACTGGGCGCTGCCCTGGGAGGGGAGAGCCTGGCCAGGGC
TGGTGTGGGGCCGAGCAGCATCTTCCGGTGCTATCCTCCCCTCCCACCCCTCACAGCTCAAGCCAAGTCCAGCGGCCG
CAGTCTTCACCTCTCCACACTCACTTTTTATCTGGTGTCTTTACTTCTGCCTGCGTTTGCTCTCTAGCCAATAAACCGTC
CTTGTGTGCGAGTCACCTGGGCTCCTGTCAGGGCCTGGCCCTGAGGGTGGTAAAGGGAAAGGTAGACTCACCTCTGCCC
CACTCTTCCACAGAGTGAGCAGGGGCCCTGTGGCTGCCCGGCCCCAGCTCTCTAGTTGGGAAGAAGTGCAGCCCTCCC
TGTCTTCTGCGGGGCTGTGCCTCTCAGAGGGCAGTGCTGTTCTGGACATGAAGCCGCACAAGGAACGTTTTATTCTTA
AGAAAAAGTTTCCTAAATTTGGATTGTGGAGCGGACTGTAGAATGCGTCTGACAGTTCAGTTCAAGCACAAGAAGTGGGT
AGCGGTCAAGTGTCTGTCAGGTGCGGCGTTTACCCAGCATGTGCCCCCGTGCCATGGGTTCTCATGCCGTCTCAGTG
TCCACATTTACAGATGAGATCAGCAAGACAGTCAGCTCCTCAAGGGACCACAGTTGGCAAGTGGCCAAGCAGGGAAGTGA
AGCCCAGGCAGCCTGATTCTAGAAACCCTAAGTGATGTCTGTGTTTTAGATGGCCCTAGCAGGACCTAGCATTCTGACT
TCAGTCTGTAGAAGGCCAACAGCCAGTAGGCCCACTGTTGGGGCTTCTGAAGAGGGGATCGGGGGATGACGGGGGCAG
GGGCTATAAATAGGAAGGCACAGAGCTTCAAGAAAGGCTCACCCAGGGATGAGCTCAGCCCACTGGGCCAATGAAAGCAG
GGTCAAGGACAGGACCAGCGCAGGCCAAGGAAGGAATATCTGACAGCGCCACCCAGCCAAACCCTCAGCCCAAGGACA
GGAATGAGGAGATGCTGGTGAAGTACCATCCATCAGTACCTGCCTTCCCCGAGGCTGCAGCCCCACTCCAGGCGCCT
GGCCAGGGGAGTTTTCTAGGTTCTGAGAGCCACGTTGTCTATCCCTGGGCTTTGAAGTTAAACATCACACAGCTGTCTATA
AACAAGATTTTAATATCTGTATAAATAGACCACAGAATTACCAAAACTGCAAA

Pooled-matrix protein interaction screens using Barcode Fusion Genetics
Mol Syst Biol 12 (4), 863 (2016)

CTGCGCGCTCGGGCTGGCTCGGCGGCTGCGGCGGGCGGGCAGGCGGGCAGGCCGGCAGGCGGGTGC GCGGAGGGCTGGTG
CCCCGCAGCAGGTGGGCGGGGTGCGGTTGGCGGCGGCGGCTGGGCCGGGGCTGCCGCTGCGCTCGGGCCGTGCGCGGC
GGCCGTGCGGGCAGCCATGGACTTCAACATGAAGAAGCTGGCGTCGGACGCGGGCATCTTCTTACCCGGGCGGTGCAG
TTCACGGAGGAGAAATTTGGCCAGGCTGAGAAGACTGAGCTTGATGCCCCTTTGAAAACCTTCTGGCCCGGGCAGACAG
CACCAAGAACTGGACAGAGAAGATCTTGAGGCAGACAGAGGTGCTGCTGCAGCCCAACCCAGTGCCGAGTGGAGGAGT
TCCTGTATGAGAAGCTGGACAGGAAGTCCCCTCAAGGGTCACCAACGGGGAGCTGCTGGCTCAGTACATGGCAGACGCG
GCCAGTGAGCTGGGGCCGACCACCCCTATGGGAAGACACTGATCAAGGTGGCAGAAGCTGAAAAGCAACTGGGAGCCGC
GGAGAGGGATTTATCCACACGGCTCCATCAGCTTCTCACACCCTTGCGCAACTTCTGGAGGGGGACTGGAAGACCA
TCTCGAAGGAGAGGCGGCTCCTCCAAAACCGCGTCTGGACTTGATGCCTGCAAAGCGAGGCTGAAGAAGGCCAAGGCT
GCAGAAGCCAAAGCCACGAGGTGCCTGACTTTCAGGAGACTAGACCTCGTAATTACATTCTCTCGGCCAGCGCTCCGC
GCTCTGGAATGATGAAGTGACAAGGCCGAGCAGGAGCTCCGCGTGGCCCAGACAGAGTTTGACCGGCAAGCAGAAGTGA
CCCGTCTCTTGCTGGAGGGAATCAGTAGCACTCAGTGAACCACCTGCGCTGCCTCCACGAGTTCGTCAAGTCTCAGACA
ACCTACTACGCACAGTGCTACCGCCACATGCTGGACTTGCAAGAAGCAGCTGGGCAGATTTCCCGGCACCTTCGTGGGCAC
CACAGAGCCCGCTCCCCACCCCTGAGCAGCACTCACCCACCACTGCTGCGGCCACTATGCCTGTGGTGCCCTCTGTGG
CCAGCCTGGCCCTCCGGGGGAGGCCTCGCTCTGCCTGGAAGAGGTGGCCCCCTGCCAGTGGGACCCGCAAAGCTCGG
GTGCTCTATGACTACGAGGCAGCCGACAGCAGTGAGCTGGCCCTGCTGGCTGATGAGCTCATCACTGTCTACAGCCTGCC
TGGCATGGACCCTGACTGGCTCATTGGCGAGAGAGGCAACAAGAAGGGCAAGGTCCCTGTACCTACTTGGAAGTGTCA
GCTAGGCAGGTGCCCCATCCCCCGCATTTCTGGCCTAGGCAGGAGAGGATGGGCGCAGCCCTGCCACTTAACTTGT
GTTGGTGACACAGTTGTTTCAGAGTGGGGAGAATTCACCCCATTTCTGTCCCTGCCCTAGTCACCTAGCTGTGAGGGTGCC
TGAGGCTGAATGGCTCCACCCCTCCCCAGCCCTGCTTCTGACCTGTGGCTCTGGAGCCCTGCCCCTGCCTGCATCCCC
GAGCACCCACCCCTCCAGGCTCCACTAAGGAGGGAGGGGCTGTCTGCAGCAGCTGCACTCAGCACCTAGGCCAGGGTGGG
GCCGCCGAGATGGGCTCAGGAAGCCCCAGGTGCACTCAGCGAGAGCCCTGCCTTTCAGTTGCCAAAAGCTGCATCAGGG
GAATGCGGCAAGGCACACAGGGCTCTGGCAGCCCTGGGGACTGGGCGCTGCCCTGGGAGGGGAGAGCCTGGCCAGGGC
TGGTGTGGGGCCGAGCAGCATCTTCCGGTGCTATCCTCCCCTCCCACCCCTCACAGCTCAAGCCAAGTCCAGCGGCCG
CAGTCTTCACCTCTCCACACTCACTTTTTATCTGGTGTCTTTACTTCTGCCTGCGTTTGCTCTCTAGCCAATAAACCGTC
CTTGTGTGCGAGTCACCTGGGCTCCTGTCAGGGCCTGGCCCTGAGGGTGGTAAAGGGAAAGGTAGACTCACCTCTGCCC

CACTCTTCCACAGAGTGAGCAGGGGCCCTGTGGCTGCCCCGGCCCCAGCTCTCTAGTTGGGAAGAAGTGCAGCCCTCCC
TGTCTTCTGCGGGGCTGTGCCTCTCAGAGGGCAGTGCTGTTCTGGACATGAAGCCGCACAAGGAACGTTTTATTCTTA
AGAAAAAGTTTCTAAATTTGGATTGTGGAGCGGACTGTAGAATGCGTCTGACAGTTCAGTTCAAGCACAAGAAGTGGGT
AGCGGTCAGTGCTGTCTGCAGGTCGGGCGTTTACCCAGCATGTGCCCCCGTGCCATGGGTTCTCATGCCGTCCTCAGTG
TCCACATTTTACAGATGAGATCAGCAAGACAGTCAGCTCCTCAAGGGACCACAGTTGGCAAGTGGCCAAGCAGGGACTGA
AGCCCAGGCAGCCTGATTCTAGAAACCCTAAGTGATGTCTGTGTTTTAGATGGCCCCTAGCAGGACCTAGCATTCTGACT
TCAGTCCTGAGAAGGCCAACAGCCAGTAGGCCCCACTGTTGGGGCTTCTGAAGAGGGGATCGGGGGATGACGGGGGCACG
GGGCTATAAATAGGAAGGCACAGAGCTTCAAGAAAGGCTCAGGAGGATGAGCTCAGCCCACTGGGCCAATGAAAGCAG
GGTCAAGGACAGGACCAGCGCAGGCCAAGGAAGGAATATCTGACAGCGCCACCCAGCCAAACCCTCAGCCCAAGGACA
GGAATGAGGAGATGCTGGTGAAGTACCATCCATCAGTACCTGCCTTCCCCGAGGCTGCAGCCCCACTCCAGGCGCCT
GGCCAGGGGAGTTTTCTAGGTTCTGAGAGCCAGTTGTCTATCCCTGGGCTTTGAAGTTAAACATCACACAGCTGTCTATA
AACAAGATTTTAAATATCTGTATAAATAGACCACAGAATTACCAAAACTGCAAA

Network organization of the human autophagy system

Nature 466 (7302), 68-76 (2010)

CTGCGCGCTCGGGCTGGCTCGGCGGCTGCGGCGGGCGGGCAGGCGGGCAGGCCGGCAGGCGGGTGC GCGGAGGGCTGGTG
CCCCGCAGCAGGTGGGCGGGGTGCGGTTGGCGGCGGGCTGGGCCGGGGGCTGCCGGCTGCGCTCGGGCCGTGCGCGGC
GGCCGTGCGGGCACGCCATGGACTTCAACATGAAGAAGCTGGCGTCGGACGCGGGCATCTTCTTACCCGGGCGGTGCAG
TTCACGGAGGAGAAATTTGGCCAGGCTGAGAAGACTGAGCTTGATGCCCACCTTGAACCTTCTGGCCCGGCAGACAG
CACCAAGAACTGGACAGAGAAGATCTTGAGGCAGACAGAGGTGCTGCTGCAGCCCAACCCAGTGCCGAGTGGAGGAGT
TCCTGTATGAGAAGCTGGACAGGAAGGTCCCCTCAAGGGTCACCAACGGGGAGCTGCTGGCTCAGTACATGGCAGACGCG
GCCAGTGAGCTGGGGCCGACCACCCCTATGGGAAGACACTGATCAAGGTGGCAGAAGCTGAAAAGCAACTGGGAGCCGC
GGAGAGGGATTTTATCCACACGGCTCCATCAGTTCTCTACACCCTTGCGCAACTTCTGGAGGGGGACTGGAAGACCA
TCTCGAAGGAGAGGCGGCTCCTCCAAAACCGGCTCTGGACTTGATGCCTGCAAAGCGAGGCTGAAGAAGGCCAAGGCT
GCAGAAGCCAAAGCCACGACGGTGCCTGACTTTCAGGAGACTAGACCTCGTAATTACATTCTCTCGGCCAGCGCTCCGC
GCTCTGGAATGATGAAGTGGACAAGGCCGAGCAGGAGCTCCGCGTGGCCCAGACAGAGTTTGACCGGCAAGCAGAAGTGA
CCCGTCTCTTGCTGGAGGGAATCAGTAGCACTCACGTGAACCACCTGCGCTGCCTCCACGAGTTCTGTAAGTCTCAGACA
ACCTACTACGCACAGTGCTACCGCCACATGCTGGACTTGACAGAAGCAGCTGGGCAGATTTCCCGGCACCTTCGTGGGCAC
CACAGAGCCCGCTCCCCACCCCTGAGCAGCACCTCACCCACCACTGCTGCGGCCACTATGCCTGTGGTGCCCTCTGTGG
CCAGCCTGGCCCTCCGGGGGAGGCCTCGCTCTGCCTGGAAGAGGTGGCCCCCTGCCAGTGGGACCCGCAAAGCTCGG
GTGCTCTATGACTACGAGGCAGCCGACAGCAGTGAGCTGGCCCTGCTGGCTGATGAGCTCATCACTGTCTACAGCCTGCC
TGGCATGGACCCTGACTGGCTCATTGGCGAGAGAGGCAACAAGAAGGGCAAGGTCCCTGTACCTACTTGGAAGTGTCTCA
GCTAGGCAGGTGCCCCCATCCCCCGCATTCTGGCCTAGGCAGGAGAGGATGGGCGCAGCCCTGCCACTTAACCTTGTTT
GTTGGTGACACAGTTGTTTCAAGTGGGGAGAATTCACCCATTCTGTCCCTGCCCTAGTCACCTAGCTGTGAGGTGCC
TGAGGCTGAATGGCTCCACCCCTCCCCAGCCCTGCTTCTGACCTGTGGCTCTGGAGCCCTGCCCTGCCTGCATCCCC
GAGCACCCACCCCTCCAGGCTCCACTAAGGAGGGAGGGGCTGTCTGCAGCAGCTGCACTCAGCACCTAGGCCAGGGTGGG
GCCGCCGCAGATGGGCTCAGGAAGCCCCAGGTGCACTCAGCGAGAGCCCTGCCTTTCAGTTGCCAAAAGCTGCATCAGGG
GAATGCGGCAAGGCACACAGGGCTCTGGCAGCCCTGGGGACTGGGCGTGGCCCTGGGAGGGGAGAGCCTGGCCAGGGC
TGGTGTGGGGCCGAGCAGCATCTTCCGGTGCTATCCTCCCCTCCACCCCTCACAGCTCAAGCCAAGTCCAGCGGCCG
CAGTCTTACCTCTCCACACTCACTTTTTATCTGGTGTCTTACTTCTGCCTGCGTTTGCTCTCTAGCCAATAAACCGTC
CTTGTGTGCGAGTCACCTGGGCTCCTGTGAGGGCTGGCCCTGAGGGTGGTAAAGGGAAAGGTAGACTCACCTCTGCCC
CACTCTTCCACAGAGTGAGCAGGGGCCCTGTGGCTGCCCCGGCCCCAGCTCTCTAGTTGGGAAGAAGTGCAGCCCTCCC
TGTCTTCTGCGGGGCTGTGCCTCTCAGAGGGCAGTGCTGTTCTGGACATGAAGCCGCACAAGGAACGTTTTATTCTTA
AGAAAAAGTTTCTAAATTTGGATTGTGGAGCGGACTGTAGAATGCGTCTGACAGTTCAGTTCAAGCACAAGAAGTGGGT
AGCGGTCAGTGCTGTCTGCAGGTCGGGCGTTTACCCAGCATGTGCCCCCGTGCCATGGGTTCTCATGCCGTCCTCAGTG
TCCACATTTTACAGATGAGATCAGCAAGACAGTCAGCTCCTCAAGGGACCACAGTTGGCAAGTGGCCAAGCAGGGACTGA
AGCCCAGGCAGCCTGATTCTAGAAACCCTAAGTGATGTCTGTGTTTTAGATGGCCCCTAGCAGGACCTAGCATTCTGACT
TCAGTCCTGAGAAGGCCAACAGCCAGTAGGCCCCACTGTTGGGGCTTCTGAAGAGGGGATCGGGGGATGACGGGGGCACG

GGGCTATAAATAGGAAGGCACAGAGCTTCAAGAAAGGCTCACCCAGGGATGAGCTCAGCCCACTGGGCCAATGAAAGCAG
GGTCAAGGACAGGACCAGCGCAGGCCAAGGAAGGAATATCTGACAGCGCCCACCCAGCCAAACCCTCAGCCCAAGGACA
GGAATGAGGAGATGCTGGTGAAGTAGCCATCCATCAGTACCTGCCTTCCCCGAGGCTGCAGCCCCACTCCCAGGCGCCT
GGCCAGGGGAGTTTCTAGGTTCTGAGAGCCACGTTGTATCCCTGGGCTTTGAAGTTAAACATCACACAGCTGTCTATA
AACAAGATTTTAATATCTGTATAAATAGACCACAGAATTACCAAAACTGCAAA

SPAS-1 (stimulator of prostatic adenocarcinoma-specific T cells)/SH3GLB2: A
prostate tumor antigen identified by CTLA-4 blockade
Proc Natl Acad Sci U S A 105 (9), 3509-3514 (2008)

CTGCGCGCTCGGGCTGGCTCGGCGGCTGCGGCGGGCGGGCAGGCGGGCAGGCCGGCAGGCGGGTGCGCGAGGGCTGGTG
CCCCGCAGCAGGTGGGCGGGGTGCGTTGGCGGCGGCGCTGGGCCGGGGGCTGCCGGCTGCGCTCGGGCCGTGCGCGGC
GGCCGTGCGGGCACGCCATGGACTTCAACATGAAGAAGCTGGCGTCGGACGCGGGCATCTTCTTACCCGGGCGGTGCAG
TTCACGGAGGAGAAAATTTGGCCAGGCTGAGAAGACTGAGCTTGATGCCCACCTTGAAAACTTCTGGCCCCGGGCAGACAG
CACCAAGAACTGGACAGAGAAGATCTTGAGGCAGACAGAGGTGCTGCTGCAGCCCAACCCCAAGTGCCCGAGTGAGGAGT
TCCTGTATGAGAAGCTGGACAGGAAGGTCCCCTCAAGGGTCACCAACGGGGAGCTGCTGGCTCAGTACATGGCAGACGCG
GCCAGTGAGCTGGGGCCGACCACCCCTATGGGAAGACACTGATCAAGGTGGCAGAAGCTGAAAAGCAACTGGGAGCCGC
GGAGAGGGATTTTATCCACACGGCCTCCATCAGCTTCTCACACCCTTGCGCAACTTCTGGAGGGGGACTGGAAGACCA
TCTCGAAGGAGAGGCGGCTCCTCCAAAACCGGCTCTGGACTTGATGCCTGCAAAGCGAGGCTGAAGAAGGCCAAGGCT
GCAGAAGCCAAAGCCACGACGGTGCTGACTTTCAGGAGACTAGACCTCGTAATTACATTCTCTCGGCCAGCGCCTCCGC
GCTCTGGAATGATGAAGTGGACAAGGCCGAGCAGGAGCTCCGCGTGCGCCAGACAGAGTTTGACCGGCAAGCAGAAGTGA
CCCGTCTCTTGCTGGAGGGAATCAGTAGCACTCACGTGAACCACCTGCGCTGCCTCCACGAGTTTCGTCAAGTCTCAGACA
ACCTACTACGCACAGTGCTACCGCCACATGCTGGACTTGACAGAAGCAGCTGGGCAGATTTCCCGGCACCTTCGTGGGCAC
CACAGAGCCCGCTCCCCACCCCTGAGCAGACCTCACCCACCACTGCTGCGGCCACTATGCCTGTGGTGCCCTCTGTGG
CCAGCCTGGCCCTCCGGGGGAGGCCTCGCTCTGCCTGGAAGAGGTGGCCCCCTGCCAGTGGGACCCGCAAAGCTCGG
GTGCTCTATGACTACGAGGCAGCCGACAGCAGTGAGCTGGCCCTGCTGGCTGATGAGCTCATCACTGTCTACAGCCTGCC
TGGCATGGACCCTGACTGGCTCATTGGCGAGAGAGGCAACAAGAAGGGCAAGTCCCTGTACCTACTTGGAAGTGTCTA
GCTAGGCAGGTGCCCCCATCCCCCGCATTCTGGCCTAGGCAGGAGAGGATGGGCGCAGCCCTGCCACTTAACCTGTTT
GTTGGTGACACAGTTGTTTCAGAGTGGGAGAAATCACCCCATCTGTCCCTGCCCCTAGTCACCTAGCTGTGAGGGTGCC
TGAGGCTGAATGGCTCCACCCCTCCCCAGCCCTGCTTCTGACCTGTGGCTCTGGAGCCCTGCCCTGCATCCCC
GAGCACCCACCCCTCCAGGCTCCACTAAGGAGGGAGGGGCTGTCTGCAGCAGCTGCACTCAGCACCTAGGCCAGGGTGGG
GCCGCCGAGATGGGCTCAGGAAGCCCCAGGTGCACTCAGCGAGAGCCCTGCCTTTCAGTTGCCAAAAGCTGCATCAGGG
GAATGCGGCAAGGCACACAGGGCTCTGGCAGCCCTGGGGACTGGGCGCTGCCCTGGGAGGGGAGAGCCTGGCCAGGGC
TGGTGTGGGGCCGGAGCAGCATCTTCCGCTGTATCCTCCCCCTCCACCCCTCACAGCTCAAGCCAAGTCCAGCGGCCG
CAGTCTTACCTCTCCACACTCACTTTTTATCTGGTGTCTTTACTTCTGCCTGCGTTTGCTCTCTAGCCAATAAACCGTC
CTTGTGTGCGAGTCACCTGGGCTCCTGTGAGGCCTGGCCCTGAGGGTGGTAAAGGGAAAGGTAGACTCACCTCTGCCC
CACTCTTCCACAGAGTGAGCAGGGGCCCTGTGGCTGCCCCGGCCCCAGCTCTCTAGTTGGGAAGAAGTGCAGCCCTCCC
TGTCTTCTGCGGGGCTGTGCCTCTCAGAGGGCAGTGCTGTTCTGGACATGAAGCCGCACAAGGAACGTTTTATTCTTA
AGAAAAAGTTTCTAAATTTGGATTGTGGAGCGGACTGTAGAATGCGTCTGACAGTTCAGTTCAAGCACAGAAGTGGGT
AGCGGTCAGTGCTGTCTGCAGGTGCGGCGTTTACCCAGCATGTGCCCCGTGCCATGGGTTCTCATGCCGTCTCAGTG
TCCACATTTTACAGATGAGATCAGCAAGACAGTCAGCTCCTCAAGGGACCACAGTTGGCAAGTGGCCAAGCAGGGACTGA
AGCCAGGCAGCCTGATTCTAGAAACCCTAAGTGATGTCTGTGTTTTAGATGGCCCCTAGCAGGACCTAGCATTCTGACT
TCAGTCTGAGAAGGCCAACAGCCAGTAGGCCCACTGTTGGGGCTTCTGAAGAGGGGATCGGGGGATGACGGGGGCACG
GGGCTATAAATAGGAAGGCACAGAGCTTCAAGAAAGGCTCACCCAGGGATGAGCTCAGCCCACTGGGCCAATGAAAGCAG
GGTCAAGGACAGGACCAGCGCAGGCCAAGGAAGGAATATCTGACAGCGCCCACCCAGCCAAACCCTCAGCCCAAGGACA
GGAATGAGGAGATGCTGGTGAAGTAGCCATCCATCAGTACCTGCCTTCCCCGAGGCTGCAGCCCCACTCCCAGGCGCCT
GGCCAGGGGAGTTTCTAGGTTCTGAGAGCCACGTTGTATCCCTGGGCTTTGAAGTTAAACATCACACAGCTGTCTATA
AACAAGATTTTAATATCTGTATAAATAGACCACAGAATTACCAAAACTGCAAA

RRIG1 mediates effects of retinoic acid receptor beta2 on tumor cell growth and gene expression through binding to and inhibition of RhoA
Cancer Res 66 (14), 7111-7118 (2006)

CTGCGCGCTCGGGCTGGCTCGGCGGCTGCGGCGGGCGGGCAGGCGGGCAGGCCGGCAGGCGGGTGCGCGGAGGGCTGGTG
CCCCGCAGCAGGTGGGCGGGGTGCGGTTGGCGGCGGCGGCTGGGCCGGGGGCTGCCGGCTGCGCTCGGGCCGTGCGCGGC
GGCCGTGCGGGCAGCCATGGACTTCAACATGAAGAAGCTGGCGTCGGACGCGGGCATCTTCTTCACCCGGGCGGTGCAG
TTCACGGAGGAGAAATTTGGCCAGGCTGAGAAGACTGAGCTTGATGCCACTTTGAAAACCTTCTGGCCCGGGCAGACAG
CACCAAGAACTGGACAGAGAAGATCTTGAGGCAGACAGAGGTGCTGCTGCAGCCCAACCCAGTGCCCGAGTGGAGGAGT
TCCTGTATGAGAAGCTGGACAGGAAGGTCCCCCTCAAGGGTCACCAACGGGGAGCTGCTGGCTCAGTACATGGCAGACGCG
GCCAGTGAGCTGGGGCCGACCACCCCTATGGGAAGACACTGATCAAGGTGGCAGAAGCTGAAAAGCAACTGGGAGCCGC
GGAGAGGGATTTTATCCACACGGCCTCCATCAGCTTCCTCACACCCTTGCGCAACTTCCTGGAGGGGGACTGGAAGACCA
TCTCGAAGGAGAGGCGGCTCCTCCAAAACCGCGTCTGGACTTGATGCCTGCAAAGCGAGGCTGAAGAAGGCCAAGGCT
GCAGAAGCCAAAGCCACGACGGTGCCTGACTTTCAGGAGACTAGACCTCGTAATTACATTCTCTCGGCCAGCGCCTCCGC
GCTCTGGAATGATGAAGTGGACAAGGCCGAGCAGGAGCTCCGCGTGGCCCAGACAGAGTTTGACCGGCAAGCAGAAGTGA
CCCGTCTCTTGCTGGAGGGAATCAGTAGCACTCAGTGAACCACCTGCGCTGCCTCCACGAGTTTCGTCAAGTCTCAGACA
ACCTACTACGCACAGTGCTACCGCCACATGCTGGACTTGCGAGAAGCAGCTGGGCAGATTTCCCGGCACCTTCGTGGGCAC
CACAGAGCCCGCTCCCCACCCCTGAGCAGCACCTCACCCACCACTGCTGCGGCCACTATGCCTGTGGTGCCCTCTGTGG
CCAGCCTGGCCCCCTCCGGGGGAGGCCTCGCTCTGCCTGGAAGAGGTGGCCCCCTGCCAGTGGGACCCGCAAAGCTCGG
GTGCTCTATGACTACGAGGCAGCCGACAGCAGTGAGCTGGCCCTGCTGGCTGATGAGCTCATCACTGTCTACAGCCTGCC
TGGCATGGACCCTGACTGGCTCATTTGGCGAGAGAGGCAACAAGAAGGGCAAGGTCCCTGTACCTACTTGGAAGTGTCA
GCTAGGCAGGTGCCCCCATCCCCCGCATTTCTGGCCTAGGCAGGAGAGGATGGGCGCAGCCCTGCCACTTAACCTTGTTT
GTTGGTGACACAGTTGTTTCAGAGTGGGGAGAATTCACCCCATTTCTGTCCCTGCCCCCTAGTCACCTAGCTGTGAGGGTGCC
TGAGGCTGAATGGCTCCACCCCTCCCCAGCCCTGCTTCTGACCTGTGGCTCTGGAGCCCTGCCCCCTGCCTGCATCCCC
GAGCACCCACCCCTCCAGGCTCCACTAAGGAGGGAGGGGCTGTCTGCAGCAGCTGCACTCAGCACCTAGGCCAGGGTGGG
GCCGCCGCAGATGGGCTCAGGAAGCCCCAGGTGCACTCAGCGAGAGCCCTGCCTTTCAGTTGCCAAAAGCTGCATCAGGG
GAATGCGGCAAGGCACACAGGGCTCTGGCAGCCCTGGGGACTGGGCGCTGCCCTGGGAGGGGAGAGCCTGGCCAGGGC
TGGTGTGGGGCCGAGCAGCATCTTCCGTGCTATCCTCCCCTCCCACCCCTCACAGCTCAAGCCAAGTCCAGCGCCG
CAGTCTTACCCTCTCCACACTCACTTTTTATCTGGTGTTTTTACTTCTGCCTGCGTTTGCTCTCTAGCCAATAAACCGTC
CTTGTGTGCGAGTCACTGGGCTCCTGTCAGGGCCTGGCCCTGAGGGTGGTAAAGGGAAAGGTAGACTCACCCCTTGCCC
CACTCTTCCACAGAGTGAGCAGGGGGCCCTGTGGCTGCCCGGGCCCCAGCTCTCTAGTTGGGAAGAAGTGCAGCCCTCCC
TGTCTTCTGCGGGCCTGTGCCTCTCAGAGGGCAGTGCTGTTCTGGACATGAAGCCGCACAAGGAACGTTTTATTCTTA
AGAAAAAGTTTCTAAATTTGGATTGTGGAGCGGACTGTAGAATGCGTCTGACAGTTCAAGTCAAGACAAGAAGTGGGT
AGCGGTCAAGTGTCTGTCAGGTGCGGCGTTTACCCAGCATGTGCCCCCGTGCCATGGGTTCTCATGCCGTCTCAGTG
TCCACATTTACAGATGAGATCAGCAAGACAGTCAGCTCCTCAAGGGACCACAGTTGGCAAGTGGCCAAGCAGGGACTGA
AGCCCAGGCAGCCTGATTCTAGAAACCCTAAGTGATGTCTGTGTTTTAGATGGCCCTAGCAGGACCTAGCATTCTGACT
TCAGTCTGAGAAGGCCAACAGCCAGTAGGCCCACTGTTGGGGCTTCTGAAGAGGGGATCGGGGGATGACGGGGGCACG
GGGCTATAAATAGGAAGGCACAGAGCTTCAAGAAAGGCTCACCCAGGGATGAGCTCAGCCCACTGGGCCAATGAAAGCAG
GGTCAAGGACAGGACCAGCGCAGGCCAAGGAAGGAATATCTGACAGCGCCACCCAGCCAAACCCTCAGCCCAAGGACA
GGAATGAGGAGATGCTGGTGAAGTACCATCCATCAGTACCTGCCTTCCCCGAGGCTGCAGCCCCACTCCAGGCGCCT
GGCCAGGGGAGTTTTCTAGGTTCTGAGAGCCACGTTGTCTATCCCTGGGCTTTGAAGTTAAACATCACACAGCTGTCTATA
AACAAGATTTTAATATCTGTATAAATAGACCACAGAATTACCAAACTGCAAA

Regulation of alternative splicing by SRrp86 and its interacting proteins
Mol Cell Biol 23 (21), 7437-7447 (2003)

CTGCGCGCTCGGGCTGGCTCGGCGGCTGCGGCGGGCGGGCAGGCGGGCAGGCCGGCAGGCGGGTGCGCGGAGGGCTGGTG
CCCCGCAGCAGGTGGGCGGGGTGCGGTTGGCGGCGGCGGCTGGGCCGGGGGCTGCCGGCTGCGCTCGGGCCGTGCGCGGC
GGCCGTGCGGGCAGCCATGGACTTCAACATGAAGAAGCTGGCGTCGGACGCGGGCATCTTCTTCACCCGGGCGGTGCAG
TTCACGGAGGAGAAATTTGGCCAGGCTGAGAAGACTGAGCTTGATGCCACTTTGAAAACCTTCTGGCCCGGGCAGACAG

CACCAAGAACTGGACAGAGAAGATCTTGAGGCAGACAGAGGTGCTGCTGCAGCCCAACCCAGTGCCCGAGTGGAGGAGT
 TCCTGTATGAGAAGCTGGACAGGAAGGTCCCCCTCAAGGGTCACCAACGGGGAGCTGCTGGCTCAGTACATGGCAGACGCG
 GCCAGTGAGCTGGGGCCGACCACCCCTATGGGAAGACACTGATCAAGGTGGCAGAAGCTGAAAAGCAACTGGGAGCCGC
 GGAGAGGGATTTTATCCACACGGCCTCCATCAGCTTCTCACCCTTGCGCAACTTCTGGAGGGGGACTGGAAGACCA
 TCTCGAAGGAGAGGCGGCTCCTCCAAAACCGCGTCTGGACTTGGATGCCTGCAAAGCGAGGCTGAAGAAGGCCAAGGCT
 GCAGAAGCCAAAGCCACGACGGTGCCTGACTTTCAGGAGACTAGACCTCGTAATTACATTCTCTCGGCCAGCGCCTCCGC
 GCTCTGGAATGATGAAGTGGACAAGGCCGAGCAGGAGCTCCGCGTGGCCCAGACAGAGTTTGACCGGCAAGCAGAAGTGA
 CCCGTCTCTTGGTGGAGGGAATCAGTAGCACTACGTGAACCACCTGCGCTGCCTCCACGAGTTCGTCAAGTCTCAGACA
 ACCTACTACGCACAGTGCTACCGCCACATGCTGGACTTGCAGAAGCAGCTGGGCAGATTTCCCGGCACCTTCGTGGGCAC
 CACAGAGCCCCGCTCCCCACCCCTGAGCAGCACCTCACCCACCACTGCTGCGGCCACTATGCCTGTGGTGCCTCTGTGG
 CCAGCCTGGCCCCCTCCGGGGGAGGCCTCGCTCTGCCTGGAAGAGGTGGCCCCCTGCCAGTGGGACCCGCAAAGCTCGG
 GTGCTCTATGACTACGAGGCAGCCGACAGCAGTGAGCTGGCCCTGCTGGCTGATGAGCTCATCACTGTCTACAGCCTGCC
 TGGCATGGACCCTGACTGGCTCATTGGCGAGAGAGGCAACAAGAAGGGCAAGGTCCCTGTACCTACTTGAACTGCTCA
 GCTAGGCAGGTGCCCCCATCCCCCGCATTCTGGCCTAGGCAGGAGAGGATGGGCGCAGCCCTGCCACTTAACCTGTTT
 GTTGGTGACACAGTTGTTTCAGAGTGGGGAGAATTCACCCCATTTCTGTCCCTGCCCTAGTCACCTAGCTGTGAGGGTGCC
 TGAGGCTGAATGGCTCCACCCCTCCCCAGCCCTGCTTCTGACCTGTGGCTCTGGAGCCCTGCCCTGCATCCCC
 GAGCACCCACCCCTCCAGGCTCCACTAAGGAGGGAGGGGCTGTCTGCAGCAGCTGCACTCAGCACCTAGGCCAGGGTGGG
 GCCGCCGAGATGGGCTCAGGAAGCCCCAGGTGCACTCAGCGAGAGCCCTGCCTTTCAGTTGCCAAAAGCTGCATCAGGG
 GAATGCGGCAAGGCACACAGGGCTCTGGCAGCCCTGGGGACTGGGCGCTGCCCTGGGAGGGGAGAGCCTGGCCAGGGC
 TGGTGTGGGGCCGAGCAGCATCTTCCGGTGCTATCTCCCTCCACCCCTCACAGCTCAAGCCAAGTCCAGCGGCCG
 CAGTCTTACCCTCTCCACACTCACTTTTATCTGGTGTCTTACTTCTGCCTGCGTTTGCTCTCTAGCCAATAAACCGTC
 CTTGTGTGCGAGTCACCTGGGCTCCTGTGAGGGCTGGCCCTGAGGGTGGTAAAGGGAAAGGTAGACTCACCTCTGCCC
 CACTCTTCCACAGAGTGAGCAGGGGCCCTGTGGCTGCCCCGGCCCCAGCTCTCTAGTTGGGAAGAAGTGCAGCCCTCCC
 TGTCTTCTGCGGGCCTGTGCCTCTCAGAGGGCAGTGCTGTTCTGGACATGAAGCCGCACAAGGAACGTTTTATTCTTA
 AGAAAAAGTTTCTAAATTTGGATTGTGGAGCGGACTGTAGAATGCGTCTGACAGTTCAGTTCAAGCACAAGAAGTGGGT
 AGCGGTCAAGTGTCTGTCAGGTGCGGCGTTTACCCAGCATGTGCCCCCGTGCCATGGGTTCTCATGCCGTCTCAGTG
 TCCACATTTACAGATGAGATCAGCAAGACAGTCAGCTCCTCAAGGGACCACAGTTGGCAAGTGGCCAAGCAGGGACTGA
 AGCCCAGGCAGCCTGATTCTAGAAACCCTAAGTGATGTCTGTGTTTTAGATGGCCCTAGCAGGACCTAGCATTCTGACT
 TCAGTCCTGAGAAGGCCAACAGCCAGTAGGCCCACTGTTGGGGCTTCTGAAGAGGGGATCGGGGGATGACGGGGGACG
 GGGCTATAAATAGGAAGGCACAGAGCTTCAAGAAAGGCTCACCCAGGGATGAGCTCAGCCCACTGGGCCAATGAAAGCAG
 GGTCAAGGACAGGACCAGCGCAGGCCAAGGAAGGAATATCTGACAGCGCCACCCAGCCAAACCCTCAGCCCAAGGACA
 GGAATGAGGAGATGCTGGTGAAGTAGCCATCCATCAGTACCTGCCTTCCCCGAGGCTGCAGCCCCACTCCAGGCGCCT
 GGCCAGGGGAGTTTTCTAGGTTCTGAGAGCCAGTTGTCTATCCCTGGGCTTTGAAGTTAAACATCACACAGCTGTCTATA
 AACAAGATTTTAATATCTGTATAAATAGACCACAGAATTACCAAACTGCAAA

SH3GLB, a new endophilin-related protein family featuring an SH3 domain
 Genomics 71 (2), 222-234 (2001)

CTGCGCGCTCGGGCTGGCTCGGCGGCTGCGGCGGGCGGGCAGGCGGGCAGGCCGGCAGGCGGGTGC GCGGAGGGCTGGTG
 CCCCAGCAGAGGTGGGCGGGGTGCGGTTGGCGGCGGCGGCTGGGCGGGGGCTGCCGGCTGCGCTCGGGCCGTGCGCGGC
 GGCCGTGCGGGCAGCCATGGACTTCAACATGAAGAAGCTGGCGTGGACGCGGGCATCTTCTTACCCGGGCGGTGCAG
 TTCACGAGGAGAAAATTTGGCCAGGCTGAGAAGACTGAGCTTGATGCCCACTTTGAAAACCTTCTGGCCCGGGCAGACAG
 CACCAAGAACTGGACAGAGAAGATCTTGAGGCAGACAGAGGTGCTGCTGCAGCCCAACCCAGTGCCCGAGTGGAGGAGT
 TCCTGTATGAGAAGCTGGACAGGAAGGTCCCCCTCAAGGGTCACCAACGGGGAGCTGCTGGCTCAGTACATGGCAGACGCG
 GCCAGTGAGCTGGGGCCGACCACCCCTATGGGAAGACACTGATCAAGGTGGCAGAAGCTGAAAAGCAACTGGGAGCCGC
 GGAGAGGGATTTTATCCACACGGCCTCCATCAGCTTCTCACCCTTGCGCAACTTCTGGAGGGGGACTGGAAGACCA
 TCTCGAAGGAGAGGCGGCTCCTCCAAAACCGCGTCTGGACTTGGATGCCTGCAAAGCGAGGCTGAAGAAGGCCAAGGCT
 GCAGAAGCCAAAGCCACGACGGTGCCTGACTTTCAGGAGACTAGACCTCGTAATTACATTCTCTCGGCCAGCGCCTCCGC
 GCTCTGGAATGATGAAGTGGACAAGGCCGAGCAGGAGCTCCGCGTGGCCCAGACAGAGTTTGACCGGCAAGCAGAAGTGA

CCCGTCTCTTGCTGGAGGGAATCAGTAGCACTCACGTGAACCACCTGCGCTGCCTCCACGAGTTCTGTCAGTCTCAGACA
 ACCTACTACGCACAGTGCTACCGCCACATGCTGGACTTGACAGAAGCAGCTGGGCAGATTTCCCGGCACCTTCGTGGGCAC
 CACAGAGCCCCCTCCCCACCCCTGAGCAGCACCTCACCCACCACTGCTGCGGCACTATGCCTGTGGTGCCCTCTGTGG
 CCAGCCTGGCCCCCTCCGGGGGAGGCCTCGCTCTGCCTGGAAGAGGTGGCCCCCCTGCCAGTGGGACCCGCAAAGCTCGG
 GTGCTCTATGACTACGAGGCAGCCGACAGCAGTGAGCTGGCCCTGCTGGCTGATGAGCTCATCACTGTCTACAGCCTGCC
 TGGCATGGACCCTGACTGGCTCATTGGCGAGAGAGGCAACAAGAAGGGCAAGTCCCTGTACCTACTTGGAAGTGTCTA
 GCTAGGCAGGTGCCCCCATCCCCCGCATTCTGGCCTAGGCAGGAGAGGATGGGCGCAGCCCTGCCACTTAACCTGTTT
 GTTGGTGACACAGTTGTTTCAGAGTGGGGAGAATTCACCCATTCTGTCCCTGCCCTAGTCACCTAGCTGTGAGGGTGCC
 TGAGGCTGAATGGCTCCACCCCTCCCCAGCCCTGCTTCTGACCTGTGGCTCTGGAGCCCTGCCCTGCATCCCC
 GAGCACCCACCCCTCCAGGCTCCACTAAGGAGGGAGGGGCTGTCTGCAGCAGCTGCACTCAGCACCTAGGCCAGGGTGGG
 GCCGCCGAGATGGGCTCAGGAAGCCCCAGGTGCACTCAGCGAGAGCCCTGCCCTTTCAGTTGCCAAAAGCTGCATCAGGG
 GAATGCGGCAAGGCACACAGGGCTCTGGCAGCCCTGGGGACTGGGCGCTGCCCTGGGAGGGGAGAGCCTGGCCAGGGC
 TGGTGTGGGGCCCGAGCAGCATCTTCCGTGCTATCCTCCCCTCCCACCCCTCACAGCTCAAGCCAAGTCCAGCGGCCG
 CAGTCTTCACCTCTCCACACTCACTTTTTATCTGGTGTCTTTACTTCTGCCTGCGTTTGCTCTCTAGCCAATAAACCGTC
 CTTGTGTGCGAGTCACTGGGCTCCTGTGAGGCCTGGCCCTGAGGGTGGTAAAGGGAAAGGTAGACTCACCTCTGCCC
 CACTCTTCCACAGAGTGAGCAGGGGCCCTGTGGCTGCCCGGCCCCAGCTCTCTAGTTGGGAAGAAGTGCAGCCCTCCC
 TGTCTTCTGCGGGGCTGTGCCTCTCAGAGGGCAGTGCTGTTCTGGACATGAAGCCGCACAAGGAACGTTTTATTCTTA
 AGAAAAAGTTTCCTAAATTTGGATTGTGGAGCGGACTGTAGAATGCGTCTGACAGTTCAGTTCAAGCACAAGAAGTGGGT
 AGCGGTCACTGCTGTCTGCAGGTGCGGCGTTTACCCAGCATGTGCCCCGTGCCATGGGTTCTCATGCCGTCTCAGTG
 TCCACATTTACAGATGAGATCAGCAAGACAGTCAGCTCCTCAAGGGACCACAGTTGGCAAGTGGCCAAGCAGGGAAGTGA
 AGCCAGGCAGCCTGATTCTAGAAACCCTAAGTGATGTCTGTGTTTTAGATGGCCCTAGCAGGACCTAGCATTCTGACT
 TCAGTCTGTAGAAGGCCAACAGCCAGTAGGCCCACTGTTGGGGCTTCTGAAGAGGGGATCGGGGGATGACGGGGGCACG
 GGGCTATAAATAGGAAGGCACAGAGCTTCAAGAAAGGCTCACCCAGGGATGAGCTCAGCCCACTGGGCCAATGAAAGCAG
 GGTCAAGGACAGGACCAGCGCAGGCCAAGGAAGGAATATCTGACAGCGCCACCCAGCCAAACCCTCAGCCCAAGGACA
 GGAATGAGGAGATGCTGGTGAAGTAGCCATCCATCAGTACCTGCCTTCCCCGAGGCTGCAGCCCCACTCCAGGCGCCT
 GGCCAGGGGAGTTTTCTAGGTTCTGAGAGCCACGTTGTCTATCCCTGGGCTTTGAAGTTAAACATCACACAGCTGTCTATA
 AACAAGATTTTAATATCTGTATAAATAGACCACAGAATTACCAAAACTGCAAA

Blockade of CTLA-4 and PD-1 Enhances Adoptive T-cell Therapy Efficacy in an ICOS-Mediated Manner

Cancer Immunol Res 7 (11), 1803-1812 (2019)

AGCGGGTCTCTGCCGCAAAGCCTCAAGAACCCAGATTTACAGCGCCCCAAGCCTGGAAGCTCCCCAGTTCTTCGTGGC
 CCCCACAGCTCCGGAACCCAGCCGCTGCAACTCTCCGCGTCCGAAATCCAGCACCCCGCAGTCTGCGCTCGCACCATG
 CAGCTAAAGTGTCCTGTTTTGTGTCTTGGGAACAGGCAGCCTGTTTGAAGAAGCTCCATGTTTCTAGCGGGTTCTT
 TTCTGGTCTTGGTCTGTTCTTGCTGCTGTTGAGCAGCCTCTGTGCTGCCTCTGCAGAGACTGAAGTCGGTGCAATGGTGG
 GCAGCAATGTGGTGTCTAGCTGCATTGACCCCCACAGACGCCATTTCAACTTGAGTGGTCTGTATGTCTATTGGCAAATC
 GAAAACCCAGAAGTTTCGGTGACTTACTACCTGCCTTACAAGTCTCCAGGGATCAATGTGGACAGTTCCTACAAGAACAG
 GGGCCATCTGTCCCTGGACTCCATGAAGCAGGGTAACCTTCTCTGTACCTGAAGAATGTACCCCTCAGGATACCCAGG
 AGTTCACATGCCGGGTATTTATGAATACAGCCACAGAGTTAGTCAAGATCTTGGAAGAGGTGGTCAGGCTGCGTGTGGCA
 GCAAACCTTCAGTACACCTGTCTATCAGCACCTCTGATAGCTCCAACCCGGGCCAGGAACGTACCTACACCTGCATGTCCAA
 GAATGGCTACCCAGAGCCCCAACCTGTATTGGATCAACACAACGGACAATAGCCTAATAGACACGGCTCTGCAGAATAACA
 CTGTCTACTTGAACAAGTTGGGCCTGTATGATGTAATCAGCACATTAAGGCTCCCTTGACATCTCGTGGGGATGTTCTG
 TGCTGCGTAGAGAATGTGGCTCTCCACCAGAACATCACTAGCATTAGCCAGGCAGAAAGTTTCACTGGAAATAACACAAA
 GAACCCACAGGAAACCCACAATAATGAGTTAAAGTCCTTGTCCCCGTCTTGCTGTACTGGCGGCAGCGGCATTTCGTTT
 CCTTCATCATATACAGACGCACGCGTCCCCACCGAAGCTATACAGGACCCAAGACTGTACAGCTTGAACCTACAGACCAC
 GCCTGACAGGACTCTGCCAGGATATGGACAGGGTTTCTGTGAGTTGCCACCAGGTGGATGTGAGACACAACCTCAGAGT
 GGACCCCCACAGGCCTGGTGACAGAGGACAACGAGCTGTCTGCTTATGGGCTGTGATGGAGGCCAGGAATCCCTGGCTTT
 ACGAGGCACAGAGACTTCATCCCAGAAACCCGAGGGAGATCTCTCAGTGGGCAGCAGCAACATCATCGGAATATGGAG

CCTCCGGTGAGCTGTCCGGCACAGAGAGCAGCAGCTTGTGAGAAGATCCTTCCTTGGCACGTTACTACTCAGGCCTAGGAG
 CTTTATAAAAGAGCGTTTGAGCCACTCTGAAAGCCCTACAGAGTCTACTGGAGACTTTCCCTGCAGGACCTTCAGTTGGG
 GAGGAAGCCTGACTTTATTTAGGTCTCAGGCTACTTGGGCCTCTTCGAGGATATGTGGGATTTTGTCTACTGCAAACCTG
 TTTCTGGCTGACAATGGTTGGGCTCAGAGGCACTCAGCTTCACAACATCAATGGGACACGCCTCATCCTTGACTTCCTGT
 GGCTACAGAAGCTTTCCGAAAGCCTTGAGCTCTTTCAGACTGAACAGCTCTGCCCAGTCTCAGCAGCCCATGAAGATCTC
 AACTCCAGCTTCCTGGGTCTCCGTGTTGCTGGCCAGAATAGAGCTAGCTCTTTTGTTCGAAGATGGTTCTGCAAAGTTGG
 CTGCTTGGAACCTAGGGATGTATGTACAAGCTCCAGGCTGATGCAGTAGGGGGCACGACTCCCCGATGGAACACAGTA
 TCTGACCCTAGGTGAGGGCAAGCTCCTTCCCACGCAGAGGACTGGAAATCTGGACCGTCAAGGCCTGTCTGCTATGTGG
 CTGGGGCTCAGTGCTGATGGATGTGTGAGATCTCAGGAATGAGGAGTGAGAACCCTGGGCTCAGGACTAGGAAGACCTGT
 CCATTTTTTTTTTTTTTAAATGCCACATGGACTTTTTATTCTTCACACCGATGTATTCAATGAGTGTAGAGAGAACTAC
 TTAAGTCCTTCCCAGTACAAAGCATTACCTACCTGCAGAATAGCAACTGTTGTTATGGGTCTTGAGTTGGCAGCTACAG
 CAAACAAGCACAAAGGAGCAGTTGGGGTGCAAGAAGATGGGGTGACGCCCCCAAGGACAGACATTTGGGAATTAGTGGT
 CTCCCTGATGCCCATAGTTCCCAGGAACCTCAGGTGGGTCTGCGGCAGCACAGTAGGAGTATTCCTCCTACTTTAACTTT
 TCTTGTGACAGCTAGTTTAGGTTTCAAAAGAGGTCAACTCAGCAAGCCAGCTAGCCGCTTGGGGCACCAGACACACTGC
 CCCCCACCCCTGCTTATGTAGGCATTGGGAACCCTTCACAGACCACTGGCTGTACAGTCACCATCACCTGCTGATTCCA
 GCAGGCCCCACCTTCTTGTGGAATCCTGGGAGCACTCCCTCTTACCCCTCACTGCCCCCACCCTGCACATCAGCA
 TTCATTAGATTTGCCCTGTAACGTCTGATTCTCCTTTATCTGGGTTGTAGATGGGGCATAGTGACTTCTAGAAACCTAA
 CAAGGGAATAAATGTAAGATGTGCTTTC

Food antigens drive spontaneous IgE elevation in the absence of commensal
 microbiota

Sci Adv 5 (5), eaaw1507 (2019)

AGCGGTCTCTGCCGCAAGCCTCAAGAACCCAGATTTTCAGCGCCCCAAGCCTGGAAGCTCCCCAGTTCTTCGTGGC
 CCCCCACAGCTCCGGAACCCAGCCGCTGCAACTCTCCGCGTCCGAAATCCAGCACCCCGCAGTCTGCGCTCGCACCATG
 CAGCTAAAGTGTCCCTGTTTTGTGTCTTGGGAACCAGGCAGCCTGTTTGAAGAAGCTCCATGTTTCTAGCGGGTTCTT
 TTCTGGTCTTGGTCTGTTCTTGCTGCTGTTGAGCAGCCTCTGTGCTGCCTCTGCAGAGACTGAAGTCGGTGCAATGGTGG
 GCAGCAATGTGGTGTCTCAGCTGCATTGACCCACAGACGCCATTTCAACTTGAGTGGTCTGTATGTCTATTGGCAAAATC
 GAAAACCCAGAAGTTTCGGTGACTTACTACCTGCCTTACAAGTCTCCAGGGATCAATGTGGACAGTTCTTACAAGAACAG
 GGGCCATCTGTCCCTGGACTCCATGAAGCAGGGTAACCTTCTCTGTACCTGAAGAATGTACCCCTCAGGATACCCAGG
 AGTTCACATGCCGGGTATTTATGAATACAGCCACAGAGTTAGTCAAGATCTTGGAAGAGGTGGTCAGGCTGCGTGTGGCA
 GCAAACCTTCAGTACACCTGTCTATCAGCACCTCTGATAGCTCCAACCCGGGCCAGGAACGTACCTACACCTGCATGTCCAA
 GAATGGCTACCCAGAGCCCCAACCTGTATTGGATCAACACAACGGACAATAGCCTAATAGACACGGCTCTGCAGAATAACA
 CTGTCTACTTGAACAAGTTGGGCCTGTATGATGTAATCAGCACATTAAGGCTCCCTTGGACATCTCGTGGGGATGTTCTG
 TGCTGCGTAGAGAATGTGGCTCTCCACCAGAACATCACTAGCATTAGCCAGGCAGAAAGTTTCACTGGAAATAACACAAA
 GAACCCACAGGAAACCCACAATAATGAGTTAAAGTCCTTGTCCCGTCCCTTGCTGTACTGGCGGCAGCGGCATTTCGTTT
 CCTTCATCATATACAGACGCACGCGTCCCCACCGAAGCTATACAGGACCCAAGACTGTACAGCTTGAACCTACAGACCAC
 GCCTGACAGGACTCTGCCCAGGATATGGACAGGGTTTCTGTGAGTTGCCACCAGGTGGATGTACAGACACAACCTCAGAGT
 GGACCCACAGGCCTGGTGACAGAGGACAACGAGCTGTCTGCTTATGGGCTGTGATGGAGGCCAGGAATCCCTGGCTTT
 ACGAGGCACAGAGACTTCATCCCAGAAACCCGAGGGAGATCTCTCCAGTGGGCAGCAGCAACATCATCGGAATATGGAG
 CCTCCGGTGAGCTGTCCGGCACAGAGAGCAGCAGCTTGTGAGAAGATCCTTCCTTGGCACGTTACTACTCAGGCCTAGGAG
 CTTTATAAAAGAGCGTTTGAGCCACTCTGAAAGCCCTACAGAGTCTACTGGAGACTTTCCCTGCAGGACCTTCAGTTGGG
 GAGGAAGCCTGACTTTATTTAGGTCTCAGGCTACTTGGGCCTCTTCGAGGATATGTGGGATTTTGTCTACTGCAAACCTG
 TTTCTGGCTGACAATGGTTGGGCTCAGAGGCACTCAGCTTCACAACATCAATGGGACACGCCTCATCCTTGACTTCCTGT
 GGCTACAGAAGCTTTCCGAAAGCCTTGAGCTCTTTCAGACTGAACAGCTCTGCCCAGTCTCAGCAGCCCATGAAGATCTC
 AACTCCAGCTTCCTGGGTCTCCGTGTTGCTGGCCAGAATAGAGCTAGCTCTTTTGTTCGAAGATGGTTCTGCAAAGTTGG
 CTGCTTGGAACCTAGGGATGTATGTACAAGCTCCAGGCTGATGCAGTAGGGGGCACGACTCCCCGATGGAACACAGTA
 TCTGACCCTAGGTGAGGGCAAGCTCCTTCCCACGCAGAGGACTGGAAATCTGGACCGTCAAGGCCTGTCTGCTATGTGG
 CTGGGGCTCAGTGCTGATGGATGTGTGAGATCTCAGGAATGAGGAGTGAGAACCCTGGGCTCAGGACTAGGAAGACCTGT

CCATTTTTTTTTTTTTTTAATGCCACATGGACTTTTTATTCTTCACACCGATGTATTCAATGAGTGTAGAGAGAACTAC
TTAAGTCCTTCCCGAGTACAAAGCATTACCTACCTGCAGAATAGCAACTGTTGTTATGGGTCTTGAGTTGGCAGCTACAG
CAAACAAGCACAAGGAGCAGTTGGGGTGCAAGAAGATGGGGTGACGCGCCCCAAGGACAGACATTTGGGAATTAGTGGT
CTCCCTGATGCCCATAGTTCCCCAGGAACCTCAGGTGGGTCTGCGGCAGCACAGTAGGAGTATTCTCCTACTTTAACTTT
TCTTGTCAGACGTAGTTTAGGTTTCAAAAGAGGTCAACTCAGCAAGCCAGCTAGCCGCTTGGGGCACCAGACACACTGC
CCCCACCCCTGCTTATGTAGGCATTGGGAACCTTCACAGACCACTGGCTGTACAGTCACCATCACCTGCTGATTCCA
GCAGGCCCCCACCCTTCTTGGAATCCTGGGAGCACTCCCTCTTACCCCTCACTGCCCCCACCCTGCACATCAGCA
TTCATTAGATTTGCCCTGTAACGTCTGATTCCCTCTTATCTGGGTTGTAGATGGGGCATAGTGACTTCTAGAAACCTAA
CAAGGAATAAATGTAAGATGTGCTTTC

Nonimmune cell-derived ICOS ligand functions as a renoprotective alphavbeta3
integrin-selective antagonist

J Clin Invest 129 (4), 1713-1726 (2019)

AGCGGGTCTCCTGCCGCAAAGCCTCAAGAACCCAGATTTTACGCGCCCCAAGCCTGGAAGCTCCCCAGTTCTTCGTGGC
CCCCAACAGCTCCGGAACCCAGCCGCTGCAACTCTCCGCGTCCGAAATCCAGCACCCCGCAGTCTGCGCTCGCACCATG
CAGCTAAAGTGTCCTGTTTTGTGTCCTTGGGAACAGGCAGCCTGTTTGAAGAAGCTCCATGTTTCTAGCGGGTTCTT
TTCTGGTCTTGGTCTGTTCTTGCTGCTGTTGAGCAGCCTCTGTGCTGCCTCTGCAGAGACTGAAGTCGGTGCAATGGTGG
GCAGCAATGTGGTGCTCAGCTGCATTGACCCCCACAGACGCCATTTCAACTTGAGTGGTCTGTATGTCTATTGGCAAATC
GAAAACCCAGAAGTTTCGGTGACTTACTACCTGCCTTACAAGTCTCCAGGGATCAATGTGGACAGTTCTTACAAGAACAG
GGGCCATCTGTCCCTGGACTCCATGAAGCAGGGTAACTTCTCTGTACCTGAAGAATGTCACCCCTCAGGATACCCAGG
AGTTCACATGCCGGGTATTTATGAATACAGCCACAGAGTTAGTCAAGATCTTGAAGAGGTGGTCAGGCTGCGTGTGGCA
GCAAACCTTCAGTACACCTGTATCAGCACCTCTGATAGCTCCAACCCGGGCCAGGAACGTACCTACACCTGCATGTCCAA
GAATGGCTACCCAGAGCCCCAACCTGTATTGGATCAACACAACGGACAATAGCCTAATAGACACGGCTCTGCAGAATAACA
CTGTCTACTTGAACAAGTTGGGCCTGTATGATGTAATCAGCACATTAAGGCTCCCTTGGACATCTCGTGGGGATGTTCTG
TGCTGCGTAGAGAATGTGGCTCTCCACCAGAACATCACTAGCATTAGCCAGGCAGAAAGTTTCACTGGAAATAACACAAA
GAACCCACAGGAAACCCACAATAATGAGTTAAAAGTCCCTTGTCCCCGTCTTGCTGTACTGGCGGCAGCGGCATTTCGTTT
CCTTCATCATATACAGACGCACGCGTCCCCACCGAAGCTATACAGGACCCAAGACTGTACAGCTTGAACCTACAGACCAC
GCCTGACAGGACTCTGCCCAGGATATGGACAGGGTTTCTGTGAGTTGCCACCAGGTGGATGTACAGACACAACCTCAGAGT
GGACCCCCACAGGCCTGGTGACAGAGGACAACGAGCTGTCTGCTTATGGGCTGTGATGGAGGCCAGGAATCCCTGGCTTT
ACGAGGCACAGAGACTTCATCCCAGAAACCCGAGGGAGATCTCTCCAGTGGGCAGCAGCAACATCATCGGAATATGGAG
CCTCCGGTGAGCTGTGCGCACAGAGAGCAGCAGCTTGTGAGAAGATCCTTCCTTGGCACGTTACTACTCAGGCCTAGGAG
CTTTATAAAAGAGCGTTTGAGCCACTCTGAAAGCCCTACAGAGTCTACTGGAGACTTTCCCTGCAGGACCTTCAGTTGGG
GAGGAAGCCTGACTTTATTTAGGTCTCAGGCTACTTGGGCCTCTTCGAGGATATGTGGGATTTTGTCTACTGCAAACCTG
TTTCTGGCTGACAATGGTTGGGCTCAGAGGCACTCAGCTTCACAACATCAATGGGACACGCCTCATCCTTGACTTCCTGT
GGCTACAGAAGCTTTCGAAAGCCTTGAGCTCTTTCAGACTGAACAGCTCTGCCCAGTCTCAGCAGCCCATGAAGATCTC
AACTCCAGCTTCTCGGTCTCCGTGTTGCTGGCCAGAATAGAGCTAGCTCTTTTGTTCAGAGTGGTTCTGCAAAGTTGG
CTGCTTGGAAACCTAGGGATGTATGTACAAGTCCAGGCTGATGCAGTAGGGGCACGGAAGTCCCGATGGAACACAGTA
TCTGACCCTAGGTGAGGGCAAGCTCCTTCCCACGCAGAGGACTGGAAATTCAGGACCGTCAAGGCCTGTCTGCTATGTGG
CTGGGGCTCAGTGCTGATGGATGTGTGAGATCTCAGGAATGAGGAGTGAGAACCCTGGGCTCAGGACTAGGAAGACCTGT
CCATTTTTTTTTTTTTTTAATGCCACATGGACTTTTTATTCTTCACACCGATGTATTCAATGAGTGTAGAGAGAACTAC
TTAAGTCCTTCCCGAGTACAAAGCATTACCTACCTGCAGAATAGCAACTGTTGTTATGGGTCTTGAGTTGGCAGCTACAG
CAAACAAGCACAAGGAGCAGTTGGGGTGCAAGAAGATGGGGTGACGCGCCCCAAGGACAGACATTTGGGAATTAGTGGT
CTCCCTGATGCCCATAGTTCCCCAGGAACCTCAGGTGGGTCTGCGGCAGCACAGTAGGAGTATTCTCCTACTTTAACTTT
TCTTGTCAGACGTAGTTTAGGTTTCAAAAGAGGTCAACTCAGCAAGCCAGCTAGCCGCTTGGGGCACCAGACACACTGC
CCCCACCCCTGCTTATGTAGGCATTGGGAACCTTCACAGACCACTGGCTGTACAGTCACCATCACCTGCTGATTCCA
GCAGGCCCCCACCCTTCTTGGAATCCTGGGAGCACTCCCTCTTACCCCTCACTGCCCCCACCCTGCACATCAGCA
TTCATTAGATTTGCCCTGTAACGTCTGATTCCCTCTTATCTGGGTTGTAGATGGGGCATAGTGACTTCTAGAAACCTAA
CAAGGAATAAATGTAAGATGTGCTTTC

Cutting Edge: ICOS-Deficient Regulatory T Cells Display Normal Induction of Il10 but Readily Downregulate Expression of Foxp3

J Immunol 202 (4), 1039-1044 (2019)

AGCGGGTCTCCTGCCGCAAAGCCTCAAGAACCCAGATTTTCAGCGCCCCAAGCCTGGAAGCTCCCCAGTTCTTCGTGGC
CCCCAACAGCTCCGGAACCCAGCCGCTGCAACTCTCCGCGTCCGAAATCCAGCACCCCGCAGTCTGCGCTCGCACCATG
CAGCTAAAGTGTCCTGTTTTGTGTCCTTGGGAACAGGCAGCCTGTTTGGAAGAAGCTCCATGTTTCTAGCGGGTTCTT
TTCTGGTCTTGGTCTGTTCTTGCTGCTGTTGAGCAGCCTCTGTGCTGCCTCTGCAGAGACTGAAGTCGGTGCAATGGTGG
GCAGCAATGTGGTGCTCAGCTGCATTGACCCCCACAGACGCCATTTCAACTTGAGTGGTCTGTATGTCTATTGGCAAATC
GAAAACCCAGAAGTTTCGGTGACTTACTACCTGCCTTACAAGTCTCCAGGGATCAATGTGGACAGTTCCTACAAGAACAG
GGGCCATCTGTCCCTGGACTCCATGAAGCAGGGTAACCTTCTCTGTACCTGAAGAATGTCACCCCTCAGGATACCCAGG
AGTTCACATGCCGGGTATTTATGAATACAGCCACAGAGTTAGTCAAGATCTTGGAAGAGGTGGTCAGGCTGCGTGTGGCA
GCAAACCTTCAGTACACCTGTATCAGCACCTCTGATAGCTCCAACCCGGGCCAGGAACGTACCTACACCTGCATGTCCAA
GAATGGCTACCCAGAGCCCCAACCTGTATTGGATCAACACAACGGACAATAGCCTAATAGACACGGCTCTGCAGAATAACA
CTGTCTACTTGAACAAGTTGGGCCTGTATGATGTAATCAGCACATTAAGGCTCCCTTGACATCTCGTGGGGATGTTCTG
TGCTGCGTAGAGAATGTGGCTCTCCACCAGAACATCACTAGCATTAGCCAGGCAGAAAGTTTCACTGGAAATAACACAAA
GAACCCACAGGAAACCCACAATAATGAGTTAAAAGTCCTTGTCCCGTCTTGCTGTACTGGCGGCAGCGGCATTCCGTTT
CCTTCATCATATACAGACGCACGCGTCCCCACCGAAGCTATACAGGACCCAAGACTGTACAGCTTGAACCTACAGACCAC
GCCTGACAGGACTCTGCCCAGGATATGGACAGGGTTTCTGTGAGTTGCCACCAGGTGGATGTCAGACACAACCTCAGAGT
GGACCCCCACAGGCCTGGTGACAGAGGACAACGAGCTGTCTGCTTATGGGCTGTGATGGAGGCCAGGAATCCCTGGCTTT
ACGAGGCACAGAGACTTCATCCCAGAAACCCGAGGGAGATCTCTCCAGTGGGCAGCAGCAACATCATCGGAATATGGAG
CCTCCGGTGAGCTGTCCGCACAGAGAGCAGCAGCTTGTGAGAAGATCCTTCCTTGGCACGTTACTACTCAGGCCTAGGAG
CTTTATAAAAGAGCGTTTGAGCCACTCTGAAAGCCCTACAGAGTCTACTGGAGACTTTCCTGCAGGACCTTCAGTTGGG
GAGGAAGCCTGACTTTATTTAGGTCTCAGGCTACTTGGGCCTCTTCGAGGATATGTGGGATTTTGTCTACTGCAAACCTG
TTTCTGGCTGACAATGGTTGGGCTCAGAGGCACTCAGCTTCACAACATCAATGGGACACGCCTCATCCTTGACTTCCTGT
GGCTACAGAAGCTTTCGAAAGCCTTGAGCTCTTTCAGACTGAACAGCTCTGCCCAGTCTCAGCAGCCCATGAAGATCTC
AACTCCAGCTTCCTGGGTCTCCGTGTTGCTGGCCAGAATAGAGCTAGCTCTTTTGTTCAGATGGTTCTGCAAAGTTGG
CTGCTTGGAACCTAGGGATGTATGTACAAGTCCAGGCTGATGCAGTAGGGGGCACGGAAGTCCCGATGGAACACAGTA
TCTGACCCTAGGTGAGGGCAAGCTCCTTCCCACGCAGAGGACTGGAAATTCTGGACCGTCAAGGCCTGTCTGCTATGTGG
CTGGGGCTCAGTGCTGATGGATGTGTGAGATCTCAGGAATGAGGAGTGAGAACCCTGGGCTCAGGACTAGGAAGACCTGT
CCATTTTTTTTTTTTTTAAATGCCACATGGACTTTTTATTCTTCACACCGATGTATTCAATGAGTGTAGAGAGAACTAC
TTAAGTCCTTCCCGAGTACAAAGCATTACCTACCTGCAGAATAGCAACTGTTGTTATGGGTCTTGAGTTGGCAGCTACAG
CAAACAAGCACAAGGAGCAGTTGGGGTGCAAGAAGATGGGGTGACGCGCCCCAAGGACAGACATTTGGGAATTAGTGGT
CTCCCTGATGCCATAGTTCCCAGGAACCTCAGGTGGGTCTGCGGCAGCACAGTAGGAGTATTCTCCTACTTTAACTTT
TCTTGTGACAGTAGTTTAGGTTAGAAAGAGGTCAACTCAGCAAGCCAGCTAGCCGCTTGGGGCACCAGACACTGC
CCCCACCCCTGCTTATGTAGGCATTGGGAACCTTCACAGACCACTGGCTGTACAGTACCATCACCTGCTGATTCCA
GCAGGCCCCCACCTTCTTGTGGAATCCTGGGAGCACTCCCTCTTACCCCTCACTGCCCCCACCCCTGCACATCAGCA
TTCATTAGATTTGCCCTGTAACGTCTGATTCTCCTTTATCTGGGTTGTAGATGGGGCATAGTGACTTCTAGAAACCTAA
CAAGGAATAAATGTAAGATGTGCTTTC

Generation of RORgammat(+) Antigen-Specific T Regulatory 17 Cells from Foxp3(+)
Precursors in Autoimmunity

Cell Rep 21 (1), 195-207 (2017)

AGCGGGTCTCCTGCCGCAAAGCCTCAAGAACCCAGATTTTCAGCGCCCCAAGCCTGGAAGCTCCCCAGTTCTTCGTGGC
CCCCAACAGCTCCGGAACCCAGCCGCTGCAACTCTCCGCGTCCGAAATCCAGCACCCCGCAGTCTGCGCTCGCACCATG
CAGCTAAAGTGTCCTGTTTTGTGTCCTTGGGAACAGGCAGCCTGTTTGGAAGAAGCTCCATGTTTCTAGCGGGTTCTT
TTCTGGTCTTGGTCTGTTCTTGCTGCTGTTGAGCAGCCTCTGTGCTGCCTCTGCAGAGACTGAAGTCGGTGCAATGGTGG
GCAGCAATGTGGTGCTCAGCTGCATTGACCCCCACAGACGCCATTTCAACTTGAGTGGTCTGTATGTCTATTGGCAAATC

GAAAACCCAGAAGTTTCGGTGACTTACTACCTGCCTTACAAGTCTCCAGGGATCAATGTGGACAGTTCCTACAAGAACAG
 GGGCCATCTGTCCCTGGACTCCATGAAGCAGGGTAACTTCTCTGTACCTGAAGAATGTCAACCCCTCAGGATACCCAGG
 AGTTCACATGCCGGGTATTTATGAATACAGCCACAGAGTTAGTCAAGATCTTGGAAGAGGTGGTCAGGCTGCGTGTGGCA
 GCAAACCTTCAGTACACCTGTATCAGCACCTCTGATAGCTCCAACCCGGGCCAGGAACGTACCTACACCTGCATGTCCAA
 GAATGGCTACCCAGAGCCCAACCTGTATTGGATCAACACAACGGACAATAGCCTAATAGACACGGCTCTGCAGAATAACA
 CTGTCTACTTGAACAAGTTGGGCCTGTATGATGTAATCAGCACATTAAGGCTCCCTTGGACATCTCGTGGGGATGTTCTG
 TGCTGCGTAGAGAATGTGGCTCTCCACCAGAACATCACTAGCATTAGCCAGGCAGAAAGTTTCACTGGAAATAACACAAA
 GAACCCACAGGAAACCCACAATAATGAGTTAAAAGTCCCTTGTCCCGTCCCTTGTGTACTGGCGGCAGCGGCATTTCGTTT
 CCTTCATCATATACAGACGCACGCGTCCCCACCGAAGCTATACAGGACCCAAGACTGTACAGCTTGAACCTACAGACCAC
 GCCTGACAGGACTCTGCCCAGGATATGGACAGGGTTTCTGTGAGTTGCCACCAGGTGGATGTGACACAACTTCAGAGT
 GGACCCCCACAGGCCTGGTGACAGAGGACAACGAGCTGTCTGCTTATGGGCTGTGATGGAGGCCAGGAATCCCTGGCTTT
 ACGAGGCACAGAGACTTCATCCCAGAAACCCGAGGGAGATCTCTCCAGTGGGCAGCAGCAACATCATCGGAATATGGAG
 CCTCCGGTGAGCTGTGCGCACAGAGAGCAGCAGCTTGTGAGAAGATCCTTCCTTGGCACGTTACTACTCAGGCCTAGGAG
 CTTTATAAAAGAGCGTTTGAGCCACTCTGAAAGCCCTACAGAGTCTACTGGAGACTTTCCTTGCAGGACCTTCAGTTGGG
 GAGGAAGCCTGACTTTATTTAGGTCTCAGGCTACTTGGGCCTCTTCGAGGATATGTGGGATTTTGTCTACTGCAAACCTG
 TTTCTGGCTGACAATGGTTGGGCTCAGAGGCACTCAGCTTCACAACATCAATGGGACACGCCTCATCCTTGACTTCCTGT
 GGCTACAGAAGCTTTCGAAAGCCTTGAGCTCTTTCAGACTGAACAGCTCTGCCAGTCTCAGCAGCCCATGAAGATCTC
 AACTCCAGCTTCCTGGGTCTCCGTGTTGCTGGCCAGAATAGAGCTAGCTCTTTTGTTCAGATGGTTCTGCAAAGTTGG
 CTGCTTGAAAACCTAGGGATGTATGTACAAGTCCAGGCTGATGCAGTAGGGGCACGGAATCCCGATGGAACACAGTA
 TCTGACCTAGGTGAGGGCAAGCTCCTTCCCACGCAGAGGACTGGAAATTCCTGGACCGTCAAGGCCTGTCTGCTATGTGG
 CTGGGGCTCAGTGCTGATGGATGTGTGAGATCTCAGGAATGAGGAGTGAGAACCCTGGGCTCAGGACTAGGAAGACCTGT
 CCATTTTTTTTTTTTTTAAATGCCACATGGACTTTTTATTCTTCACACCGATGTATTCAATGAGTGTAGAGAGAACTAC
 TTAAGTCTTCCCAGGTACAAAGCATTACCTACCTGCAGAATAGCAACTGTTGTTATGGGTCTTGAGTTGGCAGCTACAG
 CAAACAAGCACAAGGAGCAGTTGGGGTGCAAGAAGATGGGGTGACGCGCCCCAAGGACAGACATTTGGGAATTAGTGGT
 CTCCCTGATGCCCATAGTTCCCAGGAACCTCAGGTGGGTCTGCGGCAGCACAGTAGGAGTATTCTCCTACTTTAACTTT
 TCTTGTGACAGTAGTTTAGGTTTCAAGAGGTCAACTCAGCAAGCCAGCTAGCCGCTTGGGGCACCAGACACACTGC
 CCCCCACCCCTGCTTATGTAGGCATTGGGAACCCCTTCACAGACCACTGGCTGTACAGTACCATCACCTGCTGATTCCA
 GCAGGCCCCCACCCTTCTTGTGGAATCCTGGGAGCACTCCCCTCTTACCCCTCACTGCCCCCACCCTGCACATCAGCA
 TTCATTAGATTTGCCCTGTAACGTCTGATTCTCCTTTATCTGGGTTGTAGATGGGGCATAGTGACTTCTAGAAACCTAA
 CAAGGGAATAAATGTAAGATGTGCTTTC

Engagement of the PD-1 immunoinhibitory receptor by a novel B7 family member
 leads to negative regulation of lymphocyte activation

J Exp Med 192 (7), 1027-1034 (2000)

AGCGGGTCTCCTGCCGCAAAGCCTCAAGAACCCAGATTTACAGCGCCCCAAGCCTGGAAGCTCCCCAGTTCCTTCGTGGC
 CCCCACAGCTCCGGAACCCAGCCGCTGCAACTCTCCGCGTCCGAAATCCAGCACCCCGCAGTCTGCGCTCGCACCATG
 CAGCTAAAGTGTCCCTGTTTTGTGTCTTGGGAACCAGGCAGCCTGTTTGGAAGAAGCTCCATGTTTCTAGCGGGTCTT
 TTCTGGTCTTGCTGCTTTCTGCTGCTGTTGAGCAGCCTCTGTGCTGCCTCTGCAGAGACTGAAGTCGGTGCAATGGTGG
 GCAGCAATGTGGTGCTCAGCTGCATTGACCCCCACAGACGCCATTTCAACTTGAGTGGTCTGTATGTCTATTGGCAAATC
 GAAAACCCAGAAGTTTCGGTGACTTACTACCTGCCTTACAAGTCTCCAGGGATCAATGTGGACAGTTCCTACAAGAACAG
 GGGCCATCTGTCCCTGGACTCCATGAAGCAGGGTAACTTCTCTGTACCTGAAGAATGTCAACCCCTCAGGATACCCAGG
 AGTTCACATGCCGGGTATTTATGAATACAGCCACAGAGTTAGTCAAGATCTTGGAAGAGGTGGTCAGGCTGCGTGTGGCA
 GCAAACCTTCAGTACACCTGTATCAGCACCTCTGATAGCTCCAACCCGGGCCAGGAACGTACCTACACCTGCATGTCCAA
 GAATGGCTACCCAGAGCCCAACCTGTATTGGATCAACACAACGGACAATAGCCTAATAGACACGGCTCTGCAGAATAACA
 CTGTCTACTTGAACAAGTTGGGCCTGTATGATGTAATCAGCACATTAAGGCTCCCTTGGACATCTCGTGGGGATGTTCTG
 TGCTGCGTAGAGAATGTGGCTCTCCACCAGAACATCACTAGCATTAGCCAGGCAGAAAGTTTCACTGGAAATAACACAAA
 GAACCCACAGGAAACCCACAATAATGAGTTAAAAGTCCCTTGTCCCGTCCCTTGTGTACTGGCGGCAGCGGCATTTCGTTT
 CCTTCATCATATACAGACGCACGCGTCCCCACCGAAGCTATACAGGACCCAAGACTGTACAGCTTGAACCTACAGACCAC

GCCTGACAGGACTCTGCCCAGGATATGGACAGGGTTTCTGTGAGTTGCCACCAGGTGGATGTCAGACACAACCTTCAGAGT
GGACCCCCACAGGCCTGGTGACAGAGGACAACGAGCTGTCTGCTTATGGGCTGTGATGGAGGCCAGGAATCCCTGGCTTT
ACGAGGCACAGAGACTTCATCCCAGAAACCCGAGGGAGATCTCTCCAGTGGGCAGCAGCAACATCATCGGAATATGGAG
CCTCCGGTGAGCTGTGCGCACAGAGAGCAGCAGCTTGTGAGAAGATCCTTCCTTGGCACGTTACTACTCAGGCCTAGGAG
CTTTATAAAAGAGCGTTTGAGCCACTCTGAAAGCCCTACAGAGTCTACTGGAGACTTTCCCTGCAGGACCTTCAGTTGGG
GAGGAAGCCTGACTTTATTTAGGTCTCAGGCTACTTGGGCCTCTTCGAGGATATGTGGGATTTTGTCTACTGCAAACCTG
TTTCTGGCTGACAATGGTTGGGCTCAGAGGCACTCAGCTTCACAACATCAATGGGACACGCCTCATCCTTGACTTCCTGT
GGCTACAGAAGCTTTCCGAAAGCCTTGAGCTCTTTCAGACTGAACAGCTCTGCCCAGTCTCAGCAGCCCATGAAGATCTC
AACTCCAGCTTCCTGGGTCTCCGTGTTGCTGGCCAGAATAGAGCTAGCTCTTTTGTTCAGATGGTTCTGCAAAGTTGG
CTGCTTGGAACCTAGGGATGTATGTACAAGCTCCAGGCTGATGCAGTAGGGGGACGGACTCCCCGATGGAACACAGTA
TCTGACCCTAGGTGAGGGCAAGCTCCTTCCACGCAGAGGACTGGAAATTCTGGACCGTCAAGGCCTGTCTGCTATGTGG
CTGGGGCTCAGTGCTGATGGATGTGTGAGATCTCAGGAATGAGGAGTGAGAACCCTGGGCTCAGGACTAGGAAGACCTGT
CCATTTTTTTTTTTTTTAAATGCCACATGGACTTTTTATTCTTCACACCGATGTATTCAATGAGTGTAGAGAGAACTAC
TTAAGTCCTTCCCGAGTACAAAGCATTACCTACCTGCAGAATAGCAACTGTTGTTATGGGTCTTGAGTTGGCAGCTACAG
CAAACAAGCACAAGGAGCAGTTGGGGTGCAAGAAGATGGGGTGACGCGCCCCAAGGACAGACATTTGGGAATTAGTGGT
CTCCCTGATGCCCATAGTTCCCGAGGAAGCTCAGGTGGGTCTGCGGCAGCACAGTAGGAGTATTCTCCTACTTTAACTTT
TCTTGTCAGACGTAGTTTAGGTTTCAAAAGAGGTCAACTCAGCAAGCCAGCTAGCCGCTTGGGGCACCAGACACACTGC
CCCCACCCCTGCTTATGTAGGCATTGGGAACCTTCACAGACCACTGGCTGTACAGTCACCATCACCTGCTGATTCCA
GCAGGCCCCACCTTCTTGTGGAATCCTGGGAGCACTCCCTCTTACCCCTCACTGCCCCCACCCTGCACATCAGCA
TTCATTAGATTTGCCCTGTAACGTCTGATTCCTCTTATCTGGGTTGTAGATGGGGCATAGTGACTTCTAGAAACCTAA
CAAGGGAATAAATGTAAGATGTGCTTTC

Molecular cloning and characterization of murine ICOS and identification of B7h
as ICOS ligand

Eur J Immunol 30 (4), 1040-1047 (2000)

AGCGGGTCTCCTGCCGCAAAGCCTCAAGAACCCAGATTTACAGCGCCCCAAGCCTGGAAGCTCCCCAGTTCTTCGTGGC
CCCCAACAGTCCGGAACCCAGCCGTGCAACTCTCCGCGTCCGAAATCCAGCACCCCGCAGTCTGCGCTCGCACCATG
CAGCTAAAGTGTCCTGTTTTGTGTCTTGGGAACCAGGCAGCCTGTTTGGAAGAAGCTCCATGTTTCTAGCGGGTTCTT
TTCTGGTCTTGGTCTGTTCTTGCTGCTGTTGAGCAGCCTCTGTGCTGCCTCTGCAGAGACTGAAGTCGGTGCAATGGTGG
GCAGCAATGTGGTGTCTCAGCTGCATTGACCCCCACAGACGCCATTTCAACTTGAGTGGTCTGTATGTCTATTGGCAAAATC
GAAAACCCAGAAGTTTCGGTGACTTACTACCTGCCTTACAAGTCTCCAGGGATCAATGTGGACAGTTCTACAAGAACAG
GGGCCATCTGTCCCTGGACTCCATGAAGCAGGGTAACCTCTCTGTACCTGAAGAATGTCACCCCTCAGGATACCCAGG
AGTTCACATGCCGGGTATTTATGAATACAGCCACAGAGTTAGTCAAGATCTTGGAAGAGGTGGTCAGGCTGCGTGTGGCA
GCAAACTTCAGTACACCTGTCTATCAGCACCTCTGATAGCTCCAACCCGGGCCAGGAACGTACCTACACCTGCATGTCCAA
GAATGGCTACCCAGAGCCCCAACCTGTATTGGATCAACACAACGGACAATAGCCTAATAGACACGGCTCTGCAGAATAACA
CTGTCTACTTGAACAAGTTGGGCCTGTATGATGTAATCAGCACATTAAGGCTCCCTTGGACATCTCGTGGGGATGTTCTG
TGCTGCGTAGAGAATGTGGCTCTCCACCAGAACATCACTAGCATTAGCCAGGCAGAAAGTTTCACTGGAAATAACACAAA
GAACCCACAGGAAACCCACAATAATGAGTTAAAAAGTCCTTGTCCCCGTCTTGCTGTACTGGCGGCAGCGGCATTTCGTTT
CCTTCATCATATACAGACGCACGCTCCCCACCGAAGCTATACAGGACCCAAGACTGTACAGCTTGAACCTACAGACCAC
GCCTGACAGGACTCTGCCCAGGATATGGACAGGGTTTCTGTGAGTTGCCACCAGGTGGATGTCAGACACAACCTTCAGAGT
GGACCCCCACAGGCCTGGTGACAGAGGACAACGAGCTGTCTGCTTATGGGCTGTGATGGAGGCCAGGAATCCCTGGCTTT
ACGAGGCACAGAGACTTCATCCCAGAAACCCGAGGGAGATCTCTCCAGTGGGCAGCAGCAACATCATCGGAATATGGAG
CCTCCGGTGAGCTGTGCGCACAGAGAGCAGCAGCTTGTGAGAAGATCCTTCCTTGGCACGTTACTACTCAGGCCTAGGAG
CTTTATAAAAGAGCGTTTGAGCCACTCTGAAAGCCCTACAGAGTCTACTGGAGACTTTCCCTGCAGGACCTTCAGTTGGG
GAGGAAGCCTGACTTTATTTAGGTCTCAGGCTACTTGGGCCTCTTCGAGGATATGTGGGATTTTGTCTACTGCAAACCTG
TTTCTGGCTGACAATGGTTGGGCTCAGAGGCACTCAGCTTCACAACATCAATGGGACACGCCTCATCCTTGACTTCCTGT
GGCTACAGAAGCTTTCCGAAAGCCTTGAGCTCTTTCAGACTGAACAGCTCTGCCCAGTCTCAGCAGCCCATGAAGATCTC
AACTCCAGCTTCCTGGGTCTCCGTGTTGCTGGCCAGAATAGAGCTAGCTCTTTTGTTCAGATGGTTCTGCAAAGTTGG

CTGCTTGGAACCTAGGGATGTATGTACAAGCTCCAGGCTGATGCAGTAGGGGGCACGGAAGCTCCCGATGGAACACAGTA
TCTGACCCTAGGTGAGGGCAAGCTCCTTCCCACGCAGAGGACTGGAAATCTGGACCGTCAAGGCCTGTCTGCTATGTGG
CTGGGGCTCAGTGCTGATGGATGTGTGAGATCTCAGGAATGAGGAGTGAGAACCCTGGGCTCAGGACTAGGAAGACCTGT
CCATTTTTTTTTTTTTTAAATGCCACATGGACTTTTTATTCTTCACACCGATGTATTCAATGAGTGTAGAGAGAACTAC
TTAAGTCCTTCCCAGGTACAAAGCATTACCTACCTGCAGAATAGCAACTGTTGTTATGGGTCTTGAGTTGGCAGCTACAG
CAAACAAGCACAAGGAGCAGTTGGGGTGCAAGAAGATGGGGTGTCAGCGCCCCCAAGGACAGACATTTGGGAATTAGTGGT
CTCCCTGATGCCATAGTTCCCCAGGAAGCTCAGGTGGGTCTGCGGCAGCACAGTAGGAGTATTCTCCTACTTTAACTTT
TCTTGTGACAGCTAGTTTAGGTTTCAAAAGAGGTCAACTCAGCAAGCCAGCTAGCCGCTTGGGGCACCAGACACACTGC
CCCCACCCCTGCTTATGTAGGCATTGGGAACCTTCACAGACCACTGGCTGTACAGTCACCATCACCTGCTGATTCCA
GCAGGCCCCACCTTCTTGTGGAATCCTGGGAGCACTCCCCTCTTACCCCTCACTGCCCCCACCCCTGCACATCAGCA
TTCATTAGATTTGCCCTGTAACGTCTGATTCTCTCTTATCTGGGTTGTAGATGGGGCATAGTGACTTCTAGAAACCTAA
CAAGGAATAAATGTAAGATGTGCTTTC

Cutting edge: identification of GL50, a novel B7-like protein that functionally
binds to ICOS receptor

J Immunol 164 (4), 1653-1657 (2000)

AGCGGGTCTCTGCCGCCAAAGCCTCAAGAACCCAGATTTCAGCGCCCCAAGCCTGGAAGCTCCCCAGTTCTTCGTGGC
CCCCAACAGCTCCGGAACCCAGCCGCTGCAACTCTCCGCGTCCGAAATCCAGCACCCCGCAGTCTGCGCTCGCACCATG
CAGCTAAAGTGTCCTGTTTTGTGTCCTTGGGAACAGGCAGCCTGTTTGGAGAAGCTCCATGTTTCTAGCGGGTTCTT
TTCTGGTCTTGGTCTGTTCTTGCTGCTGTTGAGCAGCCTCTGTGCTGCCTCTGCAGAGACTGAAGTCGGTGCAATGGTGG
GCAGCAATGTGGTGTCTCAGCTGCATTGACCCCCACAGACGCCATTTCAACTTGAGTGGTCTGTATGTCTATTGGCAAATC
GAAAACCCAGAAGTTTCGGTGACTTACTACCTGCCTTACAAGTCTCCAGGGATCAATGTGGACAGTTCTTACAAGAACAG
GGGCCATCTGTCCCTGGACTCCATGAAGCAGGTAACCTTCTCTGTACCTGAAGAATGTACCCCTCAGGATACCCAGG
AGTTCACATGCCGGGTATTTATGAATACAGCCACAGAGTTAGTCAAGATCTTGGAAAGAGGTGGTCAGGCTGCGTGTGGCA
GCAAACCTCAGTACACCTGTCTATCAGCACCTCTGATAGCTCCAACCCGGGCCAGGAACGTACCTACACCTGCATGTCCAA
GAATGGCTACCCAGAGCCCCAACCTGTATTGGATCAACACAACGGACAATAGCCTAATAGACACGGCTCTGCAGAATAACA
CTGTCTACTTGAACAAGTTGGGCCTGTATGATGTAATCAGCACATTAAGGCTCCCTTGGACATCTCGTGGGGATGTTCTG
TGCTGCGTAGAGAATGTGGCTCTCCACCAGAACATCACTAGCATTAGCCAGGCAGAAAGTTTCACTGGAAATAACACAAA
GAACCCACAGGAAACCCACAATAATGAGTTAAAAGTCCTTGTCCCCGTCTTGTGTACTGGCGGCAGCGGCATTTCGTTT
CCTTCATCATATACAGACGCACGCGTCCCCACCGAAGCTATACAGGACCCAAAGACTGTACAGCTTGAACCTACAGACCAC
GCCTGACAGGACTCTGCCAGGATATGGACAGGGTTTCTGTGAGTTGCCACCAGGTGGATGTACAGACACAACCTCAGAGT
GGACCCCCACAGGCCTGGTGACAGAGGACAACGAGCTGTCTGCTTATGGGCTGTGATGGAGGCCAGGAATCCCTGGCTTT
ACGAGGCACAGAGACTTCATCCCAGAAACCCGAGGGAGATCTCTCCAGTGGGCAGCAGCAACATCATCGGAATATGGAG
CCTCCGGTGAGCTGTCCGCACAGAGAGCAGCAGCTTGTGAGAAGATCCTTCCTTGGCACGTTACTACTCAGGCCTAGGAG
CTTTATAAAAGAGCGTTTGAGCCACTCTGAAAGCCCTACAGAGTCTACTGGAGACTTTCCTGCAGGACCTTCAGTTGGG
GAGGAAGCCTGACTTTATTTAGGTCTCAGGCTACTTGGGCCTCTTCGAGGATATGTGGGATTTTGTCTACTGCAAACCTG
TTTCTGGCTGACAATGGTTGGGCTCAGAGGCACTCAGCTTCACAACATCAATGGGACACGCCTCATCCTTGACTTCCTGT
GGCTACAGAAGCTTCCGAAAGCCTTGAGCTCTTCAGACTGAACAGCTCTGCCCAGTCTCAGCAGCCCATGAAGATCTC
AACTCCAGCTTCCTGGGTCTCCGTGTTGCTGGCCAGAATAGAGCTAGCTCTTTTGTTCAGATGGTTCTGCAAAGTTGG
CTGCTTGGAACCTAGGGATGTATGTACAAGCTCCAGGCTGATGCAGTAGGGGGCACGGAAGCTCCCGATGGAACACAGTA
TCTGACCCTAGGTGAGGGCAAGCTCCTTCCCACGCAGAGGACTGGAAATCTGGACCGTCAAGGCCTGTCTGCTATGTGG
CTGGGGCTCAGTGCTGATGGATGTGTGAGATCTCAGGAATGAGGAGTGAGAACCCTGGGCTCAGGACTAGGAAGACCTGT
CCATTTTTTTTTTTTTTAAATGCCACATGGACTTTTTATTCTTCACACCGATGTATTCAATGAGTGTAGAGAGAACTAC
TTAAGTCCTTCCCAGGTACAAAGCATTACCTACCTGCAGAATAGCAACTGTTGTTATGGGTCTTGAGTTGGCAGCTACAG
CAAACAAGCACAAGGAGCAGTTGGGGTGCAAGAAGATGGGGTGTCAGCGCCCCCAAGGACAGACATTTGGGAATTAGTGGT
CTCCCTGATGCCATAGTTCCCCAGGAAGCTCAGGTGGGTCTGCGGCAGCACAGTAGGAGTATTCTCCTACTTTAACTTT
TCTTGTGACAGCTAGTTTAGGTTTCAAAAGAGGTCAACTCAGCAAGCCAGCTAGCCGCTTGGGGCACCAGACACACTGC
CCCCACCCCTGCTTATGTAGGCATTGGGAACCTTCACAGACCACTGGCTGTACAGTCACCATCACCTGCTGATTCCA

GCAGGCCCCCACCTTCTTGTGGAATCCTGGGAGCACTCCCCTCTTACCCCTCACTGCCCCCACCCTGCACATCAGCA
TTCATTAGATTTGCCCTGTAACGTCTGATTCCCTCTTATCTGGGTTGTAGATGGGGCATAGTGACTTCTAGAAACCTAA
CAAGGGAATAAATGTAAGATGTGCTTTC

T-cell co-stimulation through B7RP-1 and ICOS

Nature 402 (6763), 827-832 (1999)

AGCGGGTCTCCTGCCGCAAAGCCTCAAGAACCCAGATTTTCAGCGCCCCAAGCCTGGAAGCTCCCCAGTTCTTCGTGGC
CCCCAACAGCTCCGGAACCCAGCCGCTGCAACTCTCCGCGTCCGAAATCCAGCACCCCGCAGTCTGCGCTCGCACCATG
CAGCTAAAGTGTCCCTGTTTTGTGTCCTTGGGAACCAGGCAGCCTGTTTGAAGAAGCTCCATGTTTCTAGCGGGTTCTT
TTCTGGTCTTGGTCTGTTCTTGCTGCTGTTGAGCAGCCTCTGTGCTGCCTCTGCAGAGACTGAAGTCGGTGCAATGGTGG
GCAGCAATGTGGTGTCTGCTGCTGATTGACCCCAAGAGCGCCATTTCAACTTGAGTGGTCTGTATGTCTATTGGCAAAATC
GAAAACCCAGAAGTTTCGGTGACTTACTACCTGCCTTACAAGTCTCCAGGGATCAATGTGGACAGTTCTTACAAGAACAG
GGGCCATCTGTCCCTGGACTCCATGAAGCAGGGTAACCTTCTCTGTACCTGAAGAATGTCACCCCTCAGGATACCCAGG
AGTTTCACATGCCGGGTATTTATGAATACAGCCACAGAGTTAGTCAAGATCTTGGAAGAGGTGGTCAGGCTGCGTGTGGCA
GCAAACCTTCAGTACACCTGTCTATCAGCACCTCTGATAGCTCCAACCCGGGCCAGGAACGTACCTACACCTGCATGTCCAA
GAATGGCTACCCAGAGCCCAACCTGTATTGGATCAACACAACGGACAATAGCCTAATAGACACGGCTCTGCAGAATAACA
CTGTCTACTTGAACAAGTTGGGCCTGTATGATGTAATCAGCACATTAAGGCTCCCTTGGACATCTCGTGGGGATGTTCTG
TGCTGCGTAGAGAATGTGGCTCTCCACCAGAACATCACTAGCATTAGCCAGGCAGAAAGTTTCACTGGAAATAACACAAA
GAACCCACAGGAAACCCACAATAATGAGTTAAAAGTCCTTGTCCCCGTCTTGCTGTACTGGCGGCAGCGGCATTTCGTTT
CCTTCATCATATACAGACGCACGCGTCCCCACCGAAGCTATACAGGACCCAAGACTGTACAGCTTGAACCTACAGACCAC
GCCTGACAGGACTCTGCCCAGGATATGGACAGGGTTTCTGTGAGTTGCCACCAGGTGGATGTACAGACACAACCTCAGAGT
GGACCCCAACAGGCCTGGTGACAGAGGACAACGAGCTGTCTGCTTATGGGCTGTGATGGAGGCCAGGAATCCCTGGCTTT
ACGAGGCACAGAGACTTCATCCCAGAAACCCGAGGGAGATCTCTCCAGTGGGCAGCAGCAACATCATCGGAATATGGAG
CCTCCGGTGAGCTGTGCGCACAGAGAGCAGCAGCTTGTGAGAAGATCCTTCCTTGGCACGTTACTACTCAGGCCTAGGAG
CTTTATAAAAGAGCGTTTGAGCCACTCTGAAAGCCCTACAGAGTCTACTGGAGACTTTCCCTGCAGGACCTTCAGTTGGG
GAGGAAGCCTGACTTTATTTAGGTCTCAGGCTACTTGGGCCTCTTCGAGGATATGTGGGATTTTGTCTACTGCAAACCTG
TTTCTGGCTGACAATGGTTGGGCTCAGAGGCACTCAGCTTCACAACATCAATGGGACACGCCTCATCCTTGACTTCCTGT
GGCTACAGAAGCTTTCCGAAAGCCTTGAGCTCTTTCAGACTGAACAGCTCTGCCCAGTCTCAGCAGCCCATGAAGATCTC
AACTCCAGCTTCTCGGGTCTCCGTGTTGCTGGCCAGAATAGAGCTAGCTCTTTTGTTCAGATGGTTCTGCAAAGTTGG
CTGCTTGGAACCTAGGGATGTATGTACAAGCTCCAGGCTGATGCAGTAGGGGGCACGGAAGTCCCGATGGAACACAGTA
TCTGACCCTAGGTGAGGGCAAGCTCCTTCCCACGCAGAGGACTGGAAATCTGGACCGTCAAGGCCTGTCTGCTATGTGG
CTGGGGCTCAGTGCTGATGGATGTGTGAGATCTCAGGAATGAGGAGTGAGAACCCTGGGCTCAGGACTAGGAAGACCTGT
CCATTTTTTTTTTTTTTAAATGCCACATGGACTTTTTATTCTTCACACCGATGTATTCAATGAGTGTAGAGAGAACTAC
TTAAGTCCTTCCCGAGTACAAAGCATTACCTACCTGCAGAATAGCAACTGTTGTTATGGGTCTTGAGTTGGCAGCTACAG
CAAACAAGCACAAAGGAGCAGTTGGGGTGCAAGAAGATGGGGTGACGCCCCCAAGGACAGACATTTGGGAATTAGTGGT
CTCCCTGATGCCCATAGTTCCCAAGAACTCAGGTGGGTCTGCGGCAGCACAGTAGGAGTATTCCTCCTACTTTAACTTT
TCTTGTGACAGCTAGTTTAGGTTTCAAGAGGTTCAACTCAGCAAGCCAGCTAGCCGCTTGGGGCACCAGACACACTGC
CCCCACCCCTGCTTATGTAGGCATTGGGAACCCCTTCACAGACCACTGGCTGTACAGTCAACATCACCTGCTGATTCCA
GCAGGCCCCCACCTTCTTGTGGAATCCTGGGAGCACTCCCCTCTTACCCCTCACTGCCCCCACCCTGCACATCAGCA
TTCATTAGATTTGCCCTGTAACGTCTGATTCCCTCTTATCTGGGTTGTAGATGGGGCATAGTGACTTCTAGAAACCTAA
CAAGGGAATAAATGTAAGATGTGCTTTC

B7h, a novel costimulatory homolog of B7.1 and B7.2, is induced by TNFalpha

Immunity 11 (4), 423-432 (1999)

AGCGGGTCTCCTGCCGCAAAGCCTCAAGAACCCAGATTTTCAGCGCCCCAAGCCTGGAAGCTCCCCAGTTCTTCGTGGC
CCCCAACAGCTCCGGAACCCAGCCGCTGCAACTCTCCGCGTCCGAAATCCAGCACCCCGCAGTCTGCGCTCGCACCATG
CAGCTAAAGTGTCCCTGTTTTGTGTCCTTGGGAACCAGGCAGCCTGTTTGAAGAAGCTCCATGTTTCTAGCGGGTTCTT
TTCTGGTCTTGGTCTGTTCTTGCTGCTGTTGAGCAGCCTCTGTGCTGCCTCTGCAGAGACTGAAGTCGGTGCAATGGTGG

GCAGCAATGTGGTGCTCAGCTGCATTGACCCCCACAGACGCCATTTCAACTTGAGTGGTCTGTATGTCTATTGGCAAATC
GAAAACCCAGAAGTTTCGGTGACTTACTACCTGCCTTACAAGTCTCCAGGGATCAATGTGGACAGTTCTACAAGAACAG
GGCCCATCTGTCCCTGGACTCCATGAAGCAGGGTAACTTCTCTGTACCTGAAGAATGTCACCCCTCAGGATACCCAGG
AGTTCACATGCCGGGTATTTATGAATACAGCCACAGAGTTAGTCAAGATCTTGGAAGAGGTGGTCAGGCTGCGTGTGGCA
GCAAACCTTCAGTACACCTGTCATCAGCACCTCTGATAGCTCCAACCCGGGCCAGGAACGTACCTACACCTGCATGTCCAA
GAATGGCTACCCAGAGCCCCAACCTGTATTGGATCAACACAACGGACAATAGCCTAATAGACACGGCTCTGCAGAATAACA
CTGTCTACTTGAACAAGTTGGGCCTGTATGATGTAATCAGCACATTAAGGCTCCCTTGACATCTCGTGGGGATGTTCTG
TGCTGCGTAGAGAATGTGGCTCTCCACCAGAACATCACTAGCATTAGCCAGGCAGAAAGTTTCACTGGAAATAACACAAA
GAACCCACAGGAAACCCACAATAATGAGTTAAAAGTCCCTTGTCCCGTCCCTTGCTGTACTGGCGGCAGCGGCATTCCGTTT
CCTTCATCATATACAGACGCACGCGTCCCCACCGAAGCTATACAGGACCCAAGACTGTACAGCTTGAACCTACAGACCAC
GCCTGACAGGACTCTGCCAGGATATGGACAGGGTTTCTGTGAGTTGCCACCAGGTGGATGTCAGACACAACCTTCAGAGT
GGACCCACAGGCCTGGTGACAGAGGACAACGAGCTGTCTGCTTATGGGCTGTGATGGAGGCCAGGAATCCCTGGCCTT
ACGAGGCACAGAGACTTCATCCCAGAAACCCGAGGGAGATCTCTCCAGTGGGCAGCAGCAACATCATCGGAATATGGAG
CCTCCGGTGAGCTGTCCGCACAGAGAGCAGCAGCTTGTGAGAAGATCCTTCCTTGGCACGTTACTACTCAGGCCTAGGAG
CTTTATAAAAGAGCGTTTGAGCCACTCTGAAAGCCCTACAGAGTCTACTGGAGACTTTCCTGCAGGACCTTCAGTTGGG
GAGGAAGCCTGACTTTATTTAGGTCTCAGGCTACTTGGGCCTCTTCGAGGATATGTGGGATTTTGTCTACTGCAAACCTG
TTTCTGGCTGACAATGGTTGGGCTCAGAGGCACTCAGCTTCACAACATCAATGGGACACGCCTCATCCTTGACTTCCTGT
GGCTACAGAAGCTTTCGAAAGCCTTGAGCTCTTTCAGACTGAACAGCTCTGCCAGTCTCAGCAGCCCATGAAGATCTC
AACTCCAGCTTCCTGGGTCTCCGTGTTGCTGGCCAGAATAGAGCTAGCTCTTTTGTTCAGATGGTTCTGCAAAGTTGG
CTGCTTGGAACCTAGGGATGTATGTACAAGTCCAGGCTGATGCAGTAGGGGGCACGGAATCCCGATGGAACACAGTA
TCTGACCCTAGGTGAGGGCAAGCTCCTTCCCACGCAGAGGACTGGAAATCTGGACCGTCAAGGCCTGTCTGCTATGTGG
CTGGGGCTCAGTGCTGATGGATGTGTGAGATCTCAGGAATGAGGAGTGAGAACCCTGGGCTCAGGACTAGGAAGACCTGT
CCATTTTTTTTTTTTTTAAATGCCACATGGACTTTTTATTCTTCACACCGATGTATTCAATGAGTGTAGAGAGAACTAC
TTAAGTCTTCCCAGGTACAAAGCATTACCTACCTGCAGAATAGCAACTGTTGTTATGGGTCTTGAGTTGGCAGCTACAG
CAAACAAGCACAAAGGAGCAGTTGGGGTGCAAGAAGATGGGGTGACGCGCCCCAAGGACAGACATTTGGGAATTAGTGGT
CTCCCTGATGCCCATAGTTCCCAGGAACCTCAGGTGGGTCTGCGGCAGCACAGTAGGAGTATTCTCCTACTTTAACTTT
TCTTGTGACAGTAGTTTAGGTTCAGAAAGAGGTCAACTCAGCAAGCCAGCTAGCCGCTTGGGGCACCAGACACACTGC
CCCCACCCCTGCTTATGTAGGCATTGGGAACCTTCACAGACCACTGGCTGTACAGTACCATCACCTGCTGATTCCA
GCAGGCCCCACCTTCTTGTGGAATCCTGGGAGCACTCCCTCTTACCCCTCACTGCCCCCACCCCTGCACATCAGCA
TTCATTAGATTTGCCCTGTAACGTCTGATTCTCCTTTATCTGGGTTGTAGATGGGGCATAGTGACTTCTAGAAACCTAA
CAAGGAATAAATGTAAGATGTGCTTTC

Characterization and Comparison of GTR Expression in Solid Tumors

Clin Cancer Res 25 (21), 6501-6510 (2019)

GTGGGCTCTTGAAACCCGAGCATGGCACAGCACGGGGCGATGGGCGCGTTTCGGGCCCTGTGCGGCCTGGCGCTGCTGTG
CGCGCTCAGCCTGGGTGAGCGCCCCACCGGGGTCCCGGGTGCGGCCCTGGGCGCCTCTGCTTGGGACGGGAACGGACG
CGCGCTGCTGCCGGGTTACACGACGCGCTGCTGCCGCGATTACCCGGGCGAGGAGTGTGTTCCGAGTGGGACTGCATG
TGTGTCCAGCCTGAATTCCACTGCGGAGACCCTTGCTGCACGACCTGCCGGCACCACCCTTGTCCCCAGGCCAGGGGGT
ACAGTCCCAGGGGAAATTCAAGTTTTGGCTTCCAGTGTATCGACTGTGCCTCGGGGACCTTCTCCGGGGGCCACGAAGGCC
ACTGCAAACCTTGACAGACTGCACCCAGTTCGGGTTTCTCACTGTGTTCCCTGGGAACAAGACCCACAACGCTGTGTGC
GTCCAGGGTCCCCGCCGGCAGAGCCGCTTGGGTGGCTGACCGTCTGCTCCTCCTGGCCGTGGCCGCCTGCGTCTCCTCCT
GACCTCGGGCCAGCTTGGACTGCACATCTGGCAGCTGAGGAAGACCCAGCTGCTGCTGGAGGTGCCGCCGTCGACCGAAG
ACGCCAGAAGCTGCCAGTTCCCGAGGAAGAGCGGGGCGAGCGATCGGCAGAGGAGAAGGGGCGGCTGGGAGACCTGTGG
GTGTGAGCCTGGCCGTCTCCGGGGCCACCGACCGCAGCCAGCCCTCCCCAGGAGCTCCCCAGGCCGAGGGGCTCTGC
GTTCTGCTCTGGGCGGGGCCCTGCTCCCTGGCAGCAGAAGTGGGTGCAGGAAGTGGCAGTGACCAGCGCCCTGGACCA
TGCAGTTTCGGCGCGCGGGCTGGGCCCTGCAGGAGGGAGAGAGACACAGTCATGGCCCCCTTCTCCTTGTGTGGCC
TGATGGGGTGGGTCTTAGGACGGGAGGCTGTGTCCGTGGGTGTGAGTGGCCAGCACGGGACCCGGCTGCAGGGGACCT
TCAATAAACACTTGTCCAGTGA

GITR ligation enhances functionality of tumor-infiltrating T cells in hepatocellular carcinoma

Int J Cancer 145 (4), 1111-1124 (2019)

GTGGGCTCTTGAAACCCGAGCATGGCACAGCACGGGGCGATGGGCGCGTTTCGGGGCCCTGTGCGGCCTGGCGCTGCTGTG
CGCGCTCAGCTGGGTGACGCGCCCCACCGGGGTCCCGGGTGCGGCCCTGGGCGCCTCCTGCTTGGGACGGGAACGGACG
CGCGCTGCTGCCGGGTTCACACGACGCGCTGCTGCCGCGATTACCGGGCGAGGAGTGCTGTTCCGAGTGGGACTGCATG
TGTGTCCAGCCTGAATTCCACTGCGGAGACCCTTGCTGCACGACCTGCCGGCACCACCCTTGTCCTCCAGGCCAGGGGGT
ACAGTCCCAGGGGAAATTCAGTTTTGGCTTCCAGTGTATCGACTGTGCCTCGGGGACCTTCTCCGGGGGCCACGAAGGCC
ACTGCAAACCTTGGACAGACTGCACCCAGTTCGGGTTTCTCACTGTGTTCCCTGGGAACAAGACCCACAACGCTGTGTGC
GTCCCAGGGTCCCCGCCGGCAGAGCCGCTTGGGTGGCTGACCGTCGTCCTCCTGGCCGTGGCCGCCTGCGTCCTCCTCCT
GACCTCGGCCCAGCTTGGACTGCACATCTGGCAGCTGAGGAAGACCCAGCTGCTGCTGGAGGTGCCGCCGTGACCCGAAG
ACGCCAGAAGTGCCAGTTCCTCCGAGGAAGAGCGGGGCGAGCGATCGGCAGAGGAGAAGGGGCGGCTGGGAGACCTGTGG
GTGTGAGCCTGGCCGTCCTCCGGGGCCACCGACCGCAGCCAGCCCCTCCCCAGGAGTCCCCAGGCCGCGAGGGGCTCTGC
GTTCTGCTCTGGGCCGGGCCCTGCTCCCTGGCAGCAGAAGTGGGTGCAGGAAGGTGGCAGTGACCAGCGCCCTGGACCA
TGCAGTTCGGCGCGCGGGCTGGGCCCTGCAGGAGGGAGAGAGACACAGTCATGGCCCCCTTCTCCTTGTCTGGCCC
TGATGGGGTGGGTCTTAGGACGGGAGGCTGTGTCCGTGGGTGTGCAGTGCCAGCACGGGACCCGGCTGCAGGGGACCT
TCAATAAACACTTGTCCAGTGA

Soluble glucocorticoid-induced tumor necrosis factor receptor regulates Helios expression in myasthenia gravis

J Transl Med 17 (1), 168 (2019)

GTGGGCTCTTGAAACCCGAGCATGGCACAGCACGGGGCGATGGGCGCGTTTCGGGGCCCTGTGCGGCCTGGCGCTGCTGTG
CGCGCTCAGCTGGGTGACGCGCCCCACCGGGGTCCCGGGTGCGGCCCTGGGCGCCTCCTGCTTGGGACGGGAACGGACG
CGCGCTGCTGCCGGGTTCACACGACGCGCTGCTGCCGCGATTACCGGGCGAGGAGTGCTGTTCCGAGTGGGACTGCATG
TGTGTCCAGCCTGAATTCCACTGCGGAGACCCTTGCTGCACGACCTGCCGGCACCACCCTTGTCCTCCAGGCCAGGGGGT
ACAGTCCCAGGGGAAATTCAGTTTTGGCTTCCAGTGTATCGACTGTGCCTCGGGGACCTTCTCCGGGGGCCACGAAGGCC
ACTGCAAACCTTGGACAGACTGCACCCAGTTCGGGTTTCTCACTGTGTTCCCTGGGAACAAGACCCACAACGCTGTGTGC
GTCCCAGGGTCCCCGCCGGCAGAGCCGCTTGGGTGGCTGACCGTCGTCCTCCTGGCCGTGGCCGCCTGCGTCCTCCTCCT
GACCTCGGCCCAGCTTGGACTGCACATCTGGCAGCTGAGGAAGACCCAGCTGCTGCTGGAGGTGCCGCCGTGACCCGAAG
ACGCCAGAAGTGCCAGTTCCTCCGAGGAAGAGCGGGGCGAGCGATCGGCAGAGGAGAAGGGGCGGCTGGGAGACCTGTGG
GTGTGAGCCTGGCCGTCCTCCGGGGCCACCGACCGCAGCCAGCCCCTCCCCAGGAGTCCCCAGGCCGCGAGGGGCTCTGC
GTTCTGCTCTGGGCCGGGCCCTGCTCCCTGGCAGCAGAAGTGGGTGCAGGAAGGTGGCAGTGACCAGCGCCCTGGACCA
TGCAGTTCGGCGCGCGGGCTGGGCCCTGCAGGAGGGAGAGAGACACAGTCATGGCCCCCTTCTCCTTGTCTGGCCC
TGATGGGGTGGGTCTTAGGACGGGAGGCTGTGTCCGTGGGTGTGCAGTGCCAGCACGGGACCCGGCTGCAGGGGACCT
TCAATAAACACTTGTCCAGTGA

Costimulation of type-2 innate lymphoid cells by GITR promotes effector function and ameliorates type 2 diabetes

Nat Commun 10 (1), 713 (2019)

GTGGGCTCTTGAAACCCGAGCATGGCACAGCACGGGGCGATGGGCGCGTTTCGGGGCCCTGTGCGGCCTGGCGCTGCTGTG
CGCGCTCAGCTGGGTGACGCGCCCCACCGGGGTCCCGGGTGCGGCCCTGGGCGCCTCCTGCTTGGGACGGGAACGGACG
CGCGCTGCTGCCGGGTTCACACGACGCGCTGCTGCCGCGATTACCGGGCGAGGAGTGCTGTTCCGAGTGGGACTGCATG
TGTGTCCAGCCTGAATTCCACTGCGGAGACCCTTGCTGCACGACCTGCCGGCACCACCCTTGTCCTCCAGGCCAGGGGGT
ACAGTCCCAGGGGAAATTCAGTTTTGGCTTCCAGTGTATCGACTGTGCCTCGGGGACCTTCTCCGGGGGCCACGAAGGCC
ACTGCAAACCTTGGACAGACTGCACCCAGTTCGGGTTTCTCACTGTGTTCCCTGGGAACAAGACCCACAACGCTGTGTGC
GTCCCAGGGTCCCCGCCGGCAGAGCCGCTTGGGTGGCTGACCGTCGTCCTCCTGGCCGTGGCCGCCTGCGTCCTCCTCCT
GACCTCGGCCCAGCTTGGACTGCACATCTGGCAGCTGAGGAAGACCCAGCTGCTGCTGGAGGTGCCGCCGTGACCCGAAG

ACGCCAGAAGCTGCCAGTTCCCCGAGGAAGAGCGGGGCGAGCGATCGGCAGAGGAGAAGGGGCGGCTGGGAGACCTGTGG
GTGTGAGCCTGGCCGTCCTCCGGGGCCACCGACCGCAGCCAGCCCCTCCCCAGGAGCTCCCCAGGCCGAGGGGCTCTGC
GTTCTGCTCTGGGCCGGGCCCTGCTCCCCTGGCAGCAGAAGTGGGTGCAGGAAGGTGGCAGTGACCAGCGCCCTGGACCA
TGCAGTTCGGCGGCCGCGGCTGGGCCCTGCAGGAGGGAGAGAGACACAGTCATGGCCCCCTTCCTCCCTTGCTGGCCC
TGATGGGGTGGGGTCTTAGGACGGGAGGCTGTGTCCGTGGGTGTGCAGTGCCAGCACGGGACCCGGCTGCAGGGGACCT
TCAATAAACACTTGTCCAGTGA

Overexpression of Regulatory T Cell-Related Markers (FOXP3, CTLA-4 and GITR) by
Peripheral Blood Mononuclear Cells from Patients with Breast Cancer

Asian Pac J Cancer Prev 19 (11), 3019-3025 (2018)

GTGGGCTCTTGAAACCCGAGCATGGCACAGCACGGGGCGATGGGCGCGTTTCGGGCCCTGTGCGGCCTGGCGCTGCTGTG
CGCGCTCAGCCTGGGTGAGCGCCCCACCGGGGTCCCGGTGCGGCCCTGGGCGCCTCCTGCTTGGGACGGGAACGGACG
CGCGCTGCTGCCGGGTTACACGACGCGCTGCTGCCGCGATTACCGGGCGAGGAGTGCTGTTCCGAGTGGGACTGCATG
TGTGTCCAGCCTGAATTCCTACTGCGGAGACCTTGTCTGCACGACCTGCCGGCACCACCCTTGTCCCCAGGCCAGGGGT
ACAGTCCCAGGGGAAATTCAGTTTTGGCTTCCAGTGTATCGACTGTGCCTCGGGGACCTTCTCCGGGGGCCACGAAGGCC
ACTGCAAACCTTGACAGACTGCACCCAGTTCGGGTTTCTCACTGTGTTCCCTGGGAACAAGACCCACAACGCTGTGTGC
GTCCCAGGGTCCCCGCCGCGCAGAGCCGCTTGGGTGGCTGACCGTCGTCTCCTGCGCGTGGCCGCTGCGTCTCTCCT
GACCTCGGCCAGCTTGGACTGCACATCTGGCAGCTGAGGAAGACCCAGCTGCTGCTGGAGGTGCCGCCGTCGACCGAAG
ACGCCAGAAGCTGCCAGTTCCCCGAGGAAGAGCGGGGCGAGCGATCGGCAGAGGAGAAGGGGCGGCTGGGAGACCTGTGG
GTGTGAGCCTGGCCGTCCTCCGGGGCCACCGACCGCAGCCAGCCCCTCCCCAGGAGCTCCCCAGGCCGAGGGGCTCTGC
GTTCTGCTCTGGGCCGGGCCCTGCTCCCCTGGCAGCAGAAGTGGGTGCAGGAAGGTGGCAGTGACCAGCGCCCTGGACCA
TGCAGTTCGGCGGCCGCGGCTGGGCCCTGCAGGAGGGAGAGAGAGACACAGTCATGGCCCCCTTCCTCCCTTGCTGGCCC
TGATGGGGTGGGGTCTTAGGACGGGAGGCTGTGTCCGTGGGTGTGCAGTGCCAGCACGGGACCCGGCTGCAGGGGACCT
TCAATAAACACTTGTCCAGTGA

Stimulation of CD25(+)CD4(+) regulatory T cells through GITR breaks
immunological self-tolerance

Nat Immunol 3 (2), 135-142 (2002)

GTGGGCTCTTGAAACCCGAGCATGGCACAGCACGGGGCGATGGGCGCGTTTCGGGCCCTGTGCGGCCTGGCGCTGCTGTG
CGCGCTCAGCCTGGGTGAGCGCCCCACCGGGGTCCCGGTGCGGCCCTGGGCGCCTCCTGCTTGGGACGGGAACGGACG
CGCGCTGCTGCCGGGTTACACGACGCGCTGCTGCCGCGATTACCGGGCGAGGAGTGCTGTTCCGAGTGGGACTGCATG
TGTGTCCAGCCTGAATTCCTACTGCGGAGACCTTGTCTGCACGACCTGCCGGCACCACCCTTGTCCCCAGGCCAGGGGT
ACAGTCCCAGGGGAAATTCAGTTTTGGCTTCCAGTGTATCGACTGTGCCTCGGGGACCTTCTCCGGGGGCCACGAAGGCC
ACTGCAAACCTTGACAGACTGCACCCAGTTCGGGTTTCTCACTGTGTTCCCTGGGAACAAGACCCACAACGCTGTGTGC
GTCCCAGGGTCCCCGCCGCGCAGAGCCGCTTGGGTGGCTGACCGTCGTCTCCTGCGCGTGGCCGCTGCGTCTCTCCT
GACCTCGGCCAGCTTGGACTGCACATCTGGCAGCTGAGGAAGACCCAGCTGCTGCTGGAGGTGCCGCCGTCGACCGAAG
ACGCCAGAAGCTGCCAGTTCCCCGAGGAAGAGCGGGGCGAGCGATCGGCAGAGGAGAAGGGGCGGCTGGGAGACCTGTGG
GTGTGAGCCTGGCCGTCCTCCGGGGCCACCGACCGCAGCCAGCCCCTCCCCAGGAGCTCCCCAGGCCGAGGGGCTCTGC
GTTCTGCTCTGGGCCGGGCCCTGCTCCCCTGGCAGCAGAAGTGGGTGCAGGAAGGTGGCAGTGACCAGCGCCCTGGACCA
TGCAGTTCGGCGGCCGCGGCTGGGCCCTGCAGGAGGGAGAGAGAGACACAGTCATGGCCCCCTTCCTCCCTTGCTGGCCC
TGATGGGGTGGGGTCTTAGGACGGGAGGCTGTGTCCGTGGGTGTGCAGTGCCAGCACGGGACCCGGCTGCAGGGGACCT
TCAATAAACACTTGTCCAGTGA

Identification of three novel mRNA splice variants of GITR

Cell Death Differ 7 (4), 408-410 (2000)

GTGGGCTCTTGAAACCCGAGCATGGCACAGCACGGGGCGATGGGCGCGTTTCGGGCCCTGTGCGGCCTGGCGCTGCTGTG
CGCGCTCAGCCTGGGTGAGCGCCCCACCGGGGTCCCGGTGCGGCCCTGGGCGCCTCCTGCTTGGGACGGGAACGGACG
CGCGCTGCTGCCGGGTTACACGACGCGCTGCTGCCGCGATTACCGGGCGAGGAGTGCTGTTCCGAGTGGGACTGCATG

TGTGTCCAGCCTGAATTCCACTGCGGAGACCCTTGCTGCACGACCTGCCGGCACCACCCTTGTCCCCAGGCCAGGGGGT
ACAGTCCCAGGGGAAATTCAGTTTTGGCTTCCAGTGTATCGACTGTGCCTCGGGGACCTTCTCCGGGGGCCACGAAGGCC
ACTGCAAACCTTGACAGACTGCACCCAGTTCGGGTTTCTCACTGTGTTCCCTGGGAACAAGACCCACAACGCTGTGTGC
GTCCCAGGGTCCCCGCCGGCAGAGCCGCTTGGGTGGCTGACCGTCGTCTCCTGCGCGTGGCCGCCTGCGTCTCTCCTCT
GACCTCGGCCCAGCTTGGAAGTGCACATCTGGCAGCTGAGGAAGACCCAGCTGCTGCTGGAGGTGCCGCCGTCGACCGAAG
ACGCCAGAAGTGCCAGTTCCCCGAGGAAGAGCGGGGCGAGCGATCGGCAGAGGAGAAGGGGCGGCTGGGAGACCTGTGG
GTGTGAGCCTGGCCGTCCTCCGGGGCCACCGACCGCAGCCAGCCCTCCCCAGGAGCTCCCCAGGCCGCAGGGGCTCTGC
GTTCTGCTCTGGGCCGGGCCCTGCTCCCTGGCAGCAGAAGTGGGTGCAGGAAGGTGGCAGTGACCAGCGCCCTGGACCA
TGCAGTTTCGGCGCCGCGGCTGGGCCCTGCAGGAGGGAGAGAGACACAGTCATGGCCCCCTTCTCCTTGTCTGGCCC
TGATGGGGTGGGGTCTTAGGACGGGAGGCTGTGTCCGTGGGTGTGCAGTGCCAGCACGGGACCCGGCTGCAGGGGACCT
TCAATAAACACTTGTCCAGTGA

Identification of a novel activation-inducible protein of the tumor necrosis
factor receptor superfamily and its ligand

J Biol Chem 274 (10), 6056-6061 (1999)

GTGGGCTCTTGAAACCCGAGCATGGCACAGCACGGGGCGATGGGCGCGTTTCGGGCCCTGTGCGGCCTGGCGCTGCTGTG
CGCGCTCAGCCTGGGTGACGCGCCCCACCGGGGTCCCGGTGCGGCCCTGGGCGCCTCCTGCTTGGGACGGGAACGGACG
CGCGCTGCTGCCGGGTTACACGACGCGCTGCTGCCGCGATTACCGGGCGAGGAGTGTGTTCCGAGTGGGACTGCATG
TGTGTCCAGCCTGAATTCCACTGCGGAGACCCTTGCTGCACGACCTGCCGGCACCACCCTTGTCCCCAGGCCAGGGGGT
ACAGTCCCAGGGGAAATTCAGTTTTGGCTTCCAGTGTATCGACTGTGCCTCGGGGACCTTCTCCGGGGGCCACGAAGGCC
ACTGCAAACCTTGACAGACTGCACCCAGTTCGGGTTTCTCACTGTGTTCCCTGGGAACAAGACCCACAACGCTGTGTGC
GTCCCAGGGTCCCCGCCGGCAGAGCCGCTTGGGTGGCTGACCGTCGTCTCCTGCGCGTGGCCGCCTGCGTCTCTCCTCT
GACCTCGGCCCAGCTTGGAAGTGCACATCTGGCAGCTGAGGAAGACCCAGCTGCTGCTGGAGGTGCCGCCGTCGACCGAAG
ACGCCAGAAGTGCCAGTTCCCCGAGGAAGAGCGGGGCGAGCGATCGGCAGAGGAGAAGGGGCGGCTGGGAGACCTGTGG
GTGTGAGCCTGGCCGTCCTCCGGGGCCACCGACCGCAGCCAGCCCTCCCCAGGAGCTCCCCAGGCCGCAGGGGCTCTGC
GTTCTGCTCTGGGCCGGGCCCTGCTCCCTGGCAGCAGAAGTGGGTGCAGGAAGGTGGCAGTGACCAGCGCCCTGGACCA
TGCAGTTTCGGCGCCGCGGCTGGGCCCTGCAGGAGGGAGAGAGACACAGTCATGGCCCCCTTCTCCTTGTCTGGCCC
TGATGGGGTGGGGTCTTAGGACGGGAGGCTGTGTCCGTGGGTGTGCAGTGCCAGCACGGGACCCGGCTGCAGGGGACCT
TCAATAAACACTTGTCCAGTGA

Identification of a new member of the tumor necrosis factor family and its
receptor, a human ortholog of mouse GITR

Curr Biol 9 (4), 215-218 (1999)

GTGGGCTCTTGAAACCCGAGCATGGCACAGCACGGGGCGATGGGCGCGTTTCGGGCCCTGTGCGGCCTGGCGCTGCTGTG
CGCGCTCAGCCTGGGTGACGCGCCCCACCGGGGTCCCGGTGCGGCCCTGGGCGCCTCCTGCTTGGGACGGGAACGGACG
CGCGCTGCTGCCGGGTTACACGACGCGCTGCTGCCGCGATTACCGGGCGAGGAGTGTGTTCCGAGTGGGACTGCATG
TGTGTCCAGCCTGAATTCCACTGCGGAGACCCTTGCTGCACGACCTGCCGGCACCACCCTTGTCCCCAGGCCAGGGGGT
ACAGTCCCAGGGGAAATTCAGTTTTGGCTTCCAGTGTATCGACTGTGCCTCGGGGACCTTCTCCGGGGGCCACGAAGGCC
ACTGCAAACCTTGACAGACTGCACCCAGTTCGGGTTTCTCACTGTGTTCCCTGGGAACAAGACCCACAACGCTGTGTGC
GTCCCAGGGTCCCCGCCGGCAGAGCCGCTTGGGTGGCTGACCGTCGTCTCCTGCGCGTGGCCGCCTGCGTCTCTCCTCT
GACCTCGGCCCAGCTTGGAAGTGCACATCTGGCAGCTGAGGAAGACCCAGCTGCTGCTGGAGGTGCCGCCGTCGACCGAAG
ACGCCAGAAGTGCCAGTTCCCCGAGGAAGAGCGGGGCGAGCGATCGGCAGAGGAGAAGGGGCGGCTGGGAGACCTGTGG
GTGTGAGCCTGGCCGTCCTCCGGGGCCACCGACCGCAGCCAGCCCTCCCCAGGAGCTCCCCAGGCCGCAGGGGCTCTGC
GTTCTGCTCTGGGCCGGGCCCTGCTCCCTGGCAGCAGAAGTGGGTGCAGGAAGGTGGCAGTGACCAGCGCCCTGGACCA
TGCAGTTTCGGCGCCGCGGCTGGGCCCTGCAGGAGGGAGAGAGACACAGTCATGGCCCCCTTCTCCTTGTCTGGCCC
TGATGGGGTGGGGTCTTAGGACGGGAGGCTGTGTCCGTGGGTGTGCAGTGCCAGCACGGGACCCGGCTGCAGGGGACCT
TCAATAAACACTTGTCCAGTGA

A new member of the tumor necrosis factor/nerve growth factor receptor family inhibits T cell receptor-induced apoptosis

Proc Natl Acad Sci U S A 94 (12), 6216-6221 (1997)

GTGGGCTCTTGAACCCGAGCATGGCACAGCACGGGGCGATGGGCGCGTTTCGGGCCCTGTGCGGCCTGGCGCTGCTGTG
CGCGCTCAGCCTGGGTGAGCGCCCCACCGGGGTCCCGGGTGCGGCCCTGGGCGCCTCCTGCTTGGGACGGGAACGGACG
CGCGCTGCTGCCGGGTTCACACGACGCGCTGCTGCCGCGATTACCCGGGCGAGGAGTGCTGTTCCGAGTGGGACTGCATG
TGTGTCCAGCCTGAATTCACCTGCGGAGACCCTTGCTGCACGACCTGCCGGCACCACCCTTGTCCTCCAGGCCAGGGGGT
ACAGTCCCAGGGGAAATTCAGTTTTGGCTTCCAGTGTATCGACTGTGCCTCGGGGACCTTCTCCGGGGGCCACGAAGGCC
ACTGCAAACCTTGACAGACTGCACCCAGTTCGGGTTTCTCACTGTGTTCCCTGGGAACAAGACCCACAACGCTGTGTGC
GTCCAGGGTCCCCGCCGGCAGAGCCGCTTGGGTGGCTGACCGTCGTCTCCTGGCCGTGGCCGCTGCGTCTCTCCTCCT
GACCTCGGCCCAGCTTGGACTGCACATCTGGCAGCTGAGGAAGACCCAGCTGCTGCTGGAGGTGCCGCCGTCGACCGAAG
ACGCCAGAAGCTGCCAGTTCCTCCGAGGAAGAGCGGGGCGAGCGATCGGCAGAGGAGAAGGGGCGGCTGGGAGACCTGTGG
GTGTGAGCCTGGCCGTCTCCGGGGCCACCGACCGCAGCCAGCCCCTCCCCAGGAGCTCCCCAGGCCGACGGGGCTCTGC
GTTCTGCTCTGGGCCGGGCCCTGCTCCCTGGCAGCAGAAGTGGGTGCAGGAAGTGGCAGTGACCAGCGCCCTGGACCA
TGCAGTTCGGCGCGCGGGCTGGGCCCTGCAGGAGGGAGAGAGACACAGTCATGGCCCCCTTCTCCTTGCTGGCCC
TGATGGGTGGGTCTTAGGACGGGAGGCTGTGTCCGTGGGTGTGAGTGGCCAGCACGGGACCCGGCTGCAGGGGACCT
TCAATAAACACTTGTCCAGTGA

Measuring the T-cell down-regulation of TCR-zeta, ZAP-70 and CD28 in arthritis patients: An old tool for new biomarkers

Eur J Immunol 49 (12), 2195-2203 (2019)

ACACTTCGGGTTCCTCGGGGAGGAGGGGCTGGAACCTAGCCCATCGTCAGGACAAAGATGCTCAGGCTGCTCTTGGCTC
TCAACTTATTCCTTCAATTCAAGTAACAGGAAACAAGATTTTGGTGAAGCAGTCGCCCATGCTTGTAGCGTACGACAAT
GCGGTCAACCTTAGCTGGAAACACCTTTGTCCAAGTCCCTATTTCCCGGACCTTCTAAGCCCTTTTGGGTGCTGGTGGT
GGTTGGTGGAGTCTGGCTTGCTATAGCTTGCTAGTAACAGTGGCCTTTATTATTTTCTGGGTGAGGAGTAAGAGGAGCA
GGCTCCTGCACAGTGAATGAACATGACTCCCCGCCGCCCGGGGCCACCCGCAAGCATTACCAGCCCTATGCCCCA
CCACGCGACTTCGACGCTATCGCTCCTGACACGGACGCTATCCAGAAGCCAGCCGGCTGGCAGCCCCATCTGCTCAA
TATCACTGCTCTGGATAGGAAATGACCGCCATCTCCAGCCGGCCACCTCAGGCCCTGTTGGGCCACCAATGCCAATTTT
TCTCGAGTGACTAGACCAAATATCAAGATCATTTTGAGACTCTGAAATGAAGTAAAAGAGATTTCTGTGACAGGCCAAG
TCTTACAGTGCCATGGCCACATTCCAATTACCATGTACTTAGTGACTTGACTGAGAAGTTAGGGTAGAAAACAAAAAG
GGAGTGGATTCTGGGAGCCTCTTCCCTTTCTCACTACCTGCACATCTCAGTCAAGCAAAGTGTGGTATCCACAGACATT
TTAGTTGCAGAAGAAAGGCTAGGAAATCATTCCTTTTGGTTAAATGGGTGTTTAACTTTTGGTTAGTGGGTAAACGGG
GTAAGTTAGAGTAGGGGGAGGGATAGGAAGACATATTTAAAAACCATTAAACACTGTCTCCCACTCATGAAATGAGCCA
CGTAGTTCTATTTAATGCTGTTTTCTTTAGTTTAGAAATACATAGACATTGTCTTTATGAATTCTGATCATATTTAG
TCATTTTGACCAAATGAGGGATTTGGTCAAATGAGGGATTCCCTCAAAGCAATATCAGGTAAACCAAGTTGCTTTCCTCA
CTCCCTGTCATGAGACTTCAGTGTTAATGTTCCACAATATACTTTGAAAGAATAAAATAGTTCTCCTACATGAAGAAAGA
ATATGTCAGGAAATAAGGTCACTTTATGTCAAAATATTTGAGTACTATGGGACCTGGCGCAGTGGCTCATGCTTGTAAAT
CCCAGCACTTTGGGAGGCCGAGGTGGGCAGATCACTTGAGATCAGGACCAGCTGGTCAAGATGGTGAAACTCCGTCTGT
ACTAAAAATACAAAATTTAGCTTGGCCTGGTGGCAGGCACCTGTAATCCCAGCTGCCAAGAGGCTGAGGCATGAGAATC
GCTTGAACCTGGCAGGCGGAGGTTGCAGTGAGCCGAGATAGTGCCACAGCTCTCCAGCCTGGGCGACAGAGTGAGACTCC
ATCTCAAACAACAACAACAACAACAACAACAACAACAACAACCACAAAATTATTTGAGTACTGTGAAGGATTATTTGTCTAA
CAGTTCATTCCAATCAGACCAGGTAGGAGCTTTCCTGTTTCATATGTTTCAGGGTTGCACAGTTGGTCTCTTTAATGTCTG
GTGTGGAGATCCAAAGTGGGTTGTGGAAGAGCGTCCATAGGAGAAGTGAGAATACTGTGAAAAAGGGATGTTAGCATTC
ATTAGAGTATGAGGATGAGTCCCAAGAAGTTCTTTGGAAGGAGGACGAATAGAATGGAGTAATGAAATCTTGCCATGT
GCTGAGGAGATAGCCAGCATTAGGTGACAATCTTCCAGAAGTGGTCAGGCAGAAGGTGCCCTGGTGAGAGCTCCTTTACA
GGGACTTTATGTGGTTTAGGGCTCAGAGCTCCAAAACCTCTGGGCTCAGCTGCTCCTGTACCTTGGAGGTCCATTACATG
GGAAAGTATTTTGAATGTGTCTTTTGAAGAGAGCATCAGAGTCTTAAGGGACTGGGTAAGGCCTGACCCTGAAATGAC
CATGGATATTTTCTACCTACAGTTTGAAGTCAACTAGAAATATGCCTGGGGACCTTGAAGAATGGCCCTTCAGTGGCCCTC

ACCATTTGTTTCATGCTTCAGTTAATTCAGGTGTTGAAGGAGCTTAGGTTTTAGAGGCACGTAGACTTGGTTCAAGTCTCG
 TTAGTAGTTGAATAGCCTCAGGCAAGTCACTGCCACCTAAGATGATGGTTCTTCAACTATAAAATGGAGATAATGGTTA
 CAAATGTCTCTCCTATAGTATAATCTCCATAAGGGCATGGCCCAAGTCTGTCTTTGACTCTGCCTATCCCTGACATTTA
 GTAGCATGCCCCGACATACAATGTTAGCTATTGGTATTATTGCCATATAGATAAAATTATGTATAAAAAATTAAGTGGGCAA
 TAGCCTAAGAAGGGGGGAATATTGTAACACAAATTTAAACCCACTACGCAGGGATGAGGTGCTATAATATGAGGACCTTT
 TAACTTCCATCATTTTCTGTTTCTTGAATAGTTTATCTTGTAATGAAATATAAGGCACCTCCCCTTTTATGTATAGA
 AAGAGGTCTTTTAATTTTTTTTTAATGTGAGAAGGAAGGGAGGAGTAGGAATCTTGAGATTCCAGATCGAAAATACTGTA
 CTTTGGTTGATTTTAAAGTGGGCTTCCATTCCATGGATTTAATCAGTCCCAAGAAGATCAAACCTCAGCAGTACTTGGGTG
 CTGAAGAACTGTTGGATTTACCCTGGCACGTGTGCCACTTGCCAGCTTCTTGGGCACACAGAGTTCTTCAATCCAAGTTA
 TCAGATTGTATTTGAAAATGACAGAGCTGGAGAGTTTTTTGAAATGGCAGTGGCAAATAAATAAATACTTTTTTTTTAAT
 GGAAAGACTTGATCTATGGTAATAAATGATTTTGTCTGACTGGAAAAATAGGCCTACTAAAGATGAATCACACTTGA
 GATGTTTCTTACTCACTCTGCACAGAAACAAAGAAGAAATGTTATACAGGGAAGTCCGTTTTCTACTATTAGTATGAACCA
 AGAAATGGTTCAAAAAACAGTGGTAGGAGCAATGCTTTCATAGTTTCAGATATGGTAGTTATGAAGAAAACAATGTCATTT
 GCTGCTATTATTGTAAGAGTCTTATAATTAATGGTACTCCTATAATTTTTGATTGTGAGCTCACCTATTTGGGTAAAGCA
 TGCCAATTTAAAGAGACCAAGTGTATGTACATTATGTTCTACATATTCAGTGATAAAATTACTAACTACTATATGTCTG
 CTTTAAATTTGTACTTTAATATTGTCTTTTGGTATTAAGAAAGATATGCTTTCAGAATAGATATGCTTCGCTTTGGCAAG
 GAATTTGGATAGAAGTTGCTATTTAAAAGAGGTGTGGGGTAAATCCTTGTATAAATCTCCAGTTTAGCCTTTTTTGA
 AGCTAGACTTTCAAATACTAATTTCACTTCAAGCAGGGTACGTTTCTGGTTTGTGCTTGACTTCAGTCACAATTTCTT
 ATCAGACCAATGGCTGACCTCTTTGAGATGTCAGGCTAGGCTTACCTATGTGTTCTGTGTCATGTGAATGCTGAGAAGTT
 TGACAGAGATCCAACTTCAGCCTTGACCCATCAGTCCCTCGGGTAACTAACTGAGCCACCGGTCTCATGGCTATTTT
 AATGAGGGTATTGATGGTTAAATGCATGTCTGATCCCTTATCCCAGCCATTTGCACTGCCAGCTGGGAACATATACCAGAC
 CTGGATACTGATCCCAAAGTGTTAAATTCAACTACATGCTGGAGATTAGAGATGGTGCCAATAAAGGACCCAGAACCAGG
 ATCTTGATTGCTATAGACTTATTAATAATCCAGGTCAAAGAGAGTGACACACACTCTCTCAAGACCTGGGGTGAGGGAGT
 CTGTGTTATCTGCAAGGCCATTTGAGGCTCAGAAAGTCTCTCTTTCCTATAGATATATGCATACTTTCTGACATATAGGA
 ATGTATCAGGAATACTCAACCATCACAGGCATGTTCCCTACCTCAGGGCCTTTACATGTCTGTTTACTCTGTCTAGAATG
 TCCTTCTGTAGATGACCTGGCTTGCCTCGTCACCCTTCAGGTCCCTGCTCAAGTGTATCTTCTCCCCTAGTTAACTAC
 CCCACACCTGTCTGCTTTCCCTGCTTATTTTCTCCATAGCATTTTACCATCTCTTACATTAGACATTTTCTTATTTA
 TTTGTAGTTTATAAGCTTCATGAGGCAAGTAACTTTGCTTTGTTTCTGCTGTATCTCCAGTGCCAGAGCAGTGCCCTGG
 TATATAATAAATATTTATTGACTGAGTGAA

[Association of ICOS and CD28 single nucleotide polymorphisms with pulmonary tuberculosis susceptibility]

Zhonghua Yi Xue Za Zhi 99 (44), 3466-3470 (2019)

AACTTTCGGGTTCTCGGGGAGGAGGGGCTGGAACCTAGCCCATCGTCAGGACAAAGATGCTCAGGCTGCTCTTGGCTC
 TCAACTTATTCCTTCAATTCAAGTAACAGGAAACAAGATTTTGGTGAAGCAGTCGCCCATGCTTGTAGCGTACGACAAT
 GCGGTCAACCTTAGCTGGAAACACCTTTGTCCAAGTCCCCTATTTCCCGGACCTTCTAAGCCCTTTTGGGTGCTGGTGGT
 GGTGGTGGAGTCCTGGCTTGCTATAGCTTGCTAGTAACAGTGGCCTTTATTATTTTCTGGGTGAGGAGTAAGAGGAGCA
 GGCTCCTGCACAGTGAATGACATGAACATGACTCCCCGCCGCCCGGGCCACCCGCAAGCATTACCAGCCCTATGCCCCA
 CCACGCGACTTCGCAGCCTATCGCTCCTGACACGGACGCCTATCCAGAAGCCAGCCGGCTGGCAGCCCCATCTGCTCAA
 TACTACTGCTCTGGATAGGAAATGACCGCCATCTCCAGCCGGCCACCTCAGGCCCTGTTGGGCCACCAATGCCAATTTT
 TCTCGAGTGACTAGACCAAATATCAAGATCATTTTGAGACTCTGAAATGAAGTAAAAGAGATTTTCTGTGACAGGCCAAG
 TCTTACAGTGCCATGGCCACATTCCAATTACCATGTACTTAGTGACTTGACTGAGAAGTTAGGGTAGAAAACAAAAAG
 GGAGTGGATTCTGGGAGCCTCTTCCCTTTCTCACTCACCTGCACATCTCAGTCAAGCAAAGTGTGGTATCCACAGACATT
 TTAGTTGCAGAAGAAAGGCTAGGAAATCATTCCTTTTGGTTAAATGGGTGTTTAACTTTTGGTTAGTGGGTAAACGGG
 GTAAGTTAGAGTAGGGGGAGGGATAGGAAGACATATTTAAAAACCATTAACACTGTCTCCCCTCATGAAATGAGCCA
 CGTAGTTCTATTTAATGCTGTTTTCTTTAGTTTGAATAACATAGACATTGTCTTTATGAATTCTGATCATATTTAG
 TCATTTTGACCAAATGAGGGATTTGGTCAAATGAGGGATTCCCTCAAAGCAATATCAGGTAAACCAAGTTGCTTTCTCA
 CTCCCTGTCATGAGACTTCAGTGTTAATGTTTCAATATACTTTGAAAGAATAAAATAGTTCTCCTACATGAAGAAAGA

ATATGTCAGGAAATAAGGTCACCTTTATGTCAAAATTATTTGAGTACTATGGGACCTGGCGCAGTGGCTCATGCTTGTAAAT
 CCCAGCACTTTGGGAGGCCGAGGTGGGCAGATCACTTGAGATCAGGACCAGCCTGGTCAAGATGGTGAAACTCCGTCTGT
 ACTAAAAATACAAAATTTAGCTTGGCCTGGTGGCAGGCACCTGTAATCCCAGCTGCCAAGAGGCTGAGGCATGAGAAATC
 GCTTGAACCTGGCAGGCGGAGGTTGCAGTGAGCCGAGATAGTGCCACAGCTCTCCAGCCTGGGCGACAGAGTGAGACTCC
 ATCTCAAACAACAACAACAACAACAACAACAACAACAACCACAAAATTATTTGAGTACTGTGAAGGATTATTTGTCTAA
 CAGTTCATTCCAATCAGACCAGGTAGGAGCTTTCCTGTTTTCATATGTTTCAGGGTTGCACAGTTGGTCTCTTTAATGTCTG
 GTGTGGAGATCCAAAGTGGGTTGTGGAAAGAGCGTCCATAGGAGAAGTGAGAATACTGTGAAAAAGGGATGTTAGCATTC
 ATTAGAGTATGAGGATGAGTCCCAAGAAGGTTCTTTGGAAGGAGGACGAATAGAATGGAGTAATGAAATTCTTGCCATGT
 GCTGAGGAGATAGCCAGCATTAGGTGACAATCTTCCAGAAGTGGTCAGGCAGAAGGTGCCCTGGTGAGAGCTCCTTTACA
 GGGACTTTATGTGGTTTAGGGCTCAGAGCTCCAAAACCTCTGGGCTCAGCTGCTCCTGTACCTTGGAGGTCCATTACATG
 GGAAAGTATTTTGAATGTGTCTTTTGAAGAGAGCATCAGAGTTCTTAAGGGACTGGGTAAGGCCTGACCCTGAAATGAC
 CATGGATATTTTCTACCTACAGTTTGAGTCAACTAGAATATGCCTGGGGACCTTGAAGAATGGCCCTTCAGTGGCCCTC
 ACCATTTGTTTCATGCTTCAGTTAATTCAGGTGTTGAAGGAGCTTAGGTTTTAGAGGCACGTAGACTTGGTTCAAGTCTCG
 TTAGTAGTTGAATAGCCTCAGGCAAGTCACTGCCACCTAAGATGATGGTTCTTCAACTATAAAATGGAGATAATGGTTA
 CAAATGTCTCTTCTATAGTATAATCTCCATAAGGGCATGGCCCAAGTCTGTCTTTGACTCTGCCTATCCCTGACATTTA
 GTAGCATGCCCCACATACAATGTTAGCTATTGGTATTATTGCCATATAGATAAAATTATGTATAAAAAATTAAGTGGGCAA
 TAGCCTAAGAAGGGGGGAATATTGTAACACAAATTTAAACCCACTACGCAGGGATGAGGTGCTATAATATGAGGACCTTT
 TAACTTCCATCATTTTCTGTTTTCTTGAAATAGTTTATCTTGTAATGAAATATAAGGCACCTCCCACTTTTATGTATAGA
 AAGAGGTCTTTTAATTTTTTTTTAATGTGAGAAGGAAGGGAGGAGTAGGAATCTTGAGATTCCAGATCGAAAATACTGTA
 CTTTGGTTGATTTTAAAGTGGGCTTCCATTCATGGATTTAATCAGTCCCAAGAAGATCAAACCTCAGCAGTACTTGGGTG
 CTGAAGAACTGTTGGATTTACCCTGGCACGTGTGCCACTTGCCAGCTTCTTGGGCACACAGAGTTCTTCAATCCAAGTTA
 TCAGATTGTATTTGAAAATGACAGAGCTGGAGAGTTTTTTTGAATGGCAGTGGCAAAATAAATAAATACTTTTTTTTAAAT
 GGAAAGACTTGATCTATGGTAATAAATGATTTTGTCTTCTGACTGGAAAAATAGGCCTACTAAAGATGAATCACACTTGA
 GATGTTTCTTACTCACTCTGCACAGAAACAAAGAAGAAATGTTATACAGGGAAGTCCGTTTTCTACTATTAGTATGAACCA
 AGAAATGGTTCAAAAACAGTGGTAGGAGCAATGCTTTCATAGTTTCAGATATGGTAGTTATGAAGAAAACAATGTCATTT
 GCTGCTATTATTGTAAGAGTCTTATAATTAATGGTACTCCTATAATTTTTGATTGTGAGCTCACCTATTTGGGTAAAGCA
 TGCCAATTTAAAGAGACCAAGTGTATGTACATTATGTTCTACATATTCAGTGATAAAATTAATAACTACTATATGTCTG
 CTTTAAATTTGACTTTAATATTGTCTTTTGGTATTAAGAAAGATATGCTTTCAGAATAGATATGCTTCGCTTTGGCAAG
 GAATTTGGATAGAACTTGCTATTTTAAAGAGGTGTGGGGTAAATCCTTGTATAAATCTCCAGTTTAGCCTTTTTTGA
 AGCTAGACTTTCAAATACTAATTTCACTTCAAGCAGGGTACGTTTCTGGTTTGTGTTGCTTGACTTCAGTCACAATTTCTT
 ATCAGACCAATGGCTGACCTCTTTGAGATGTCAGGCTAGGCTTACCTATGTGTTCTGTGTCATGTGAATGCTGAGAAGTT
 TGACAGAGATCCAACCTTCAGCCTTGACCCCATCAGTCCCTCGGGTAACTAACTGAGCCACCGGTCTCATGGCTATTTT
 AATGAGGGTATTGATGGTTAAATGCATGTCTGATCCCTTATCCCAGCCATTTGCACTGCCAGCTGGGAACATATACCAGAC
 CTGGATACTGATCCCAAAGTGTTAAATTCACTACATGCTGGAGATTAGAGATGGTGCCAATAAAGGACCCAGAACCAGG
 ATCTTGATTGCTATAGACTTATTAATAATCCAGGTCAAAGAGAGTGACACACACTCTCTCAAGACCTGGGGTGAGGGAGT
 CTGTGTTATCTGCAAGGCCATTTGAGGCTCAGAAAGTCTCTCTTTCTATAGATATATGCATACTTTCTGACATATAGGA
 ATGTATCAGGAATACTCAACCATCACAGGCATGTTCCCTACCTCAGGGCCTTTACATGTCCTGTTTACTCTGTCTAGAATG
 TCCTTCTGTAGATGACCTGGCTTGCCTCGTACCCTTCAGGTCCTTGCTCAAGTGTCATCTTCTCCCCTAGTTAACTAC
 CCCACACCTGTCTGCTTTCTTGTCTTATTTTTCTCCATAGCATTTTACCATCTCTTACATTAGACATTTTCTTATTTA
 TTTGTAGTTTATAAGCTTCATGAGGCAAGTAACTTTGCTTTGTTTCTTGCTGTATCTCCAGTGCCAGAGCAGTGCCTGG
 TATATAATAAAATATTTATTGACTGAGTGAA

Carboxyl-Terminal Src Kinase Binds CD28 upon Activation and Mutes Downstream
 Signaling

J Immunol 203 (4), 1055–1063 (2019)

AACTTCGGGTTCTCGGGGAGGAGGGGCTGGAACCTAGCCCATCGTCAGGACAAAGATGCTCAGGCTGCTCTTGGCTC
 TCAACTTATTCCTTCAATTCAAGTAACAGGAAACAAGATTTTGGTGAAGCAGTCGCCCATGCTTGTAGCGTACGACAAT
 GCGGTCAACCTTAGCTGGAAACACCTTTGTCCAAGTCCCCTATTTCCCGGACCTTCTAAGCCCTTTTGGGTGCTGGTGGT

GGTTGGTGGAGTCCTGGCTTGCTATAGCTTGCTAGTAACAGTGGCCTTTATTATTTTCTGGGTGAGGAGTAAGAGGAGCA
GGCTCCTGCACAGTGACTACATGAACATGACTCCCCGCCGCCCGGGCCACCCGCAAGCATTACCAGCCCTATGCCCA
CCACGCGACTTCGCAGCCTATCGCTCCTGACACGGACGCCTATCCAGAAGCCAGCCGGCTGGCAGCCCCATCTGCTCAA
TATCACTGCTCTGGATAGGAAATGACCGCCATCTCCAGCCGGCCACCTCAGGCCCTGTTGGGCCACCAATGCCAATTTT
TCTCGAGTGACTAGACCAAATATCAAGATCATTTTGAGACTCTGAAATGAAGTAAAAAGAGATTTCTGTGACAGGCCAAG
TCTTACAGTGCCATGGCCACATTCCAACCTACCATGTACTTAGTGACTTGACTGAGAAGTTAGGGTAGAAAACAAAAAG
GGAGTGGATTCTGGGAGCCTCTTCCCTTTCTCACTCACCTGCACATCTCAGTCAAGCAAAGTGTGGTATCCACAGACATT
TTAGTTGCAGAAGAAAGGCTAGGAAATCATTCCTTTTGGTTAAATGGGTGTTTAACTCTTTTGGTTAGTGGGTAAACGGG
GTAAGTTAGAGTAGGGGGAGGGATAGGAAGACATATTTAAAAACCATTAAACACTGTCTCCCACTCATGAAATGAGCCA
CGTAGTTCCTATTTAATGCTGTTTTCTTTAGTTTAGAAAATACATAGACATTGTCTTTTATGAATTCTGATCATATTTAG
TCATTTTGACCAAATGAGGGATTTGGTCAAATGAGGGATTCCCTCAAAGCAATATCAGGTAAACCAAGTTGCTTTCCTCA
CTCCCTGTCATGAGACTTCAGTGTTAATGTTCCACAATATACTTTGAAAGAATAAAATAGTTCTCCTACATGAAGAAAAG
ATATGTCAGGAAATAAGGTCACCTTTATGTCAAATATTTTGAGTACTATGGGACCTGGCGCAGTGGCTCATGCTTGTAAT
CCCAGCACTTTGGGAGGCCGAGGTGGGCAGATCACTTGAGATCAGGACCAGCCTGGTCAAGATGGTGAACCTCCGTCTGT
ACTAAAAATACAAAATTTAGCTTGGCCTGGTGGCAGGCACCTGTAATCCCAGCTGCCAAGAGGCTGAGGCATGAGAAATC
GCTTGAACCTGGCAGGCGGAGGTTGCAGTGAGCCGAGATAGTGCCACAGCTCTCCAGCCTGGGCGACAGAGTGAGACTCC
ATCTCAAACAACAACAACAACAACAACAACAACAACAACCACAAAATTTTGGAGTACTGTGAAGGATTATTTGTCTAA
CAGTTCATTCCAATCAGACCAGGTAGGAGCTTTCCTGTTTCATATGTTTCAGGGTTGCACAGTTGGTCTCTTTAATGTCG
GTGTGGAGATCCAAAGTGGGTTGTGGAAGAGCGTCCATAGGAGAAGTGAGAATACTGTGAAAAAGGGATGTTAGCATTC
ATTAGAGTATGAGGATGAGTCCCAAGAAGGTTCTTTGGAAGGAGGACGAATAGAATGGAGTAATGAAATCTTGCCATGT
GCTGAGGAGATAGCCAGCATTAGGTGACAATCTTCAGAAGTGGTCAGGCAGAAGGTGCCCTGGTGAGAGCTCCTTTACA
GGGACTTTATGTGGTTTAGGGCTCAGAGCTCCAAAACCTCTGGGCTCAGCTGCTCCTGTACCTTGGAGGTCCATTACATG
GGAAAGTATTTTGAATGTGTCTTTTGAAGAGAGCATCAGAGTTCTTAAGGGACTGGGTAAGGCCTGACCCTGAAATGAC
CATGGATATTTTCTACCTACAGTTTGAGTCAACTAGAATATGCCTGGGGACCTTGAAGAATGGCCCTTCAGTGGCCCTC
ACCATTTGTTGATGCTTCAGTTAATTCAGGTGTTGAAGGAGCTTAGGTTTTAGAGGCACGTAGACTTGGTTCAAGTCTCG
TTAGTAGTTGAATAGCCTCAGGCAAGTCACTGCCCACCTAAGATGATGGTTCTTCAACTATAAAATGGAGATAATGGTTA
CAAATGTCTCTTCTATAGTATAATCTCCATAAGGGCATGGCCCAAGTCTGTCTTTGACTCTGCCTATCCCTGACATTTA
GTAGCATGCCCCACATACAATGTTAGCTATTGGTATTATTGCCATATAGATAAAATATGTATAAAATTAACCTGGGCAA
TAGCCTAAGAAGGGGGGAATATTGTAACACAAATTTAAACCCACTACGCAGGGATGAGGTGCTATAATATGAGGACCTTT
TAACTTCCATCATTTTCTGTTTTCTTGAATAGTTTATCTTGTAATGAAATATAAGGCACCTCCCACTTTTATGTATAGA
AAGAGGTCTTTTAATTTTTTTTTAATGTGAGAAGGAAGGGAGGAGTAGGAATCTTGAGATTCCAGATCGAAAATACTGTA
CTTTGGTTGATTTTAAAGTGGGCTTCCATTCCATGGATTTAATCAGTCCCAAGAAGATCAAACTCAGCAGTACTTGGGTG
CTGAAGAACTGTTGGATTTACCCTGGCACGTGTGCCACTTGCCAGCTTCTTGGGCACACAGAGTTCTTCAATCCAAGTTA
TCAGATTGTATTTGAAAATGACAGAGCTGGAGAGTTTTTTGAAATGGCAGTGGCAAATAAATAAATACTTTTTTTTAAAT
GGAAAGACTTGATCTATGGTAATAAATGATTTTGTCTGACTGGAAAAATAGGCCTACTAAAGATGAATCACACTTGA
GATGTTTCTTACTCACTCTGCACAGAAACAAAGAAGAAATGTTATACAGGGAAGTCCGTTTTCTACTATTAGTATGAACCA
AGAAATGGTTCAAAAACAGTGGTAGGAGCAATGCTTTCATAGTTTCAGATATGGTAGTTATGAAGAAAACAATGTCATTT
GCTGCTATTATTGTAAGAGTCTTATAATTAATGGTACTCCTATAATTTTTGATTGTGAGCTCACCTATTTGGGTAAAGCA
TGCCAATTTAAAGAGACCAAGTGTATGTACATTATGTTCTACATATTCAGTGATAAAATTAATAACTACTATATGTCTG
CTTTAAATTTGTACTTTAATATTGTCTTTTGGTATTAAGAAAGATATGCTTTCAGAATAGATATGCTTCGCTTTGGCAAG
GAATTTGGATAGAACTTGCTATTTTAAAGAGGTGTGGGGTAAATCCTTGTATAAATCTCCAGTTTAGCCTTTTTTAAAA
AGCTAGACTTTCAAATACTAATTTCACTTCAAGCAGGGTACGTTTCTGGTTTGTGCTTGACTTCAGTCACAATTTCTT
ATCAGACCAATGGCTGACCTCTTTGAGATGTCAGGCTAGGCTTACCTATGTGTTCTGTGTCATGTGAATGCTGAGAAGTT
TGACAGAGATCCAACTTCAGCCTTGACCCCATCAGTCCCTCGGGTTAACTAACTGAGCCACCGGTCTCATGGCTATTTT
AATGAGGTATTGATGGTTAAATGCATGTCTGATCCCTTATCCCAGCCATTTGCACTGCCAGCTGGGAACCTATACCAGAC
CTGGATACTGATCCCAAAGTGTTAAATCACTACATGCTGGAGATTAGAGATGGTGCCAATAAAGGACCCAGAACCAGG
ATCTTGATTGCTATAGACTTATTAATAATCCAGGTCAAAGAGAGTGACACACACTCTCTCAAGACCTGGGGTGAGGGAGT
CTGTGTTATCTGCAAGGCCATTTGAGGCTCAGAAAGTCTCTCTTTCCTATAGATATATGCATACTTTCTGACATATAGGA

ATGTATCAGGAATACTCAACCATCACAGGCATGTTCTACCTCAGGGCCTTTACATGTCCTGTTTACTCTGTCTAGAATG
TCCTTCTGTAGATGACCTGGCTTGCCTCGTCACCCCTCAGGTCTTGCTCAAGTGTATCTTCTCCCCTAGTTAACTAC
CCCACACCCTGTCTGCTTTCTTGCTTATTTTTCTCCATAGCATTTTACCATCTCTTACATTAGACATTTTTCTTATTTA
TTTGTAGTTTATAAGCTTCATGAGGCAAGTAACTTTGCTTTGTTTCTTGCTGTATCTCCAGTGCCAGAGCAGTGCCTGG
TATATAATAAATATTTATTGACTGAGTGAA

Investigation of ICOS, CD28 and CD80 polymorphisms with the risk of
hepatocellular carcinoma: a case-control study in eastern Chinese population
Biosci Rep 39 (7) (2019)

ACACTTCGGGTTCTCGGGGAGGAGGGGCTGGAACCCTAGCCCATCGTCAGGACAAAGATGCTCAGGCTGCTCTTGGCTC
TCAACTTATTCCCTTCAATTCAAGTAACAGGAAACAAGATTTTGGTGAAGCAGTCGCCATGCTTGTAGCGTACGACAAT
GCGGTCAACCTTAGCTGGAAACACCTTTGTCCAAGTCCCTATTTCCCGGACCTTCTAAGCCCTTTTGGGTGCTGGTGGT
GGTTGGTGGAGTCTGGCTTGCTATAGCTTGCTAGTAACAGTGGCCTTTATTATTTTCTGGGTGAGGAGTAAGAGGAGCA
GGCTCCTGCACAGTGACTACATGAACATGACTCCCCGCCGCCCGGGCCACCCGCAAGCATTACCAGCCCTATGCCCCA
CCACGCGACTTCGACGCTATCGCTCCTGACACGGACGCTATCCAGAAGCCAGCCGGCTGGCAGCCCCCATCTGCTCAA
TATCACTGCTCTGGATAGGAAATGACCGCCATCTCCAGCCGGCCACCTCAGGCCCTGTTGGGCCACCAATGCCAATTTT
TCTCGAGTGACTAGACCAAATATCAAGATCATTTTGAGACTCTGAAATGAAGTAAAAGAGATTTCTGTGACAGGCCAAG
TCTTACAGTGCCATGGCCACATTCCAATTACCATGTACTTAGTGACTTGACTGAGAAGTTAGGGTAGAAAACAAAAAG
GGAGTGGATTCTGGGAGCCTCTTCCCTTTCTCACTACCTGCACATCTCAGTCAAGCAAAGTGTGGTATCCACAGACATT
TTAGTTGCAGAAGAAAGGCTAGGAAATCATTCCTTTTGGTTAAATGGGTGTTTAACTCTTTTGGTTAGTGGGTAAACGGG
GTAAGTTAGAGTAGGGGGAGGGATAGGAAGACATATTTAAAAACCATTAAACACTGTCTCCCACTCATGAAATGAGCCA
CGTAGTTCCTATTTAATGCTGTTTTCTTTAGTTTGAAGTACATAGACATTGTCTTTTATGAATTCTGATCATATTTAG
TCATTTTGACCAAATGAGGGATTTGGTCAAATGAGGGATTCCCTCAAAGCAATATCAGGTAAACCAAGTTGCTTTCTCA
CTCCCTGTCTGAGACTTCAGTGTTAATGTTTCAATATACTTTGAAAGAATAAAATAGTTCTCCTACATGAAGAAAGA
ATATGTCAGGAAATAAGGTCACTTTATGTCAAATTTATTTGAGTACTATGGGACCTGGCGCAGTGGCTCATGCTTGTAAAT
CCCAGCACTTTGGGAGGCCGAGGTGGGCAGATCACTTGAGATCAGGACCAGCCTGGTCAAGATGGTGAAACTCCGTCTGT
ACTAAAAATACAAAATTTAGCTTGGCCTGGTGGCAGGCACCTGTAATCCCAGCTGCCAAGAGGCTGAGGCATGAGAATC
GCTTGAACCTGGCAGGCGGAGGTTGCAGTGAGCCGAGATAGTGCCACAGCTCTCCAGCCTGGGCGACAGAGTGAGACTCC
ATCTCAAACA
CAGTTCATTCCAATCAGACCAGGTAGGAGCTTTCTGTTTCATATGTTTCAGGGTTGCACAGTTGGTCTCTTTAATGTCTG
GTGTGGAGATCCAAAGTGGGTTGTGGAAGAGCGTCCATAGGAGAAGTGAATACTGTGAAAAAGGGATGTTAGCATTC
ATTAGAGTATGAGGATGAGTCCCAAGAAGGTTCTTTGGAAGGAGGACGAATAGAATGGAGTAATGAAATCTTGCCATGT
GCTGAGGAGATAGCCAGCATTAGGTGACAATCTTCCAGAAGTGGTCAGGCAGAAGGTGCCCTGGTGAGAGCTCCTTTACA
GGGACTTTATGTGGTTTAGGGCTCAGAGCTCCAAAACCTCTGGGCTCAGCTGCTCCTGTACCTTGGAGGTCCATTACATG
GGAAAGTATTTTGAATGTGTCTTTTGAAGAGAGCATCAGAGTTCCTTAAGGGACTGGGTAAGGCCTGACCCTGAAATGAC
CATGGATATTTTCTACCTACAGTTTGAGTCAACTAGAATATGCCTGGGGACCTTGAAGAATGGCCCTTCAGTGGCCCTC
ACCATTTGTTTATGCTTCAGTTAATTCAGGTGTTGAAGGAGCTTAGGTTTTAGAGGCACGTAGACTTGGTTCAAGTCTCG
TTAGTAGTTGAATAGCCTCAGGCAAGTCACTGCCACCTAAGATGATGGTTCTTCAACTATAAAATGGAGATAATGGTTA
CAAATGTCTCTTCTATAGTATAATCTCCATAAGGGCATGGCCCAAGTCTGTCTTTGACTCTGCCTATCCCTGACATTTA
GTAGCATGCCCCGACATACAATGTTAGCTATTGGTATTATTGCCATATAGATAAAATATGTATAAAAAATTAACCTGGGCAA
TAGCCTAAGAAGGGGGGAATATTGTAACACAAATTTAAACCCACTACGCAGGGATGAGGTGCTATAATATGAGGACCTTT
TAACTTCCATCATTTTCTGTTTCTTGAATAGTTTATCTTGTAATGAAATATAAGGCACCTCCCACTTTTATGTATAGA
AAGAGGTCTTTAATTTTTTTTAAATGTGAGAAGGAAGGGAGGAGTAGGAATCTTGAGATTCCAGATCGAAAATACTGTA
CTTTGGTTGATTTTAAAGTGGGCTTCCATTCCATGGATTTAATCAGTCCCAAGAAGATCAAACCTCAGCAGTACTTGGGTG
CTGAAGAACTGTTGGATTTACCCTGGCACGTGTGCCACTTGCCAGCTTCTTGGGCACACAGAGTTCCTCAATCCAAGTTA
TCAGATTGTATTTGAAAATGACAGAGCTGGAGAGTTTTTTGAAATGGCAGTGGCAAATAAATAAATACTTTTTTTTAAAT
GGAAAGACTTGATCTATGGTAATAAATGATTTTGTCTGACTGGAAAAATAGGCCTACTAAAGATGAATCACACTTGA
GATGTTTCTTACTCACTCTGCACAGAAACAAGAAAGAAATGTTATACAGGGAAGTCCGTTTTTCACTATTAGTATGAACCA

AGAAATGGTTCAAAAACAGTGGTAGGAGCAATGCTTTCATAGTTTCAGATATGGTAGTTATGAAGAAAACAATGTCATTT
GCTGCTATTATTGTAAAGAGTCTTATAATTAATGGTACTCCTATAATTTTTGATTGTGAGCTCACCTATTTGGGTAAAGCA
TGCCAATTTAAAGAGACCAAGTGTATGTACATTATGTTCTACATATTCAGTGATAAAATTAATAACTACTATATGTCTG
CTTTAAATTTGACTTTAATATTGTCTTTTGGTATTAAGAAAGATATGCTTTCAGAATAGATATGCTTCGCTTTGGCAAG
GAATTTGGATAGAACTTGCTATTTAAAAGAGGTGTGGGGTAAATCCTTGTATAAATCTCCAGTTTAGCCTTTTTTGAAAA
AGCTAGACTTTCAAATACTAATTTCACTTCAAGCAGGGTACGTTTCTGGTTTGTGTTGCTTGACTTCAGTCACAATTTCTT
ATCAGACCAATGGCTGACCTCTTTGAGATGTCAGGCTAGGCTTACCTATGTGTTCTGTGTCATGTGAATGCTGAGAAGTT
TGACAGAGATCCAACCTTCAGCCTTGACCCCATCAGTCCCTCGGGTAACTAACTGAGCCACCGGTCTCATGGCTATTTT
AATGAGGGTATTGATGGTTAAATGCATGTCTGATCCCTTATCCCAGCCATTTGCACTGCCAGCTGGGAATAACCAGAC
CTGGATACTGATCCCAAAGTGTTAAATTCACTACATGCTGGAGATTAGAGATGGTGCCAATAAAGGACCCAGAACCAAGG
ATCTTGATTGCTATAGACTTATTAATAATCCAGGTCAAAGAGAGTGACACACACTCTCTCAAGACCTGGGGTGAGGGAGT
CTGTGTTATCTGCAAGGCCATTTGAGGCTCAGAAAAGTCTCTCTTTTCTATAGATATATGCATACTTTCTGACATATAGGA
ATGTATCAGGAATACTCAACCATCACAGGCATGTTTCTACCTCAGGGCCTTTACATGTCCTGTTTACTCTGTCTAGAATG
TCCTTCTGTAGATGACCTGGCTTGCCTCGTCACCCTTCAGGTCCCTGCTCAAGTGTCTCTCTCCCCTAGTTAACTAC
CCCACACCCTGTCTGCTTTTCTTGTCTATTTTTCTCCATAGCATTTTACCATCTCTTACATTAGACATTTTTCTTATTTA
TTTGTAGTTTATAAGCTTCATGAGGCAAGTAACTTTGCTTTGTTTCTTGTGTATCTCCAGTGCCAGAGCAGTGCCTGG
TATATAATAAATATTTATTGACTGAGTGAA

CD28 Autonomous Signaling Up-Regulates C-Myc Expression and Promotes Glycolysis
Enabling Inflammatory T Cell Responses in Multiple Sclerosis
Cells 8 (6), E575 (2019)

ACACTTCGGGTTCCTCGGGGAGGAGGGGCTGGAACCTAGCCCATCGTCAGGACAAAGATGCTCAGGCTGCTCTTGGCTC
TCAACTTATTCCTTCAATTCAAGTAACAGGAAACAAGATTTTGGTGAAGCAGTCGCCCATGCTTGTAGCGTACGACAAT
GCGGTCAACCTTAGCTGGAACACCTTTGTCCAAGTCCCTATTTCCCGGACCTTCTAAGCCCTTTTGGGTGCTGGTGGT
GGTTGGTGGAGTCTGGCTTGTATAGCTTGTAGTAACAGTGGCCTTTATTATTTTCTGGGTGAGGAGTAAGAGGAGCA
GGCTCCTGCACAGTGACTACATGAACATGACTCCCCGCCGCCCGGGGCCACCCGCAAGCATTACCAGCCCTATGCCCCA
CCACGCGACTTCGACGCTATCGCTCCTGACACGGACGCTATCCAGAAGCCAGCCGGCTGGCAGCCCCCATCTGCTCAA
TATCACTGCTCTGGATAGGAAATGACCGCCATCTCCAGCCGGCCACCTCAGGCCCTGTTGGGCCACCAATGCCAATTTT
TCTCGAGTGACTAGACCAAATATCAAGATCATTTTGTAGACTCTGAAATGAAGTAAAAGAGATTTTCTGTGACAGGCCAAG
TCTTACAGTGCCATGGCCACATTCCAATTACCATGTACTTAGTGACTTGACTGAGAAGTTAGGGTAGAAAACAAAAAG
GGAGTGGATTCTGGGAGCCTCTTCCCTTTCTCACTACCTGCACATCTCAGTCAAGCAAAGTGTGGTATCCACAGACATT
TTAGTTGCAGAAGAAAGGCTAGGAAATCATTCCTTTTGGTTAAATGGGTGTTTAACTTTTGGTTAGTGGGTAAACGGG
GTAAGTTAGAGTAGGGGGAGGGATAGGAAGACATATTTAAAAACCATTAAACACTGTCTCCCACTCATGAAATGAGCCA
CGTAGTTCTATTTAATGCTGTTTTCTTTAGTTTAGAAATACATAGACATTGTCTTTATGAATTCTGATCATATTTAG
TCATTTTGACCAAATGAGGGATTTGGTCAAATGAGGGATTCCCTCAAAGCAATATCAGGTAAACCAAGTTGCTTTCCTCA
CTCCCTGTCATGAGACTTCAGTGTTAATGTTCCACAATATACTTTGAAAGAATAAAATAGTTCTCCTACATGAAGAAAGA
ATATGTCAGGAAATAAGGTCACTTTATGTCAAAATATTTGAGTACTATGGGACCTGGCGCAGTGGCTCATGCTTGTAAAT
CCCAGCACTTTGGGAGGCCGAGGTGGGCAGATCACTTGAGATCAGGACCAGCTGGTCAAGATGGTGAAACTCCGTCTGT
ACTAAAAATACAAAATTTAGCTTGGCCTGGTGGCAGGCACCTGTAATCCCAGCTGCCAAGAGGCTGAGGCATGAGAATC
GCTTGAACCTGGCAGGCGGAGGTTGCAGTGAGCCGAGATAGTGCCACAGCTCTCCAGCCTGGGCGACAGAGTGAGACTCC
ATCTCAAACAACAACAACAACAACAACAACAACAACAACCACAAAATTATTTGAGTACTGTGAAGGATTATTTGTCTAA
CAGTTCATTCCAATCAGACCAGGTAGGAGCTTTCTGTTTCATATGTTTCAGGGTTGCACAGTTGGTCTCTTTAATGTCTG
GTGTGGAGATCCAAAGTGGGTTGTGGAAGAGCGTCCATAGGAGAAGTGAGAATACTGTGAAAAAGGGATGTTAGCATTC
ATTAGAGTATGAGGATGAGTCCCAAGAAGTTCTTTGGAAGGAGGACGAATAGAATGGAGTAATGAAATCTTGCCATGT
GCTGAGGAGATAGCCAGCATTAGGTGACAATCTTCCAGAAGTGGTCAGGCAGAAGGTGCCCTGGTGAGAGCTCCTTTACA
GGGACTTTATGTGGTTTAGGGCTCAGAGCTCCAAAACCTCTGGGCTCAGCTGCTCTGTACCTTGGAGGTCCATTACATG
GGAAAGTATTTTGAATGTGTCTTTTGAAGAGAGCATCAGAGTTCTTAAGGGACTGGGTAAAGGCCTGACCCTGAAATGAC
CATGGATATTTTCTACCTACAGTTTGTGCTCACTAGAATATGCCTGGGGACCTTGAAGAATGGCCCTTCAGTGGCCCTC

ACCATTTGTTTCATGCTTCAGTTAATTCAGGTGTTGAAGGAGCTTAGGTTTTAGAGGCACGTAGACTTGGTTCAAGTCTCG
 TTAGTAGTTGAATAGCCTCAGGCAAGTCACTGCCACCTAAGATGATGGTTCTTCAACTATAAAATGGAGATAATGGTTA
 CAAATGTCTCTCCTATAGTATAATCTCCATAAGGGCATGGCCCAAGTCTGTCTTTGACTCTGCCTATCCCTGACATTTA
 GTAGCATGCCCCACATACAATGTTAGCTATTGGTATTATTGCCATATAGATAAAATTATGTATAAAAAATTAAGTGGGCAA
 TAGCCTAAGAAGGGGGGAATATTGTAACACAAATTTAAACCCACTACGCAGGGATGAGGTGCTATAATATGAGGACCTTT
 TAACTTCCATCATTTTCTGTTTCTTGAATAGTTTATCTTGTAATGAAATATAAGGCACCTCCCCTTTTATGTATAGA
 AAGAGGTCTTTTAATTTTTTTTTAATGTGAGAAGGAAGGGAGGAGTAGGAATCTTGAGATTCCAGATCGAAAATACTGTA
 CTTTGGTTGATTTTAAAGTGGGCTTCCATTCCATGGATTTAATCAGTCCCAAGAAGATCAAACCTCAGCAGTACTTGGGTG
 CTGAAGAACTGTTGGATTTACCCTGGCACGTGTGCCACTTGCCAGCTTCTTGGGCACACAGAGTTCTTCAATCCAAGTTA
 TCAGATTGTATTTGAAAATGACAGAGCTGGAGAGTTTTTTGAAATGGCAGTGGCAAATAAATAAATACTTTTTTTTAAAT
 GGAAAGACTTGATCTATGGTAATAAATGATTTTGTCTGACTGGAAAAATAGGCCTACTAAAGATGAATCACACTTGA
 GATGTTTCTTACTCACTCTGCACAGAAACAAAGAAGAAATGTTATACAGGGAAGTCCGTTTTCTACTATTAGTATGAACCA
 AGAAATGGTTCAAAAACAGTGGTAGGAGCAATGCTTTCATAGTTTCAGATATGGTAGTTATGAAGAAAACAATGTCATTT
 GCTGCTATTATTGTAAGAGTCTTATAATTAATGGTACTCCTATAATTTTTGATTGTGAGCTCACCTATTTGGGTAAAGCA
 TGCCAATTTAAAGAGACCAAGTGTATGTACATTATGTTCTACATATTCAGTGATAAAATTACTAACTACTATATGTCTG
 CTTTAAATTTGACTTTAATATTGTCTTTTGGTATTAAGAAAGATATGCTTTCAGAATAGATATGCTTCGCTTTGGCAAG
 GAATTTGGATAGAACTTGCTATTTAAAAGAGGTGTGGGGTAAATCCTTGATAAAATCTCCAGTTTAGCCTTTTTTGA
 AGCTAGACTTTCAAATACTAATTTCACTTCAAGCAGGGTACGTTTCTGGTTTGTGCTTGACTTCAGTCACAATTTCTT
 ATCAGACCAATGGCTGACCTCTTTGAGATGTCAGGCTAGGCTTACCTATGTGTTCTGTGTCATGTGAATGCTGAGAAGTT
 TGACAGAGATCCAACTTCAGCCTTGACCCATCAGTCCCTCGGGTAACTAACTGAGCCACCGGTCTCATGGCTATTTT
 AATGAGGGTATTGATGGTTAAATGCATGTCTGATCCCTTATCCCAGCCATTTGCACTGCCAGCTGGGAACATATACCAGAC
 CTGGATACTGATCCCAAAGTGTTAAATTCAACTACATGCTGGAGATTAGAGATGGTGCCAATAAAGGACCCAGAACCAGG
 ATCTTGATTGCTATAGACTTATTAATAATCCAGGTCAAAGAGAGTGACACACACTCTCTCAAGACCTGGGGTGAGGGAGT
 CTGTGTTATCTGCAAGGCCATTTGAGGCTCAGAAAGTCTCTCTTTCCTATAGATATATGCATACTTTCTGACATATAGGA
 ATGTATCAGGAATACTCAACCATCACAGGCATGTTCTACCTCAGGGCCTTTACATGTCTGTTTACTCTGTCTAGAATG
 TCCTTCTGTAGATGACCTGGCTTGCCTCGTCACCCTTCAGGTCTTGCTCAAGTGTATCTTCTCCCCTAGTTAACTAC
 CCCACACCTGTCTGCTTTCTTGTCTATTTTCTCCATAGCATTTTACCATCTCTTACATTAGACATTTTCTTATTTA
 TTTGTAGTTTATAAGCTTCATGAGGCAAGTAACTTTGCTTTGTTTCTTGCTGTATCTCCAGTGCCAGAGCAGTGCCCTGG
 TATATAATAAATATTTATTGACTGAGTGAA

CD28 and T cell antigen receptor signal transduction coordinately regulate
 interleukin 2 gene expression in response to superantigen stimulation
 J Exp Med 175 (4), 1131-1134 (1992)

AACTTTCGGGTTCTCGGGGAGGAGGGCTGGAACCTAGCCCATCGTCAGGACAAAGATGCTCAGGCTGCTCTTGGCTC
 TCAACTTATTCCTTCAATTCAAGTAACAGGAAACAAGATTTTGGTGAAGCAGTCGCCCATGCTTGTAGCGTACGACAAT
 GCGGTCAACCTTAGCTGGAAACACCTTTGTCCAAGTCCCCTATTTCCCGGACCTTCTAAGCCCTTTTGGGTGCTGGTGGT
 GGTGGTGGAGTCCTGGCTTGCTATAGCTTGCTAGTAACAGTGGCCTTTATTATTTTCTGGGTGAGGAGTAAGAGGAGCA
 GGCTCCTGCACAGTGAATGACATGAACATGACTCCCCGCCGCCCGGGCCACCCGCAAGCATTACCAGCCCTATGCCCA
 CCACGCACTTCGCAGCCTATCGCTCCTGACACGGACGCCTATCCAGAAGCCAGCCGGCTGGCAGCCCCATCTGCTCAA
 TACTACTGCTCTGGATAGGAAATGACCGCCATCTCCAGCCGGCCACCTCAGGCCCTGTGGGCCACCAATGCCAATTTT
 TCTCGAGTGACTAGACCAAATATCAAGATCATTTTGAGACTCTGAAATGAAGTAAAAGAGATTTCTGTGACAGGCCAAG
 TCTTACAGTGCCATGGCCACATTCCAATTACCATGTACTTAGTGACTTGACTGAGAAGTTAGGGTAGAAAACAAAAAG
 GGAGTGGATTCTGGGAGCCTCTTCCCTTTCTCACTCACCTGCACATCTCAGTCAAGCAAAGTGTGGTATCCACAGACATT
 TTAGTTGCAGAAGAAAGGCTAGGAAATCATTCCTTTTGGTTAAATGGGTGTTTAACTTTTGGTTAGTGGGTAAACGGG
 GTAAGTTAGAGTAGGGGGAGGGATAGGAAGACATATTTAAAAACCATTAACACTGTCTCCCCTCATGAAATGAGCCA
 CGTAGTTCTATTTAATGCTGTTTTCTTTAGTTTGAATAACATAGACATTGTCTTTATGAATTCTGATCATATTTAG
 TCATTTTGACCAAATGAGGGATTTGGTCAAATGAGGGATTCCCTCAAAGCAATATCAGGTAAACCAAGTTGCTTTCTCA
 CTCCCTGTCATGAGACTTCAGTGTTAATGTTTCAATATACTTTGAAAGAATAAAATAGTTCTCCTACATGAAGAAAGA

ATATGTCAGGAAATAAGGTCACCTTTATGTCAAAATTATTTGAGTACTATGGGACCTGGCGCAGTGGCTCATGCTTGTAAAT
 CCCAGCACTTTGGGAGGCCGAGGTGGGCAGATCACTTGAGATCAGGACCAGCCTGGTCAAGATGGTGAACTCCGTCTGT
 ACTAAAAATACAAAATTTAGCTTGGCCTGGTGGCAGGCACCTGTAATCCCAGCTGCCAAGAGGCTGAGGCATGAGAATC
 GCTTGAACCTGGCAGGCGGAGGTTGCAGTGAGCCGAGATAGTGCCACAGCTCTCCAGCCTGGGCGACAGAGTGAGACTCC
 ATCTCAAACAACAACAACAACAACAACAACAACAACAACCACAAAATTATTTGAGTACTGTGAAGGATTATTTGTCTAA
 CAGTTCATTCCAATCAGACCAGGTAGGAGCTTTCCTGTTTTCATATGTTTCAGGGTTGCACAGTTGGTCTCTTTAATGTCTG
 GTGTGGAGATCCAAAGTGGGTTGTGGAAAGAGCGTCCATAGGAGAAGTGAGAATACTGTGAAAAAGGGATGTTAGCATTC
 ATTAGAGTATGAGGATGAGTCCCAAGAAGGTTCTTTGGAAGGAGGACGAATAGAATGGAGTAATGAAATTCTTGCCATGT
 GCTGAGGAGATAGCCAGCATTAGGTGACAATCTTCCAGAAGTGGTCAGGCAGAAGGTGCCCTGGTGAGAGCTCCTTTACA
 GGGACTTTATGTGGTTTAGGGCTCAGAGCTCCAAAACCTCTGGGCTCAGCTGCTCCTGTACCTTGGAGGTCCATTACATG
 GGAAAGTATTTTGAATGTGTCTTTTGAAGAGAGCATCAGAGTTCTTAAGGGACTGGGTAAGGCCTGACCCTGAAATGAC
 CATGGATATTTTCTACCTACAGTTTGAGTCAACTAGAATATGCCTGGGGACCTTGAAGAATGGCCCTTCAGTGGCCCTC
 ACCATTTGTTTCATGCTTCAGTTAATTCAGGTGTTGAAGGAGCTTAGGTTTTAGAGGCACGTAGACTTGGTTCAAGTCTCG
 TTAGTAGTTGAATAGCCTCAGGCAAGTCACTGCCACCTAAGATGATGGTTCTTCAACTATAAAATGGAGATAATGGTTA
 CAAATGTCTCTTCTATAGTATAATCTCCATAAGGGCATGGCCCAAGTCTGTCTTTGACTCTGCCTATCCCTGACATTTA
 GTAGCATGCCCCGACATACAATGTTAGCTATTGGTATTATTGCCATATAGATAAAATTATGTATAAAAAATTAAGTGGGCAA
 TAGCCTAAGAAGGGGGGAATATTGTAACACAAATTTAAACCCACTACGCAGGGATGAGGTGCTATAATATGAGGACCTTT
 TAACTTCCATCATTTTCTGTTTTCTTGAAATAGTTTATCTTGTAATGAAATATAAGGCACCTCCCACTTTTATGTATAGA
 AAGAGGTCTTTTAATTTTTTTTAAATGTGAGAAGGAAGGGAGGAGTAGGAATCTTGAGATTCCAGATCGAAAATACTGTA
 CTTTGGTTGATTTTAAAGTGGGCTTCCATTCCATGGATTTAATCAGTCCCAAGAAGATCAAACCTCAGCAGTACTTGGGTG
 CTGAAGAACTGTTGGATTTACCCTGGCACGTGTGCCACTTGCCAGCTTCTTGGGCACACAGAGTTCTTCAATCCAAGTTA
 TCAGATTGTATTTGAAAATGACAGAGCTGGAGAGTTTTTTTGAATGGCAGTGGCAAAATAAATAAATACTTTTTTTTAAAT
 GGAAAGACTTGATCTATGGTAATAAATGATTTTGTCTTCTGACTGGAAAAATAGGCCTACTAAAGATGAATCACACTTGA
 GATGTTTCTTACTCACTCTGCACAGAAACAAAGAAGAAATGTTATACAGGGAAGTCCGTTTTACTATTAGTATGAACCA
 AGAAATGGTTCAAAAAACAGTGGTAGGAGCAATGCTTTCATAGTTTCAGATATGGTAGTTATGAAGAAAACAATGTCATTT
 GCTGCTATTATTGTAAGAGTCTTATAATTAATGGTACTCCTATAATTTTTGATTGTGAGCTCACCTATTTGGGTAAAGCA
 TGCCAATTTAAAGAGACCAAGTGTATGTACATTATGTTCTACATATTCAGTGATAAAATTAATAACTACTATATGTCTG
 CTTTAAATTTGACTTTAATATTGTCTTTTGGTATTAAGAAAGATATGCTTTCAGAATAGATATGCTTCGCTTTGGCAAG
 GAATTTGGATAGAACTTGCTATTTTAAAGAGGTGTGGGGTAAATCCTTGTATAAATCTCCAGTTTAGCCTTTTTTAAAA
 AGCTAGACTTTCAAATACTAATTTCACTTCAAGCAGGGTACGTTTCTGGTTTGTGTTGCTTGACTTCAGTCACAATTTCTT
 ATCAGACCAATGGCTGACCTCTTTGAGATGTCAGGCTAGGCTTACCTATGTGTTCTGTGTCATGTGAATGCTGAGAAGTT
 TGACAGAGATCCAACTTCAGCCTTGACCCCATCAGTCCCTCGGGTAACTAACTGAGCCACCGGTCTCATGGCTATTTT
 AATGAGGGTATTGATGGTTAAATGCATGTCTGATCCCTTATCCCAGCCATTTGCACTGCCAGCTGGGAACATATACCAGAC
 CTGGATACTGATCCCAAAGTGTTAAATTCACTACATGCTGGAGATTAGAGATGGTGCCAATAAAGGACCCAGAACCAGG
 ATCTTGATTGCTATAGACTTATTAATAATCCAGGTCAAAGAGAGTGACACACACTCTCTCAAGACCTGGGGTGAGGGAGT
 CTGTGTTATCTGCAAGGCCATTTGAGGCTCAGAAAGTCTCTCTTTCCTATAGATATATGCATACTTTCTGACATATAGGA
 ATGTATCAGGAATACTCAACCATCACAGGCATGTTCCCTACCTCAGGGCCTTTACATGTCCTGTTTACTCTGTCTAGAATG
 TCCTTCTGTAGATGACCTGGCTTGCCTCGTACCCTTCAGGTCCTTGCTCAAGTGTCATCTTCTCCCCTAGTTAAACTAC
 CCCACACCTGTCTGCTTTCTTGTCTATTTTTCTCCATAGCATTTTACCATCTCTTACATTAGACATTTTCTTATTTA
 TTTGTAGTTTATAAGCTTCATGAGGCAAGTAACTTTGCTTTGTTTCTTGCTGTATCTCCAGTGCCAGAGCAGTGCCCTGG
 TATATAATAAATATTTATTGACTGAGTGAA

Signalling in human tumour infiltrating lymphocytes: the CD28 molecule is
 functional and is physically associated with the CD45R0 molecule

Eur J Cancer 28A (4-5), 749-754 (1992)

ACACTTCGGGTTCTCGGGGAGGAGGGGCTGGAACCCTAGCCCATCGTCAGGACAAAGATGCTCAGGCTGCTCTTGGCTC
 TCAACTTATTCCTTCAATTCAAGTAACAGGAAACAAGATTTTGGTGAAGCAGTCGCCCATGCTTGTAGCGTACGACAAT
 GCGGTCAACCTTAGCTGGAAACACCTTTGTCCAAGTCCCCTATTTCCCGGACCTTCTAAGCCCTTTTGGGTGCTGGTGGT

GGTTGGTGGAGTCCTGGCTTGCTATAGCTTGCTAGTAACAGTGGCCTTTATTATTTTCTGGGTGAGGAGTAAGAGGAGCA
GGCTCCTGCACAGTGACTACATGAACATGACTCCCCGCCGCCCGGGCCACCCGCAAGCATTACCAGCCCTATGCCCCA
CCACGCGACTTCGCAGCCTATCGCTCCTGACACGGACGCCTATCCAGAAGCCAGCCGGCTGGCAGCCCCCATCTGCTCAA
TATCACTGCTCTGGATAGGAAATGACCGCCATCTCCAGCCGGCCACCTCAGGCCCTGTTGGGCCACCAATGCCAATTTT
TCTCGAGTGACTAGACCAAATATCAAGATCATTTTGAGACTCTGAAATGAAGTAAAAAGAGATTTCTGTGACAGGCCAAG
TCTTACAGTGCCATGGCCACATTCCAACCTACCATGTACTTAGTGACTTGACTGAGAAGTTAGGGTAGAAAACAAAAAG
GGAGTGGATTCTGGGAGCCTCTTCCCTTTCTCACTCACCTGCACATCTCAGTCAAGCAAAGTGTGGTATCCACAGACATT
TTAGTTGCAGAAGAAAGGCTAGGAAATCATTCCTTTTGGTTAAATGGGTGTTTAACTCTTTTGGTTAGTGGGTAAACGGG
GTAAGTTAGAGTAGGGGGAGGGATAGGAAGACATATTTAAAAACCATTAAACACTGTCTCCCACTCATGAAATGAGCCA
CGTAGTTCCTATTTAATGCTGTTTTCTTTAGTTTAGAAAATACATAGACATTGTCTTTTATGAATTCTGATCATATTTAG
TCATTTTGACCAAATGAGGGATTTGGTCAAATGAGGGATTCCCTCAAAGCAATATCAGGTAAACCAAGTTGCTTTCCTCA
CTCCCTGTCATGAGACTTCAGTGTTAATGTTCCACAATATACTTTGAAAGAATAAAATAGTTCTCCTACATGAAGAAAAG
ATATGTCAGGAAATAAGGTCACCTTTATGTCAAATTTATTTGAGTACTATGGGACCTGGCGCAGTGGCTCATGCTTGTAAAT
CCCAGCACTTTGGGAGGCCGAGGTGGGCAGATCACTTGAGATCAGGACCAGCCTGGTCAAGATGGTGAACCTCCGTCTGT
ACTAAAAATACAAAATTTAGCTTGGCCTGGTGGCAGGCACCTGTAATCCCAGCTGCCAAGAGGCTGAGGCATGAGAAATC
GCTTGAACCTGGCAGGCGGAGGTTGCAGTGAGCCGAGATAGTGCCACAGCTCTCCAGCCTGGGCGACAGAGTGAGACTCC
ATCTCAAACAACAACAACAACAACAACAACAACAACAACCACAAAATTTAGTACTGTGAAGGATTATTTGTCTAA
CAGTTCATTCCAATCAGACCAGGTAGGAGCTTTCCTGTTTCATATGTTTCAGGGTTGCACAGTTGGTCTCTTTAATGTG
GTGTGGAGATCCAAAGTGGGTTGTGGAAGAGCGTCCATAGGAGAAGTGAGAATACTGTGAAAAAGGGATGTTAGCATTC
ATTAGAGTATGAGGATGAGTCCCAAGAAGGTTCTTTGGAAGGAGGACGAATAGAATGGAGTAATGAAATCTTGCCATGT
GCTGAGGAGATAGCCAGCATTAGGTGACAATCTTCAGAAGTGGTCAGGCAGAAGGTGCCCTGGTGAGAGCTCCTTTACA
GGGACTTTATGTGGTTTAGGGCTCAGAGCTCCAAAACCTCTGGGCTCAGCTGCTCCTGTACCTTGGAGGTCCATTACATG
GGAAAGTATTTTGAATGTGTCTTTTGAAGAGAGCATCAGAGTTCTTAAGGGACTGGGTAAGGCCTGACCCTGAAATGAC
CATGGATATTTTCTACCTACAGTTTGAGTCAACTAGAATATGCCTGGGGACCTTGAAGAATGGCCCTTCAGTGGCCCTC
ACCATTTGTTGATGCTTCAGTTAATTCAGGTGTTGAAGGAGCTTAGGTTTTAGAGGCACGTAGACTTGGTTCAAGTCTCG
TTAGTAGTTGAATAGCCTCAGGCAAGTCACTGCCCACCTAAGATGATGGTTCTTCAACTATAAAATGGAGATAATGGTTA
CAAATGTCTCTTCTATAGTATAATCTCCATAAGGGCATGGCCCAAGTCTGTCTTTGACTCTGCCTATCCCTGACATTTA
GTAGCATGCCCCACATACAATGTTAGCTATTGGTATTATTGCCATATAGATAAAATTTATGTATAAAATTAACCTGGGCAA
TAGCCTAAGAAGGGGGGAATATTGTAACACAAATTTAAACCCACTACGCAGGGATGAGGTGCTATAATATGAGGACCTTT
TAACTTCCATCATTTTCTGTTTTCTTGAATAGTTTATCTTGTAATGAAATATAAGGCACCTCCCACTTTTATGTATAGA
AAGAGGTCTTTTAATTTTTTTTTAATGTGAGAAGGAAGGGAGGAGTAGGAATCTTGAGATTCCAGATCGAAAATACTGTA
CTTTGGTTGATTTTAAAGTGGGCTTCCATTCCATGGATTAAATCAGTCCCAAGAAGATCAAACTCAGCAGTACTTGGGTG
CTGAAGAACTGTTGGATTTACCCTGGCACGTGTGCCACTTGCCAGCTTCTTGGGCACACAGAGTTCTTCAATCCAAGTTA
TCAGATTGTATTTGAAAATGACAGAGCTGGAGAGTTTTTTGAAATGGCAGTGGCAAATAAATAAATACTTTTTTTTTAAAT
GGAAAGACTTGATCTATGGTAATAAATGATTTTGTCTGACTGGAAAAATAGGCCTACTAAAGATGAATCACACTTGA
GATGTTTCTTACTCACTCTGCACAGAAACAAAGAAGAAATGTTATACAGGGAAGTCCGTTTTACTATTAGTATGAACCA
AGAAATGGTTCAAAAACAGTGGTAGGAGCAATGCTTTCATAGTTTCAGATATGGTAGTTATGAAGAAAACAATGTCATTT
GCTGCTATTATTGTAAGAGTCTTATAATTAATGGTACTCCTATAATTTTTGATTGTGAGCTCACCTATTTGGGTAAAGCA
TGCCAATTTAAAGAGACCAAGTGTATGTACATTATGTTCTACATATTCAGTGATAAAATTAATAACTACTATATGTCTG
CTTTAAATTTGTACTTTAATATTGTCTTTTGGTATTAAGAAAGATATGCTTTCAGAATAGATATGCTTCGCTTTGGCAAG
GAATTTGGATAGAACTTGCTATTTTAAAGAGGTGTGGGGTAAATCCTTGTATAAATCTCCAGTTTAGCCTTTTTTAAAA
AGCTAGACTTTCAAATACTAATTTCACTTCAAGCAGGGTACGTTTCTGGTTTGTGCTTGACTTCAGTCACAATTTCTT
ATCAGACCAATGGCTGACCTCTTTGAGATGTCAGGCTAGGCTTACCTATGTGTTCTGTGTCATGTGAATGCTGAGAAGTT
TGACAGAGATCCAACTTCAGCCTTGACCCCATCAGTCCCTCGGGTTAACTAAGTGAAGCCACCGGTCTCATGGCTATTTT
AATGAGGGTATTGATGGTTAAATGCATGTCTGATCCCTTATCCCAGCCATTTGCACTGCCAGCTGGGAACCTATACCAGAC
CTGGATACTGATCCCAAAGTGTTAAATCAACTACATGCTGGAGATTAGAGATGGTGCCAATAAAGGACCCAGAACCAGG
ATCTTGATTGCTATAGACTTATTAATAATCCAGGTCAAAGAGAGTGACACACACTCTCTCAAGACCTGGGGTGAGGGAGT
CTGTGTTATCTGCAAGGCCATTTGAGGCTCAGAAAGTCTCTCTTTCCTATAGATATATGCATACTTTCTGACATATAGGA

ATGTATCAGGAATACTCAACCATCACAGGCATGTTCTACCTCAGGGCCTTTACATGTCCTGTTTACTCTGTCTAGAATG
TCCTTCTGTAGATGACCTGGCTTGCCTCGTCACCCCTCAGGTCCTTGCTCAAGTGTACATCTTCTCCCCTAGTTAAACTAC
CCCACACCCTGTCTGCTTTCTTGCTTATTTTTCTCCATAGCATTTTACCATCTCTACATTAGACATTTTTCTTATTTA
TTTGTAGTTTATAAGCTTCATGAGGCAAGTAACTTTGCTTTGTTTCTTGCTGTATCTCCAGTGCCAGAGCAGTGCCTGG
TATATAATAAATATTTATTGACTGAGTGAA

Binding of the B cell activation antigen B7 to CD28 costimulates T cell
proliferation and interleukin 2 mRNA accumulation
J Exp Med 173 (3), 721-730 (1991)

ACACTTCGGGTTCTCGGGGAGGAGGGGCTGGAACCCTAGCCCATCGTCAGGACAAAGATGCTCAGGCTGCTCTTGGCTC
TCAACTTATTCCCTTCAATTCAAGTAACAGGAAACAAGATTTTGGTGAAGCAGTCGCCCATGCTTGTAGCGTACGACAAT
GCGGTCAACCTTAGCTGGAAACACCTTTGTCCAAGTCCCCTATTTCCCGGACCTTCTAAGCCCTTTTGGGTGCTGGTGGT
GGTTGGTGGAGTCTGGCTTGCTATAGCTTGCTAGTAACAGTGGCCTTTATTATTTTCTGGGTGAGGAGTAAGAGGAGCA
GGCTCCTGCACAGTGACTACATGAACATGACTCCCCGCGCGCCCGGGCCACCCGCAAGCATTACCAGCCCTATGCCCCA
CCACGCGACTTCGACGCTATCGCTCCTGACACGGACGCTATCCAGAAGCCAGCCGGCTGGCAGCCCCCATCTGCTCAA
TATCACTGCTCTGGATAGGAAATGACCGCCATCTCCAGCCGGCCACCTCAGGCCCTGTTGGGCCACCAATGCCAATTTT
TCTCGAGTGACTAGACCAAATATCAAGATCATTTTGAGACTCTGAAATGAAGTAAAAGAGATTTCTGTGACAGGCCAAG
TCTTACAGTGCCATGGCCACATTCCAACCTTACCATGTACTTAGTGACTTGACTGAGAAGTTAGGGTAGAAAACAAAAAG
GGAGTGGATTCTGGGAGCCTCTTCCCTTTCTCACTCACCTGCACATCTCAGTCAAGCAAAGTGTGGTATCCACAGACATT
TTAGTTGCAGAAGAAAGGCTAGGAAATCATTCCTTTTGGTTAAATGGGTGTTTAACTCTTTTGGTTAGTGGGTAAACGGG
GTAAGTTAGAGTAGGGGGAGGGATAGGAAGACATATTTAAAAACCATTAAACACTGTCTCCCACTCATGAAATGAGCCA
CGTAGTTCCTATTTAATGCTGTTTTCTTTAGTTTGAAGTACATAGACATTGTCTTTTATGAATTCTGATCATATTTAG
TCATTTTGACCAAATGAGGGATTTGGTCAAATGAGGGATTCCCTCAAAGCAATATCAGGTAAACCAAGTTGCTTTCTCA
CTCCCTGTCTAGACTTCAGTGTTAATGTTTCAATATACTTTGAAAGAATAAAATAGTTCTCCTACATGAAGAAAGA
ATATGTCAGGAAATAAGGTCACCTTTATGTCAAATTTATTTGAGTACTATGGGACCTGGCGCAGTGGCTCATGCTTGTAA
CCCAGCACTTTGGGAGGCCGAGGTGGGCAGATCACTTGAGATCAGGACCAGCCTGGTCAAGATGGTGAAACTCCGTCTGT
ACTAAAAATACAAAATTTAGCTTGGCCTGGTGGCAGGCACCTGTAATCCCAGCTGCCAAGAGGCTGAGGCATGAGAATC
GCTTGAACCTGGCAGGCGGAGGTTGCAGTGAGCCGAGATAGTGCCACAGCTCTCCAGCCTGGGCGACAGAGTGAGACTCC
ATCTCAAACA
CAGTTCATTCCAATCAGACCAGGTAGGAGCTTTCTGTTTCATATGTTTCAGGGTTGCACAGTTGGTCTCTTTAATGTCTG
GTGTGGAGATCCAAAGTGGGTTGTGGAAGAGCGTCCATAGGAGAAGTGAGAATACTGTGAAAAAGGGATGTTAGCATTC
ATTAGAGTATGAGGATGAGTCCCAAGAAGGTTCTTTGGAAGGAGGACGAATAGAATGGAGTAATGAAATCTTGCCATGT
GCTGAGGAGATAGCCAGCATTAGGTGACAATCTTCCAGAAGTGGTCAGGCAGAAGGTGCCCTGGTGAGAGCTCCTTTACA
GGGACTTTATGTGGTTTAGGGCTCAGAGCTCCAAAACCTCTGGGCTCAGCTGCTCCTGTACCTTGGAGGTCCATTACATG
GGAAAGTATTTTGAATGTGTCTTTTGAAGAGAGCATCAGAGTTCCTTAAGGGACTGGGTAAGGCCTGACCCTGAAATGAC
CATGGATATTTTCTACCTACAGTTTGAGTCAACTAGAATATGCCTGGGGACCTTGAAGAATGGCCCTTCAGTGGCCCTC
ACCATTTGTTTATGCTTTCAGTTAATTCAGGTGTTGAAGGAGCTTAGGTTTTAGAGGCACGTAGACTTGGTTCAAGTCTCG
TTAGTAGTTGAATAGCCTCAGGCAAGTCACTGCCACCTAAGATGATGGTTCTTCAACTATAAAATGGAGATAATGGTTA
CAAATGTCTCTTCTATAGTATAATCTCCATAAGGGCATGGCCCAAGTCTGTCTTTGACTCTGCCTATCCCTGACATTTA
GTAGCATGCCCCGACATACAATGTTAGCTATTGGTATTATTGCCATATAGATAAAATATGTATAAAATTAACCTGGGCAA
TAGCCTAAGAAGGGGGGAATATTGTAACACAAATTTAAACCCACTACGCAGGGATGAGGTGCTATAATATGAGGACCTTT
TAACTTCCATCATTTTCTGTTTCTTGAATAGTTTATCTTGTAATGAAATATAAGGCACCTCCCACTTTTATGTATAGA
AAGAGGTCTTTAATTTTTTTTAAATGTGAGAAGGAAGGGAGGAGTAGGAATCTTGAGATTCCAGATCGAAAATACTGTA
CTTTGGTTGATTTTAAAGTGGGCTTCCATTCCATGGATTTAATCAGTCCCAAGAAGATCAAACCTCAGCAGTACTTGGGTG
CTGAAGAACTGTTGGATTTACCCTGGCACGTGTGCCACTTGCCAGCTTCTTGGGCACACAGAGTTCCTCAATCCAAGTTA
TCAGATTGTATTTGAAAATGACAGAGCTGGAGAGTTTTTTGAAATGGCAGTGGCAAATAAATAAATACTTTTTTTTAAAT
GGAAAGACTTGATCTATGGTAATAAATGATTTTGTCTTCTGACTGGAAAAATAGGCCTACTAAAGATGAATCACACTTGA
GATGTTTCTTACTCACTCTGCACAGAAACAAAGAAGAAATGTTATACAGGGAAGTCCGTTTTTCACTATTAGTATGAACCA

AGAAATGGTTCAAAAACAGTGGTAGGAGCAATGCTTTCATAGTTTCAGATATGGTAGTTATGAAGAAAACAATGTCATTT
GCTGCTATTATTGTAAAGAGTCTTATAATTAATGGTACTCCTATAATTTTTGATTGTGAGCTCACCTATTTGGGTAAAGCA
TGCCAATTTAAAGAGACCAAGTGTATGTACATTATGTTCTACATATTCAGTGATAAAATTAATAAATACTATATGTCTG
CTTTAAATTTGACTTTAATATTGTCTTTTGGTATTAAGAAAGATATGCTTTCAGAATAGATATGCTTCGCTTTGGCAAG
GAATTTGGATAGAACTTGCTATTTAAAAGAGGTGTGGGGTAAATCCTTGTATAAATCTCCAGTTTAGCCTTTTTTGAAAA
AGCTAGACTTTCAAATACTAATTTCACTTCAAGCAGGGTACGTTTCTGGTTTGTGCTTGACTTCAGTCACAATTTCTT
ATCAGACCAATGGCTGACCTCTTTGAGATGTCAGGCTAGGCTTACCTATGTGTTCTGTGTCATGTGAATGCTGAGAAGTT
TGACAGAGATCCAACCTTCAGCCTTGACCCCATCAGTCCCTCGGGTAACTAACTGAGCCACCGGTCTCATGGCTATTTT
AATGAGGGTATTGATGGTTAAATGCATGTCTGATCCCTTATCCCAGCCATTTGCACTGCCAGCTGGGAACTATACCAGAC
CTGGATACTGATCCCAAAGTGTTAAATTCACTACATGCTGGAGATTAGAGATGGTGCCAATAAAGGACCCAGAACCCAGG
ATCTTGATTGCTATAGACTTATTAATAATCCAGGTCAAAGAGAGTGACACACACTCTCTCAAGACCTGGGGTGAGGGAGT
CTGTGTTATCTGCAAGGCCATTTGAGGCTCAGAAAAGTCTCTCTTTTCTATAGATATATGCATACTTTCTGACATATAGGA
ATGTATCAGGAATACTCAACCATCACAGGCATGTTTCTACCTCAGGGCCTTTACATGTCCTGTTTACTCTGTCTAGAATG
TCCTTCTGTAGATGACCTGGCTTGCCTCGTCACCTTCAGGTCCCTGCTCAAGTGTCTCTCTCCCCTAGTTAAACTAC
CCCACACCTGTCTGCTTTTCTTGTCTATTTTCTCCATAGCATTTTACCATCTCTTACATTAGACATTTTCTTATTTA
TTTGTAGTTTATAAGCTTCATGAGGCAAGTAACTTTGCTTTGTTTCTTGTGTATCTCCAGTGCCAGAGCAGTGCCTGG
TATATAATAAATATTTATTGACTGAGTGAA

The murine homologue of the T lymphocyte antigen CD28. Molecular cloning and
cell surface expression

J Immunol 144 (8), 3201-3210 (1990)

ACACTTCGGGTTCCCTCGGGGAGGAGGGGCTGGAACCTAGCCCATCGTCAGGACAAAGATGCTCAGGCTGCTCTTGGCTC
TCAACTTATTCCCTTCAATTCAAGTAACAGGAAACAAGATTTTGGTGAAGCAGTCGCCCATGCTTGTAGCGTACGACAAT
GCGGTCAACCTTAGCTGGAACACCTTTGTCCAAGTCCCTATTTCCCGGACCTTCTAAGCCCTTTTGGGTGCTGGTGGT
GGTTGGTGGAGTCTGGCTTGCTATAGCTTGTAGTAACAGTGGCCTTTATTATTTTCTGGGTGAGGAGTAAGAGGAGCA
GGCTCCTGCACAGTGACTACATGAACATGACTCCCCGCCGCCCGGGGCCACCCGCAAGCATTACCAGCCCTATGCCCCA
CCACGCGACTTCGACGCTATCGCTCCTGACACGGACGCTATCCAGAAGCCAGCCGGCTGGCAGCCCCCATCTGCTCAA
TATCACTGCTCTGGATAGGAAATGACCGCCATCTCCAGCCGGCCACCTCAGGCCCTGTTGGGCCACCAATGCCAATTTT
TCTCGAGTGACTAGACCAAATATCAAGATCATTTTGTAGACTCTGAAATGAAGTAAAAGAGATTTTCTGTGACAGGCCAAG
TCTTACAGTGCCATGGCCACATTCCAATTACCATGTACTTAGTGACTTGACTGAGAAGTTAGGGTAGAAAACAAAAAG
GGAGTGGATTCTGGGAGCCTCTTCCCTTTCTCACTACCTGCACATCTCAGTCAAGCAAAGTGTGGTATCCACAGACATT
TTAGTTGCAGAAGAAAGGCTAGGAAATCATTCCTTTTGGTTAAATGGGTGTTTAACTTTTGGTTAGTGGGTAAACGGG
GTAAGTTAGAGTAGGGGGAGGGATAGGAAGACATATTTAAAAACCATTAAACACTGTCTCCCACTCATGAAATGAGCCA
CGTAGTTCTATTTAATGCTGTTTTCTTTAGTTTAGAAATACATAGACATTGTCTTTATGAATTCTGATCATATTTAG
TCATTTTGACCAAATGAGGGATTTGGTCAAATGAGGGATTCCCTCAAAGCAATATCAGGTAAACCAAGTTGCTTTCCTCA
CTCCCTGTCATGAGACTTCAGTGTTAATGTTTCAATATACTTTGAAAGAATAAAATAGTTCTCCTACATGAAGAAAGA
ATATGTCAGGAAATAAGGTCACCTTTATGTCAAAATATTTGAGTACTATGGGACCTGGCGCAGTGGCTCATGCTTGTAAAT
CCCAGCACTTTGGGAGGCCGAGGTGGGCAGATCACTTGAGATCAGGACCAGCTGGTCAAGATGGTGAACTCCGTCTGT
ACTAAAAATACAAAATTTAGCTTGGCTGGTGGCAGGCACCTGTAATCCCAGCTGCCAAGAGGCTGAGGCATGAGAATC
GCTTGAACCTGGCAGGCGGAGGTTGCAGTGAGCCGAGATAGTGCCACAGCTCTCCAGCTGGGCGACAGAGTGAGACTCC
ATCTCAAACAACAACAACAACAACAACAACAACAACAACAACCACAAAATTATTTGAGTACTGTGAAGGATTATTTGTCTAA
CAGTTCATTCCAATCAGACCAGGTAGGAGCTTTCCTGTTTCATATGTTTCAGGGTTGCACAGTTGGTCTCTTTAATGTCG
GTGTGGAGATCCAAAGTGGGTTGTGGAAGAGCGTCCATAGGAGAAGTGAGAATACTGTGAAAAAGGGATGTTAGCATTC
ATTAGAGTATGAGGATGAGTCCCAAGAAGGTTCTTTGGAAGGAGGACGAATAGAATGGAGTAATGAAATCTTGCCATGT
GCTGAGGAGATAGCCAGCATTAGGTGACAATCTTCCAGAAGTGGTCAGGCAGAAGGTGCCCTGGTGAGAGCTCCTTTACA
GGGACTTTATGTGGTTTAGGGCTCAGAGCTCCAAAACCTCTGGGCTCAGCTGCTCCTGTACCTTGGAGGTCCATTACATG
GGAAAGTATTTTGAATGTGTCTTTTGAAGAGAGCATCAGAGTCTTAAAGGACTGGGTAAGGCCTGACCCTGAAATGAC
CATGGATATTTTCTACCTACAGTTTGTGCTCACTAGAATATGCCTGGGGACCTTGAAGAATGGCCCTTCAGTGGCCCTC

ACCATTTGTTTCATGCTTCAGTTAATTCAGGTGTTGAAGGAGCTTAGGTTTTAGAGGCACGTAGACTTGGTTCAAGTCTCG
 TTAGTAGTTGAATAGCCTCAGGCAAGTCACTGCCACCTAAGATGATGGTTCTTCAACTATAAAATGGAGATAATGGTTA
 CAAATGTCTCTTCTATAGTATAATCTCCATAAGGGCATGGCCCAAGTCTGTCTTTGACTCTGCCTATCCCTGACATTTA
 GTAGCATGCCCCGACATACAATGTTAGCTATTGGTATTATTGCCATATAGATAAAATTATGTATAAAAAATTAAGTGGGCAA
 TAGCCTAAGAAGGGGGGAATATTGTAACACAAATTTAAACCCACTACGCAGGGATGAGGTGCTATAATATGAGGACCTTT
 TAACTTCCATCATTTTCTGTTTCTTGAATAGTTTATCTTGTAATGAAATATAAGGCACCTCCCCTTTTATGTATAGA
 AAGAGGTCTTTTAATTTTTTTTTAATGTGAGAAGGAAGGGAGGAGTAGGAATCTTGAGATTCCAGATCGAAAATACTGTA
 CTTTGGTTGATTTTAAAGTGGGCTTCCATTCCATGGATTTAATCAGTCCCAAGAAGATCAAACCTCAGCAGTACTTGGGTG
 CTGAAGAACTGTTGGATTTACCCTGGCACGTGTGCCACTTGCCAGCTTCTTGGGCACACAGAGTTCTTCAATCCAAGTTA
 TCAGATTGTATTTGAAAATGACAGAGCTGGAGAGTTTTTTGAAATGGCAGTGGCAAATAAATAAATACTTTTTTTTAAAT
 GGAAAGACTTGATCTATGGTAATAAATGATTTTGTCTGACTGGAAAAATAGGCCTACTAAAGATGAATCACACTTGA
 GATGTTTCTTACTCACTCTGCACAGAAACAAAGAAGAAATGTTATACAGGGAAGTCCGTTTTCTACTATTAGTATGAACCA
 AGAAATGGTTCAAAAAACAGTGGTAGGAGCAATGCTTTCATAGTTTCAGATATGGTAGTTATGAAGAAAACAATGTCATTT
 GCTGCTATTATTGTAAGAGTCTTATAATTAATGGTACTCCTATAATTTTTGATTGTGAGCTCACCTATTTGGGTAAAGCA
 TGCCAATTTAAAGAGACCAAGTGTATGTACATTATGTTCTACATATTCAGTGATAAAATTACTAACTACTATATGTCTG
 CTTTAAATTTGTACTTTAATATTGTCTTTTGGTATTAAGAAAGATATGCTTTCAGAATAGATATGCTTCGCTTTGGCAAG
 GAATTTGGATAGAAGTTGCTATTTAAAAGAGGTGTGGGGTAAATCCTTGTATAAATCTCCAGTTTAGCCTTTTTTGA
 AGCTAGACTTTCAAATACTAATTTCACTTCAAGCAGGGTACGTTTCTGGTTTGTGCTTGACTTCAGTCACAATTTCTT
 ATCAGACCAATGGCTGACCTCTTTGAGATGTCAGGCTAGGCTTACCTATGTGTTCTGTGTCATGTGAATGCTGAGAAGTT
 TGACAGAGATCCAACTTCAGCCTTGACCCCATCAGTCCCTCGGGTAACTAACTGAGCCACCGGTCTCATGGCTATTTT
 AATGAGGGTATTGATGGTTAAATGCATGTCTGATCCCTTATCCCAGCCATTTGCACTGCCAGCTGGGAACATATACCAGAC
 CTGGATACTGATCCCAAAGTGTTAAATTCAACTACATGCTGGAGATTAGAGATGGTGCCAATAAAGGACCCAGAACCAGG
 ATCTTGATTGCTATAGACTTATTAATAATCCAGGTCAAAGAGAGTGACACACACTCTCTCAAGACCTGGGGTGAGGGAGT
 CTGTGTTATCTGCAAGGCCATTTGAGGCTCAGAAAGTCTCTCTTTCCTATAGATATATGCATACTTTCTGACATATAGGA
 ATGTATCAGGAATACTCAACCATCACAGGCATGTTCTACCTCAGGGCCTTTACATGTCTGTTTACTCTGTCTAGAATG
 TCCTTCTGTAGATGACCTGGCTTGCCTCGTCACCCTTCAGGTCTTGCTCAAGTGTATCTTCTCCCCTAGTTAACTAC
 CCCACACCTGTCTGCTTTCTTGTCTATTTTCTCCATAGCATTTTACCATCTCTTACATTAGACATTTTCTTATTTA
 TTTGTAGTTTATAAGCTTCATGAGGCAAGTAACTTTGCTTTGTTTCTTGTGTATCTCCAGTGCCAGAGCAGTGCCCTGG
 TATATAATAAATATTTATTGACTGAGTGAA

Human CD28 and CTLA-4 Ig superfamily genes are located on chromosome 2 at bands q33-q34

Immunogenetics 31 (3), 198-201 (1990)

AACTTCGGGTTCTCGGGGAGGAGGGCTGGAACCTAGCCCATCGTCAGGACAAAGATGCTCAGGCTGCTCTTGGCTC
 TCAACTTATTCCTTCAATTCAAGTAACAGGAAACAAGATTTTGGTGAAGCAGTCGCCCATGCTTGTAGCGTACGACAAT
 GCGGTCAACCTTAGCTGGAAACACCTTTGTCCAAGTCCCCTATTTCCCGGACCTTCTAAGCCCTTTTGGGTGCTGGTGGT
 GGTGGTGGAGTCCTGGCTTGCTATAGCTTGCTAGTAACAGTGGCCTTTATTATTTTCTGGGTGAGGAGTAAGAGGAGCA
 GGCTCCTGCACAGTGAATGACATGAACATGACTCCCCGCCGCCCGGGCCACCCGCAAGCATTACCAGCCCTATGCCCCA
 CCACGCGACTTCGCAGCCTATCGCTCCTGACACGGACGCCTATCCAGAAGCCAGCCGGCTGGCAGCCCCCATCTGCTCAA
 TATCACTGCTCTGGATAGGAAATGACCGCCATCTCCAGCCGGCCACCTCAGGCCCTGTTGGGCCACCAATGCCAATTTT
 TCTCGAGTGACTAGACCAAATATCAAGATCATTTTGGAGACTCTGAAATGAAGTAAAAGAGATTTTCTGTGACAGGCCAAG
 TCTTACAGTGCCATGGCCACATTCCAATTACCATGTACTTAGTGACTTGACTGAGAAGTTAGGGTAGAAAACAAAAAG
 GGAGTGGATTCTGGGAGCCTCTTCCCTTTCTCACTCACCTGCACATCTCAGTCAAGCAAAGTGTGGTATCCACAGACATT
 TTAGTTGCAGAAGAAAGGCTAGGAAATCATTCCTTTTGGTTAAATGGGTGTTTAACTTTTGGTTAGTGGGTAAACGGG
 GTAAGTTAGAGTAGGGGGAGGGATAGGAAGACATATTTAAAAACCATTAACACTGTCTCCCCTCATGAAATGAGCCA
 CGTAGTTCTATTTAATGCTGTTTTCTTTAGTTTGAATAACATAGACATTGTCTTTATGAATTCTGATCATATTTAG
 TCATTTTGACCAAATGAGGGATTTGGTCAAATGAGGGATTCCCTCAAAGCAATATCAGGTAAACCAAGTTGCTTTCTCA
 CTCCCTGTCATGAGACTTCAGTGTTAATGTTTCAATATACTTTGAAAGAATAAATAAGTTCTCCTACATGAAGAAAGA

ATATGTCAGGAAATAAGGTCACCTTTATGTCAAAATTATTTGAGTACTATGGGACCTGGCGCAGTGGCTCATGCTTGTAAAT
 CCCAGCACTTTGGGAGGCCGAGGTGGGCAGATCACTTGAGATCAGGACCAGCCTGGTCAAGATGGTGAAACTCCGTCTGT
 ACTAAAAATACAAAATTTAGCTTGGCCTGGTGGCAGGCACCTGTAATCCCAGCTGCCAAGAGGCTGAGGCATGAGAATC
 GCTTGAACCTGGCAGGCGGAGGTTGCAGTGAGCCGAGATAGTGCCACAGCTCTCCAGCCTGGGCGACAGAGTGAGACTCC
 ATCTCAAACAACAACAACAACAACAACAACAACAACAACCACAAAATTATTTGAGTACTGTGAAGGATTATTTGTCTAA
 CAGTTCATTCCAATCAGACCAGGTAGGAGCTTTCCTGTTTTCATATGTTTCAGGGTTGCACAGTTGGTCTCTTTAATGTCTG
 GTGTGGAGATCCAAAGTGGGTTGTGGAAAGAGCGTCCATAGGAGAAGTGAGAATACTGTGAAAAAGGGATGTTAGCATTC
 ATTAGAGTATGAGGATGAGTCCCAAGAAGGTTCTTTGGAAGGAGGACGAATAGAATGGAGTAATGAAATTCTTGCCATGT
 GCTGAGGAGATAGCCAGCATTAGGTGACAATCTTCCAGAAGTGGTCAGGCAGAAGGTGCCCTGGTGAGAGCTCCTTTACA
 GGGACTTTATGTGGTTTAGGGCTCAGAGCTCCAAAACCTCTGGGCTCAGCTGCTCCTGTACCTTGGAGGTCCATTACATG
 GGAAAGTATTTTGAATGTGTCTTTTGAAGAGAGCATCAGAGTTCTTAAGGACTGGGTAAGGCCTGACCCTGAAATGAC
 CATGGATATTTTCTACCTACAGTTTGAGTCAACTAGAATATGCCTGGGGACCTTGAAGAATGGCCCTTCAGTGGCCCTC
 ACCATTTGTTTCATGCTTCAGTTAATTCAGGTGTTGAAGGAGCTTAGGTTTTAGAGGCACGTAGACTTGGTTCAAGTCTCG
 TTAGTAGTTGAATAGCCTCAGGCAAGTCACTGCCACCTAAGATGATGGTTCTTCAACTATAAAATGGAGATAATGGTTA
 CAAATGTCTCTTCTATAGTATAATCTCCATAAGGGCATGGCCCAAGTCTGTCTTTGACTCTGCCTATCCCTGACATTTA
 GTAGCATGCCCCACATACAATGTTAGCTATTGGTATTATTGCCATATAGATAAAATTATGTATAAAAAATTAAGTGGGCAA
 TAGCCTAAGAAGGGGGGAATATTGTAACACAAATTTAAACCCACTACGCAGGGATGAGGTGCTATAATATGAGGACCTTT
 TAACTTCCATCATTTTCTGTTTTCTTGAAATAGTTTATCTTGTAATGAAATATAAGGCACCTCCCACTTTTATGTATAGA
 AAGAGGTCTTTTAATTTTTTTTTAATGTGAGAAGGAAGGGAGGAGTAGGAATCTTGAGATTCCAGATCGAAAATACTGTA
 CTTTGGTTGATTTTAAGTGGGCTTCCATTCCATGGATTTAATCAGTCCCAAGAAGATCAAACCTCAGCAGTACTTGGGTG
 CTGAAGAAGCTGTTGGATTTACCCTGGCACGTGTGCCACTTGCCAGCTTCTTGGGCACACAGAGTTCTTCAATCCAAGTTA
 TCAGATTGTATTTGAAAATGACAGAGCTGGAGAGTTTTTTTGAATGGCAGTGGCAAAATAAATAAATACTTTTTTTTTAAAT
 GGAAAGACTTGATCTATGGTAATAAATGATTTTGTCTTCTGACTGGAAAAATAGGCCTACTAAAGATGAATCACACTTGA
 GATGTTTCTTACTCACTCTGCACAGAAACAAAGAAGAAATGTTATACAGGGAAGTCCGTTTTACTATTAGTATGAACCA
 AGAAATGGTTCAAAAAACAGTGGTAGGAGCAATGCTTTCATAGTTTCAGATATGGTAGTTATGAAGAAAACAATGTCATTT
 GCTGCTATTATTGTAAGAGTCTTATAATTAATGGTACTCCTATAATTTTTGATTGTGAGCTCACCTATTTGGGTAAAGCA
 TGCCAATTTAAAGAGACCAAGTGTATGTACATTATGTTCTACATATTCAGTGATAAAATTAATAACTACTATATGTCTG
 CTTTAAATTTGACTTTAATATTGTCTTTTGGTATTAAGAAAGATATGCTTTCAGAATAGATATGCTTCGCTTTGGCAAG
 GAATTTGGATAGAACTTGCTATTTAAAAGAGGTGTGGGGTAAATCCTTGTATAAATCTCCAGTTTAGCCTTTTTTGA
 AGCTAGACTTTCAAATACTAATTTCACTTCAAGCAGGGTACGTTTCTGGTTTGTGCTTGACTTCAGTCACAATTTCTT
 ATCAGACCAATGGCTGACCTCTTTGAGATGTCAGGCTAGGCTTACCTATGTGTTCTGTGTCATGTGAATGCTGAGAAGTT
 TGACAGAGATCCAACCTTCAGCCTTGACCCCATCAGTCCCTCGGGTAACTAACTGAGCCACCGGTCCTCATGGCTATTTT
 AATGAGGGTATTGATGGTTAAATGCATGTCTGATCCCTTATCCCAGCCATTTGCACTGCCAGCTGGGAACATACCAGAC
 CTGGATACTGATCCCAAAGTGTTAAATTCACTACATGCTGGAGATTAGAGATGGTGCCAATAAAGGACCCAGAACCAGG
 ATCTTGATTGCTATAGACTTATTAATAATCCAGGTCAAAGAGAGTGACACACACTCTCTCAAGACCTGGGGTGAGGGAGT
 CTGTGTTATCTGCAAGGCCATTTGAGGCTCAGAAAGTCTCTCTTTCCTATAGATATATGCATACTTTCTGACATATAGGA
 ATGTATCAGGAATACTCAACCATCACAGGCATGTTCCCTACCTCAGGGCCTTTACATGTCCTGTTTACTCTGTCTAGAATG
 TCCTTCTGTAGATGACCTGGCTTGCCTCGTACCCTTCAGGTCCTTGCTCAAGTGTCATCTTCTCCCCTAGTTAAACTAC
 CCCACACCTGTCTGCTTTCTTGTCTTATTTTTCTCCATAGCATTTTACCATCTCTTACATTAGACATTTTCTTATTTA
 TTTGTAGTTTATAAGCTTCATGAGGCAAGTAACTTTGCTTTGTTTCTTGCTGTATCTCCAGTGCCAGAGCAGTGCCTGG
 TATATAATAAATATTTATTGACTGAGTGAA

```

[27]: for x in CTLA4_record:
        print(x.id)
        print(x.description)
        print(x.seq)
  
```

```
print(x.features)
```

NM_001253850.2

Homo sapiens V-set domain containing T cell activation inhibitor 1 (VTCN1),
transcript variant 3, mRNA

```
GTGAGTCACCAAGGAAGGCAGCGGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
GTATTTTCAGCCTTCAGCATGCCGGAAGTGAATGTGGACTATAATGCCAGCTCAGAGACCTTGCGGTGTGAGGCTCCCCGA
TGGTTCCCCCAGCCCACAGTGGTCTGGGCATCCCAAGTTGACCAGGGAGCCAACTTCTCGGAAGTCTCCAATACCAGCTT
TGAGCTGAACTCTGAGAATGTGACCATGAAGTTGTGTCTGTGCTCTACAATGTTACGATCAACAACACATACTCCTGTA
TGATTGAAAATGACATTGCCAAAGCAACAGGGGATATCAAAGTGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAG
CTGCTAAACTCAAAGGCTTCTCTGTGTGTCTCTTCTTTCTTTGCCATCAGCTGGGCACTTCTGCCTCTCAGCCCTTACCT
GATGCTAAAATAATGTGCCTCGGCCACAAAAAGCATGCAAAGTCATTGTTACAACAGGGATCTACAGAACTATTTACC
ACCAGATATGACCTAGTTTTATATTTCTGGGAGGAAATGAATTCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAG
AAACAAAAAGAAGCCAAAAGCAGAAGGCTCCAATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAA
AATAATTCATGTGAACTAGACAAGTGTGTTAAGAGTGATAAGTAAAATGCACGTGGAGACAAGTGCATCCCCAGATCTCA
GGGACCTCCCCCTGCCTGTACCTGGGGAGTGAGAGGACAGGATAGTGCATGTTCTTGTCTCTGAATTTTTAGTTATAT
GTGCTGTAATGTTGCTCTGAGGAAGCCCTGGAAAGTCTATCCCAACATATCCACATCTTATATTCCACAAATTAAGCTG
TAGTATGTACCCTAAGACGCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATG
ATTCACTTTTTATGATGCTTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCA
TAATTTTAGCATAAACAGAGCAGTCGGCGACACCGATTTTATAAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGC
GGGTTTTATTTCTCAGATGATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTTTACCTTGTCTATATGGCATTATGTCAT
CACAAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGACAGCTAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGA
CTCAGCTGGGGTGATTTGCCCCCATCTCCGGGGGAATGTCTGAAGACAATTTTGGTTACCTCAATGAGGGAGTGGAGG
AGGATACAGTGCTACTACCAACTAGTGGATAGAGGCCAGGGATGCTGCTCAACCTCCTACCATGTACAGGACGTCTCCCC
ATTACAACTACCCAATCCGAAGTGTCAACTGTGTCAGGGCTAAGAAACCCTGGTTTTGAGTAGAAAAGGGCCTGGAAGA
GGGGAGCCAAACAAATCTGTCTGCTTCCTCACATTAGTCATTGGCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGC
ACAGAGAGCCAGAACTCTATCGGGCACCAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTG
ATGGGATTATCTTCAGCTTGTTGAGCTTCTAAGTTTCTTTCCCTTCATTCTACCCTGCAAGCCAAGTTCTGTAAGAGAAA
TGCCTGAGTTCTAGCTCAGGTTTTCTTACTCTGAATTTAGATCTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAA
CAAACATATACCTTCCATGAAGCACACACAGACTTTTGAAAGCAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAAT
GAAGCTTTGAAGGAAAAGAATACTTTGTTTCCAGCCCCCTTCCACACTCTTCATGTGTTAACCCTGCCTTCCTGGACC
TTGGAGCCACGGTGACTGTATTACATGTTGTTATAGAAAACCTGATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAAT
ATACATTTCTACACCA
```

```
[SeqFeature(Location(ExactPosition(0), ExactPosition(2257), strand=1),
type='source'), SeqFeature(Location(ExactPosition(0),
ExactPosition(2257), strand=1), type='gene'),
SeqFeature(Location(ExactPosition(0), ExactPosition(104), strand=1),
type='exon'), SeqFeature(Location(ExactPosition(72), ExactPosition(573),
strand=1), type='CDS'), SeqFeature(Location(ExactPosition(104),
ExactPosition(169), strand=1), type='exon'),
SeqFeature(Location(ExactPosition(169), ExactPosition(448), strand=1),
type='exon'), SeqFeature(Location(ExactPosition(448), ExactPosition(618),
strand=1), type='exon'), SeqFeature(Location(ExactPosition(618),
ExactPosition(2257), strand=1), type='exon'),
SeqFeature(Location(ExactPosition(2233), ExactPosition(2239), strand=1),
type='regulatory'), SeqFeature(Location(ExactPosition(2256),
```

```

ExactPosition(2257), strand=1), type='polyA_site')]
NM_001253849.2
Homo sapiens V-set domain containing T cell activation inhibitor 1 (VTCN1),
transcript variant 2, mRNA
CTGGTAATCTGTGGCGTAACAAGACCTCCAGGTGATTCTCTGTATTAGCAGCCGCTCTGTGCTCCCTGATTCCCTCCAGAA
AAGCACAAGGATTTAATCCAGATAGATATAAAATTTACCTGGGATCATTATCATTCCACATTCTTCTTTAAGAAATGTG
CTAAAGAGCCACAGATGGGTCTTGATGAAAACAAAGGAAAAGCCATGAAGTTTCTACAGCATAATTAGCATCATCATTAT
TCTGGCTGGAGCAATTGCACTCATCATTGGCTTTGGTATTTTCAGGGAGACACTCCATCACAGTCACTACTGTCGCCTCAG
CTGGGAACATTGGGGAGGATGGAATCCTGAGCTGCACTTTTGAACCTGACATCAAACCTTTCTGATATCGTGATACAATGG
CTGAAGGAAGGTGTTTTAGGCTTGGTCCATGAGTTCAAAGAAGGCAAAGATGAGCTGTGCGGAGCAGGATGAAATGTTGAG
AGGCCGGACAGCAGTGTTTTGCTGATCAAGTGATAGTTGGCAATGCCTCTTTGCGGCTGAAAAACGTGCAACTCACAGATG
CTGGCACCTACAAATGTTATATCATCACTTCTAAAGGCAAGGGGAATGCTAACCTTGAGTATAAACTGGAGCCTTCAGC
ATGCCGGAAGTGAATGTGGACTATAATGCCAGCTCAGAGACCTTGCGGTGTGAGGCTCCCCGATGGTTCCCCCAGCCCAC
AGTGGTCTGGGCATCCCAAGTTGACCAGGGAGCCAACTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGA
ATGTGACCATGAAGGTTGTGTCTGTGCTCTACAATGTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATT
GCCAAAGCAACAGGGGATATCAAAGTGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAGCTGCTAAACTCAAAGGC
TTCTCTGTGTCTCTTCTTTCTTTGCCATCAGCTGGGCACCTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTG
CCTCGGCCACAAAAAAGCATGCAAAGTCATTGTTACAACAGGGATCTACAGAACTATTTCAACCACCAGATATGACCTAGT
TTTATATTTCTGGGAGGAAATGAATTCATATCTAGAAGTCTGGAGTGAGCAAAACAAGAGCAAGAAAACAAAAAGAAGCCAA
AAGCAGAAGGTCCAATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAAATAATTCATGTGAACT
AGACAAGTGTGTTAAGAGTGATAAGTAAATGACCGTGAGACAAGTGCATCCCAGATCTCAGGGACCTCCCCCTGCCT
GTCACCTGGGGAGTGAGAGGACAGGATAGTGCATGTTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTC
TGAGGAAGCCCCTGGAAGTCTATCCCAACATATCCACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGA
CGCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATGATTCACTTTTTATGATG
CTTCCAAAGGTGCCTTGCTTCTCTTCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACA
GAGCAGTCGGCGACACCGATTTTATAAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGCGGGTTTTATTTCTCAGAT
GATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTTTACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTT
CTCCTTTCCATCCTGCGTGACAGCTAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTT
CGCCCCCATCTCCGGGGGAATGTCTGAAGACAATTTTGGTTACCTCAATGAGGGAGTGAGGAGGATACAGTGCTACTA
CCAAGTGTCAACTGTGTGCTAGGGGCTAAGAAACCCTGGTTTTGAGTAGAAAAGGGCTGGAAGAGGGGAGCCAAACAAATCT
GTCTGCTTCCTCACATTAGTCATTGGCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTC
TATCGGGCACCAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGC
TTGTTGAGCTTCTAAGTTTCTTTCCCTTCATTCTACCTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTC
AGGTTTTCTTACTCTGAATTTAGATCTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCA
TGAAGCACACACAGACTTTTGAAGCAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAA
GAATACTTTGTTTCCAGCCCCCTTCCCACACTCTTCATGTGTTAACCCTGCCTTCTGGACCTTGGAGCCACGGTGACT
GTATTACATGTTGTTATAGAAAACCTGATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTACACCA
[SeqFeature(FeatureLocation(ExactPosition(0), ExactPosition(2720), strand=1),
type='source'), SeqFeature(FeatureLocation(ExactPosition(0),
ExactPosition(2720), strand=1), type='gene'),
SeqFeature(FeatureLocation(ExactPosition(0), ExactPosition(219), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(205), ExactPosition(208),
strand=1), type='misc_feature'), SeqFeature(FeatureLocation(ExactPosition(219),
ExactPosition(284), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(284), ExactPosition(632), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(472),
ExactPosition(1036), strand=1), type='CDS'),

```

```
SeqFeature(FeatureLocation(ExactPosition(632), ExactPosition(911), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(911),
ExactPosition(1081), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(1081), ExactPosition(2720), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(2696),
ExactPosition(2702), strand=1), type='regulatory'),
SeqFeature(FeatureLocation(ExactPosition(2719), ExactPosition(2720), strand=1),
type='polyA_site')]
```

NR_045604.2

Homo sapiens V-set domain containing T cell activation inhibitor 1 (VTCN1),
transcript variant 5, non-coding RNA

```
GTGAGTCACCAAGGAAGGCAGCGGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
GTATTTCAAGGAGACACTCCATCACAGTCACTACTGTGCGCTCAGCTGGGAACATTGGGGAGGATGGAATCCTGAGCTGC
ACTTTTGAACCTGACATCAAACCTTTCTGATATCGTGATAACAATGGCTGAAGGAAGGTGTTTTAGGCTTGGTCCATGAGTT
CAAAGAAGGC AAAAGATGAGCTGTGCGAGCAGGATGAAATGTTGAGAGGCCGGACAGCAGTGTGCTGATCAAGTGATAG
TTGGCAATGCCTCTTTGCGGCTGAAAAACGTCCAACCTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGAA
TGTGACCATGAAGGTTGTGTCTGTGCTCTACAATGTTACGATCAACAACACATACTCCTGTATGATTGAAAATGACATTG
CCAAAGCAACAGGGGATATCAAAGTGACAGAAATCGGAGATCAAAGGCCGAGTCACCTACAGCTGCTAAACTCAAAGGCT
TCTCTGTGTGTCTCTTTCTTTGCCATCAGCTGGGCACTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTGC
CTCGGCCACAAAAAGCATGCAAAGTCATTGTTACAACAGGGATCTACAGAACTATTTACACCACAGATATGACCTAGTT
TTATATTTCTGGGAGGAAATGAATTCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAGAAACAAAAAGAAGCCAAA
AGCAGAAGGCTCCAATATGAACAAGATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAATAATTCATGTGAACTA
GACAAGTGTGTTAAGAGTGATAAGTAAATGCACGTGGAGACAAGTGCATCCCCAGATCTCAGGGACCTCCCCCTGCCTG
TCACCTGGGGAGTGAGAGGACAGGATAGTGCATGTTCTTTGTCTCTGAATTTTGTATATGTGCTGTAATGTTGCTCT
GAGGAAGCCCCTGGAAAGTCTATCCCAACATATCCACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGAC
GCTGCTAATTGACTGCCACTTCGCAACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATGATTCACCTTTTTATGATGC
TTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACAG
AGCAGTCGCGGACACCGATTTTATAAATAAACTGAGCACCTTCTTTTTAAACAAACAAATGCGGGTTTATTTCTCAGATG
ATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTTTCACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTTC
TCCTTTCCATCCTGCGTGGACAGCTAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTTC
GCCCCCATCTCCGGGGGAATGTCTGAAGACAATTTTGTTACCTCAATGAGGGAGTGAGGAGGATACAGTGCTACTAC
CAACTAGTGGATAGAGGCCAGGGATGCTGCTCAACCTCCTACCATGTACAGGACGCTCTCCCCATTACAACCTACCCAATCC
GAAGTGTCAACTGTGTCAGGGCTAAGAAACCCTGGTTTTGAGTAGAAAAGGGCCTGGAAAGAGGGGAGCCAACAAATCTG
TCTGCTTCCCTCACATTAGTCATTGGCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTCT
ATCGGGCACCAGGATAACATCTCTCAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGCT
TGTTGAGCTTCTAAGTTTCTTTCCCTTCATTCTACCCTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTCA
GGTTTTCTTACTCTGAATTTAGATCTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTCCAT
GAAGCACACACAGACTTTTGAAAGCAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAAAG
AATACTTTGTTTCCAGCCCCCTTCCACACTCTTCATGTGTTAACCCTGCCTTCCTGGACCTTGAGGCCACGGTGACTG
TATTACATGTTGTTATAGAAAACCTGATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTACACCA
```

```
[SeqFeature(FeatureLocation(ExactPosition(0), ExactPosition(2399), strand=1),
type='source'), SeqFeature(FeatureLocation(ExactPosition(0),
ExactPosition(2399), strand=1), type='gene'),
SeqFeature(FeatureLocation(ExactPosition(0), ExactPosition(2399), strand=1),
type='misc_RNA'), SeqFeature(FeatureLocation(ExactPosition(0),
ExactPosition(104), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(72), ExactPosition(465), strand=1),
```

```

type='misc_feature'), SeqFeature(FeatureLocation(ExactPosition(104),
ExactPosition(169), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(169), ExactPosition(431), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(431), ExactPosition(590),
strand=1), type='exon'), SeqFeature(FeatureLocation(ExactPosition(590),
ExactPosition(760), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(760), ExactPosition(2399), strand=1),
type='exon'))]

```

NR_045603.2

Homo sapiens V-set domain containing T cell activation inhibitor 1 (VTCN1),
transcript variant 4, non-coding RNA

```

GTGAGTCACCAAGGAAGGCAGCGGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
GTATTTTCAGAAAGTCTCTGTCTGGCTTTTCAGCAATGAAGGGTTTGGTTGTAGAAGTTCCAAGGCTTCCCTTAGCATTGATC
TTTGCTTCCCTGAACTGCAGGGAGACACTCCATCACAGTCACTACTGTGCCTCAGCTGGGAACATTGGGGAGGATGGAAT
CCTGAGCTGCACTTTTGAACCTGACATCAAACCTTCTGATATCGTGATACAATGGCTGAAGGAAGGTGTTTTAGGCTTGG
TCCATGAGTTCAAAGAAGGCAAAGATGAGCTGTCGGAGCAGGATGAAATGTTTCAGAGGCCGGACAGCAGTGTGCTGAT
CAAGTGATAGTTGGCAATGCCTCTTTGCGGCTGAAAAACGTGCAACTCACAGATGCTGGCACCTACAAATGTTATATCAT
CACTTCTAAAGGCAAGGGGAATGCTAACCTTGAGTATAAACTGGAGCCTTCAGCATGCCGGAAGTGAATGTGGACTATA
ATGCCAGCTCAGAGACCTTGCGGTGTGAGGCTCCCCGATGGTTCCCCCAGCCACAGTGGTCTGGGCATCCCAAGTTGAC
CAGGGAGCCAACTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGAATGTGACCATGAAGGTTGTGTCTGT
GCTCTACAATGTTACGATCAACAACACATACTCTGTATGATTGAAAATGACATTGCCAAAGCAACAGGGGATATCAAAG
TGACAGAATCGGAGATCAAAAGGCGGAGTCACCTACAGCTGCTAAACTCAAAGGCTTCTCTGTGTGTCTCTCTTTCTTT
GCCATCAGCTGGGCACCTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTGCCTCGGCCACAAAAAGCATGCAAAA
GTCATTGTTACAACAGGGATCTACAGAATAATTTACCACCAGATATGACCTAGTTTTATATTTCTGGGAGGAAATGAAT
TCATATCTAGAAGTCTGGAGTGAGCAAACAAGAGCAAGAAACAAAAAGAAGCCAAAAGCAGAAGGCTCCAATATGAACAA
GATAAATCTATCTTCAAAGACATATTAGAAGTTGGGAAAATAATTCATGTGAACTAGACAAGTGTGTTAAGAGTGATAAG
TAAATGACAGTGGAGACAAGTGATCCCCAGATCTCAGGGACCTCCCCCTGCCTGTACCTGGGGAGTGAGAGGACAGG
ATAGTGATGTTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTCTGAGGAAGCCCCTGGAAAGTCTATC
CCAACATATCCACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGACGCTGCTAATTGACTGCCACTTCGC
AACTCAGGGGCGGCTGCATTTTAGTAATGGGTCAAATGATTCACTTTTTATGATGCTTCCAAAGGTGCCTTGGCTTCTCT
TCCCAACTGACAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACAGAGCAGTCGGCGACACCGATTTTAT
AAATAAACTGAGCACCTTCTTTTTTAAACAAACAAATGCGGGTTTTATTTCTCAGATGATGTTTCATCCGTGAATGGTCCAGG
GAAGGACCTTTACCTTGTCTATATGGCATTATGTCATCACAAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGGACAGC
TAAGACCTCAGTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTCGCCCCCATCTCCGGGGGAATGTC
TGAAGACAATTTTGGTTACCTCAATGAGGGAGTGAGGAGGATACAGTGCTACTACCAACTAGTGGATAGAGGCCAGGGA
TGCTGCTCAACCTCCTACCATGTACAGGACGTCTCCCCATTACAACCTACCCAATCCGAAGTGTCAACTGTGTCAGGGCTA
AGAAACCCTGGTTTTGAGTAGAAAAGGGCTGGAAAGAGGGGAGCCAACAAATCTGTCTGCTTCTCACATTAGTCATTG
GCAAATAAGCATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTCTATCGGGCACCAGGATAACATCTCT
CAGTGAACAGAGTTGACAAGGCCTATGGGAAATGCCTGATGGGATTATCTTCAGCTTGTTGAGCTTCTAAGTTTCTTTCC
CTTCATTCTACCTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTCAGGTTTTCTTACTCTGAATTTAGAT
CTCCAGACCCTGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCATGAAGCACACACAGACTTTTGAAAG
CAAGGACAATGACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAAGAATACTTTGTTTCCAGCCCCCTTC
CCACACTCTTCATGTGTTAACCCTGCCTTCCCTGGACCTTGGAGCCACGGTACTGTATTACATGTTGTTATAGAAAACCT
GATTTTAGAGTTCTGATCGTTCAAGAGAATGATTAAATATACATTTCTACACCA

```

```

[SeqFeature(FeatureLocation(ExactPosition(0), ExactPosition(2695), strand=1),
type='source'), SeqFeature(FeatureLocation(ExactPosition(0),
ExactPosition(2695), strand=1), type='gene'),

```



```

SeqFeature(FeatureLocation(ExactPosition(0), ExactPosition(2695), strand=1),
type='misc_RNA'), SeqFeature(FeatureLocation(ExactPosition(0),
ExactPosition(104), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(72), ExactPosition(252), strand=1),
type='misc_feature'), SeqFeature(FeatureLocation(ExactPosition(104),
ExactPosition(169), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(169), ExactPosition(607), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(607), ExactPosition(886),
strand=1), type='exon'), SeqFeature(FeatureLocation(ExactPosition(886),
ExactPosition(1056), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(1056), ExactPosition(2695), strand=1),
type='exon')]

```

NM_001005366.2

Homo sapiens lysine demethylase 2B (KDM2B), transcript variant 2, mRNA

GCTGAAATGGTTTCCTAGGACTTTGCAAACGGATCTGCCTAAGTGTGGTGCAAACTTTGTAGATCTCGGCTCTGGCT
TGCTTTATTTATTTATTTTGGTTTGTTCCTTGGTCTTCCCTCCTTCCCCCTCGGCCAAAATGCAGGGGGCAGGAG
TGTTGACAATTAATTGGTGAACCTCTCTAAAAAATGGAGGCAGAGAAAGACTCTGGAAGAAGATTGCGCCCGATTGACC
GCCAGCGATACGACGAGAACGAGGACTTGTCTGGACGTGGAGGAGATCGTCAGCGTCCGCGGCTTCAGCCTGGAGGAGAAG
CTTCGCAGCCAGCTGTACCAGGGGACTTCGTGCACGCCATGGAGGGCAAAGATTCAACTATGAGTACGTACAGAGAGA
AGCTCTCAGGGTCCCTGATATTTGAGAAAAGGATGGACTGGGAATTAAGATGCCTGACCCTGATTTACAGTCCGAG
ACGTCAAACCTCTAGTGGGGAGCCGGCGGCTTGTGGACGTGATGGATGTGAACACCCAGAAGGGCACGGAGATGAGCATG
TCCCAGTTTGTGCGTTACTACGAGACGCCCCGAGGCCAGCGGGACAAGCTGTACAACGTCATCAGCCTAGAGTTCAGCCA
CACCAAGCTGGAGCACTTGGTCAAGCGTCCGACTGTGGTAGACCTGGTGGACTGGGTGGACAACATGTGGCCCCAGCATC
TGAAGGAGAAGCAGACAGAAGCCACGAACGCCATTGCAGAGATGAAGTACCCGAAAGTGAAAAAGTACTGTCTGATGAGC
GTGAAAGGTTGTTTACCGACTTCCACATCGACTTTGGAGGCACTTCCGTTTGGTACCATGTTTTCCGGGTGGGAAGAT
TTTTTGGCTGATTCTCCAACGCTGCACAATTTGGCGCTGTACGAGGAGTGGGTGCTGTCAGGCAAACAGAGTGACATCT
TTCTGGGAGACCGTGTGGAACGATGCCAAGAATTGAGCTGAAGCAGGGCTACACATTTTTCATCCCTTCCGGTTGGATC
CATGCCGTCTACACCCCTGTAGACTCTTGGTGTTCGGCGGAAACATCCTGCACAGCTTTAACGTGCCCATGCAGCTGCG
GATCTACGAGATCGAGGACAGGACGCGGGTGCAGCCCAAATTCGGTTACCCCTTCTACTATGAGATGTGCTGGTATGTCC
TGGAGAGATACGTGTACTGTGTGACCCAGCGCTCCACCTCACTCAGGAATACCAGAGGGAGTCGATGCTTATTGATGCC
CCGAGGAAGCCAGCATAGACGGCTTCTCTCGGATTCTGGCTGGAGATGGAGGAGGAGGCCTGTGATCAGCAGCCTCA
GGAGGAGGAGGAGAAGGACGAGGAGGGCGAGGGCAGGGACAGGGCACCCAAACCGCCACCGATGGCTCCACTTCACCCA
CCAGCACGCCCTCTGAGGACCAGGAGGCCCTCGGGAAGAAGCCCAAAGCACCTGCCCTGCGATTCTCAAAGGACTTTG
TCTAATGAGTCGGAGGAAAGTGTGAAGTCCACCACATTGGCCGTAGACTACCCAAAGACCCCAACCGGCTCTCCGCCAC
GGAGTCTCTGCCAAATGGACCATCTCACTGAGTTTGAAGTGAAGGGCCTGAAAGCTCTGGTGGAGAACTGGAATCCC
TCCCGGAGAAACAAGAAGTGTGTCCCCGAGGGCATCGAGGACCCCAAGCACTCCTGGAGGGTGTGAAGAAGTCTCTGAAG
GAGCACGCAGATGATGACCCTAGTCTGGCCATCACTGGGGTCCCTGTGGTGACTTGGCCAAAGAAGACTCCAAAGAACCG
GGCTGTGGGTGCGCCCAAGGGGAAGCTGGGCCCCGCTCCGCGGTGAAGTTGGCCGCAACCGGACAACGGCAGGAGCTC
GGCGGCGCCGACGCGATGCCGCAAGTGCGAGGCCTGCCTGCGGACCGAGTGCGGAGAGTGCCACTTCTGCAAGGACATG
AAGAAGTTCGGGGGCCCCGGGCGCATGAAGCAGAGCTGCATCATGCGGCAGTGCATCGCGCCAGTGTGCCCCACACCGC
CGTGTGCCTTGTGTGTGGCGAGGCGGGGAAGGAAGACACGGTGAAGAGGAGGAAGGCAAGTTTAACCTCATGCTCATGG
AGTGCTCCATCTGCAATGAAATCATCCACCCTGGATGCCTTAAGATTAAGGAGTCAGAGGGTGTGGTCAACGACGAGCTT
CCAAACTGCTGGGAGTGTCCGAAGTGTAAACACGCCGGAAGACCGGGAACAAAAGCGTGGCCCTGGCTTTAAGTACGC
CTCCAACCTGCCCCGCTCCCTGCTCAAGGAGCAGAAGATGAACCGGGACAACAAGGAAGGGCAGGAACCTGCCAAGCGGA
GGAGTGAGTGTGAGGAGGCGCCCCGGCGCAGGTCCGATGAGCACTCGAAGAAGGTGCCGCCGGACGGCCTTCTGCGCAGA
AAGTCTGACGACGTGCACCTGAGGAAGAAGCGGAAATACGAGAAGCCCCAGGAGCTGAGTGACGCAAGCGGCTCAAACC
TGGCAAAGAAGATAAGCTTTTCAGGAAAAAGCGCGGTCTGGAAGAACCGCGAGGACCGCATGGCGCTGGCCAACAAGC
CCCTCCGGCGCTTCAAGCAGGAACCCGAGGACGAACTGCCCGAGGCGCCCCCAAGACCAGGGAGAGCGACCACTCCCGC

TCCAGCTCCCCACCGCGGGACCCAGCACCGAAGGGGCCGAGGGCCCGGAGGAGAAGAAGAAGGTGAAGATGCGCCGGAA
GCGGCGGCTTCCCAACAAGGAGCTGAGCAGGGAGCTGAGCAAGGAGCTCAACCACGAGATCCAGAGGACGGAGAACAGCC
TGGCCAACGAGAACAGCAGCCCATCAAGTCGGAGCCTGAGAGCGAGGGCGAGGAGCCCAAGCGGCCCCGGGCATCTGC
GAGCGTCCCCACCGCTTCAGCAAGGGGCTCAACGGCACCCCCGGGAGCTGCGGCACCAGCTGGGGCCCAGCCTGCGCAG
CCCGCCCCGTGTCATCTCCCGGCCCCCACCCTCCGTGTCCCGGCCAAAGTGTATCCAGATGGAGCGCCATGTGATCCGGC
CACCCCCCATAGCCCCCGCCTGACTCGCTACCCTGGACGATGGGGCAGCCCACGTCATGCACAGGGAGGTGTGGATG
GCCGTCTTCAGCTACCTCAGCCACCAAGACCTGTGTGTGTGCATGCGGGTCTGCAGGACCTGGAACCGCTGGTGTGCGA
TAAGCGTTGTGGACCCGATTGACCTGAACCACTGCAAGTCTATCACACCCCTGATGCTGAGTGGCATCATCCGGCGAC
AGCCCGTCTCCCTCGACCTCAGCTGGACCAATATCTCCAAGAAGCAGCTGAGCTGGCTCATCAACCGCTGCCTGGGCTC
CGGGACTTGGTGTGTGTCAGGCTGCTCATGGATCGCGGTCTCGGCCCTTTGCAGCTCCAGTTGTCCGCTGCTCCGGACCCT
GGATGTCCAGTGGGTGGAGGGACTAAAGGATGCCAGATGCGGGATCTCCTGTCCCGCCCACAGACAACAGGCCAGGTC
AGATGGACAATCGGAGCAAGCTCCGGAACATCGTGGAGCTGCGCCTGGCAGGCCTGGACATCACAGATGCCTCCCTGCGG
CTCATCATCCGCCACATGCCCCTGCTCTCCAAGTCCACCTCAGTTACTGTAACCACGTCAACGACCAGTCTATCAACCT
GCTCACTGCTGTTGGCACCAACCACCCGAGACTCCTTAACCGAGATCAACCTGTCTGACTGCAATAAGGTCAGTGATCAGT
GCCTGTCTTCTTCAAACGCTGTGGAAACATCTGTGCATATTGACCTGAGGTACTGCAAGCAAGTCACCAAGGAAGGCTGT
GAGCAGTTCATAGCCGAGATGTCTTCTTTCCAAGGGAGAAGCTGTTCAACCACCCGTTTGGGGGATGAGTGAGCCGACAC
TTTCCTTTGGTCTTTCTGAATCGTAACCTGCACTGCTTTCTGGACCATTCTAAGGCGGCCTTTACAAGAAGACATTCTCTG
TCGGAGAGGAGGGTGGACTTCGGAGAAATTCTCATACTGAAGCATGAGCTTAGGAGTTTCTGTTAGTGGTAGTGGTGT
TGGACACTTCATTCTTGAACACCGAGGTTTTGGGTGTTGACATAAAGTGGACCACACACCACATCTGCTGCCGTCTTG
ACACTTTTTTTTGTGTTGGTTGGTTTTGTTACATCTTACATTATGCAGAACTATTTTTGTACAAATTGTTTAAAAGTTATT
TATGCAAGGTTTGAATGCATACCAGTGTTTTTATTGTTTTGAGATTGCCAATTTTCTGATTTCTTAAAGGTAGGAGAGA
ATTTAACGTGTACTTCATCGACACAACCCATCTACAAATGTGCCAGATCTAACAAAGTAGGCTAAGACCTTCCACTTAA
AAGCATGTTTAACTGGAAGTTGAGAGTCTGCTTTGTACCTCAAGAGTTACATGAGCATGTTGTGGATAAATGTAAATTAT
AGTCAAAGTAAGATACTCTGCCAAGTTTCTCTGTAGAGAATTCACCTTTTCTCAAATTTTAAAATTTGACTTCAGCCTT
TGCACTCAGGAGGTTCTGCTCCAGCATGAGCTCTGTACTTACATAGATCTAATTTATACAGTGAGTCAAGACGTAGAAT
AAATGCTCCACATAGCCTTTCTTTTGCTTTTGCTTCTCTCTCTGAAGTGTGAGTTGAGTTCTCATTTAGGTTTGTAAAC
ATGGCTATTTCTAGTTGTAAAGTTCTGCATTTATAAGTGCCATTGTTGTAAGGTGGTGTTCCTAGACCTTCCCTGATG
CGATTTTACCTTTGTTGAATTTGTATAAACAATTGTACAAAAAAACCCTTGAACCTTTGAGGGTTTCTGTTCTAGGA
GTGGACTAGAAGTTTAAAGCCAGAGTCAGTAAACACTGTTTTGAAGTCCAAA

[SeqFeature(FeatureLocation(ExactPosition(0), ExactPosition(5012), strand=1),
type='source'), SeqFeature(FeatureLocation(ExactPosition(0),
ExactPosition(5012), strand=1), type='gene'),
SeqFeature(FeatureLocation(ExactPosition(0), ExactPosition(227), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(170), ExactPosition(173),
strand=1), type='misc_feature'), SeqFeature(FeatureLocation(ExactPosition(194),
ExactPosition(3992), strand=1), type='CDS'),
SeqFeature(FeatureLocation(ExactPosition(227), ExactPosition(372), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(372), ExactPosition(451),
strand=1), type='exon'), SeqFeature(FeatureLocation(ExactPosition(451),
ExactPosition(498), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(498), ExactPosition(677), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(677), ExactPosition(784),
strand=1), type='exon'), SeqFeature(FeatureLocation(ExactPosition(784),
ExactPosition(878), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(878), ExactPosition(1032), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(1032),
ExactPosition(1148), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(1148), ExactPosition(1275), strand=1),

```

type='exon'), SeqFeature(FeatureLocation(ExactPosition(1275),
ExactPosition(1748), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(1748), ExactPosition(1835), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(1835),
ExactPosition(2060), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(2060), ExactPosition(2204), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(2204),
ExactPosition(2291), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(2291), ExactPosition(2552), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(2552),
ExactPosition(2591), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(2591), ExactPosition(3271), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(3271),
ExactPosition(3435), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(3435), ExactPosition(3597), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(3597),
ExactPosition(3816), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(3816), ExactPosition(3944), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(3944),
ExactPosition(5012), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(4330), ExactPosition(4331), strand=1),
type='polyA_site'), SeqFeature(FeatureLocation(ExactPosition(4987),
ExactPosition(4993), strand=1), type='regulatory'),
SeqFeature(FeatureLocation(ExactPosition(5011), ExactPosition(5012), strand=1),
type='polyA_site')]

```

NM_032590.5

Homo sapiens lysine demethylase 2B (KDM2B), transcript variant 1, mRNA

```

GTACGTGTGTGTGTCACATCTTTGAGTGCCGGGAGTTAAAAAGTTAGGCAGTCCTTATAGGTATGGAAGCCGAGCTAAT
TTCCTTCTGAGCCCCCAAATGCCTCCTCCACATGGCGGGTCCGCAAATGGGGGGATCTGCAGAGGATCACCCCCACGA
AAAAGACATGCAGCAGAAAAAGCAAAAAAGAAAAACAGTTATATATACAAAAATGCTTTGAATTTGAGTCGGCCACACAGCG
CCCGATTGACCGCCAGCGATACGACGAGAACGAGGACTTGTGCGACGTGGAGGAGATCGTCAGCGTCCGCGGCTTCAGCC
TGGAGGAGAAGCTTCGCAGCCAGCTGTACCAGGGGACTTCGTGCACGCCATGGAGGGCAAAGATTTCAACTATGAGTAC
GTACAGAGAGAAGCTCTCAGGGTTCCCCTGATATTTTCGAGAAAAGGATGGACTGGGAATTAAGATGCCTGACCCTGATTT
CACAGTCCGAGACGTCAAACCTCTAGTGGGGAGCCGGCGGCTTGTGGACGTGATGGATGTGAACACCCAGAAGGGCACGG
AGATGAGCATGTCCCAGTTTGTGCGTTACTACGAGACGCCCCAGGCCCCAGCGGGACAAGCTGTACAACGTCATCAGCCTA
GAGTTCAGCCACACCAAGCTGGAGCACTTGGTCAAGCGTCCGACTGTGGTAGACCTGGTGGACTGGGTGGACAACATGTG
GCCCCAGCATCTGAAGGAGAAGCAGACAGAAGCCACGAACGCCATTGCAGAGATGAAGTACCCGAAAGTGAAAAAGTACT
GTCTGATGAGCGTGAAAGGTTGTTTCACCGACTTCCACATCGACTTTGGAGGCACTTCCGTTTGGTACCATGTTTTCCGG
GGTGGGAAGATTTTTTGGCTGATTCCCTCCAACGCTGCACAATTTGGCGCTGTACGAGGAGTGGGTGCTGTACGGCAAACA
GAGTGACATCTTTCTGGGAGACCGTGTGGAACGATGCCAAAGAATTGAGCTGAAGCAGGGCTACACATTTTTTCATCCCTT
CCGGTTGGATCCATGCCGTCTACACCCCTGTAGACTCTTTGGTGTTCGGCGGAAACATCCTGCACAGCTTTAACGTGCCC
ATGCAGCTGCGGATCTACGAGATCGAGGACAGGACGCGGGTGCAGCCCCAAATTCCGTTACCCCTTCTACTATGAGATGTG
CTGGTATGTCTGGAGAGATACGTGTACTGTGTGACCCAGCGCTCCACCTCACTCAGGAATACCAGAGGGAGTCCGATGC
TTATTGATGCCCCGAGGAAGCCCAGCATAGACGGCTTCTCTTCGGATTCTTGGCTGGAGATGGAGGAGGAGGCCTGTGAT
CAGCAGCCTCAGGAGGAGGAGGAGAAGGACGAGGAGGGCGAGGGCAGGGACAGGGCACCCAAACCGCCCACCGATGGCTC
CACTTCACCCACCAGCACGCCCTCTGAGGACCAGGAGGCCCTCGGGAAGAAGCCCAAAGCACCTGCCCTGCGATTCTCTCA
AAAGGACTTTGTCTAATGAGTCGGAGGAAAGTGTGAAGTCCACCACATTGGCCGTAGACTACCCCAAGACCCCCACCGGC
TCTCCCGCCACGGAGGTCTCTGCCAAATGGACCCATCTCACTGAGTTTGAAGTGAAGGGCCTGAAAGCTCTGGTGGAGAA

```

ACTGGAATCCCTCCCGGAGAACAAGAAGTGTGTCCCGGAGGGCATCGAGGACCCCCAGGCACTCCTGGAGGGTGTGAAGA
 ACGTCCTGAAGGAGCAGCGAGATGATGACCCTAGTCTGGCCATCACTGGGGTCCCTGTGGTGACTTGGCCAAAGAAGACT
 CCAAAGAACCGGGCTGTGGGTGCGCCCAAGGGGAAGCTGGGCCCGGCTCCGCGGTGAAGTTGGCCGCCAACCGGACAAC
 GGCAGGAGCTCGGCGGCGCCGGACGCGATGCCGCAAGTGCGAGGCCTGCCTGCGGACCGAGTGCGGAGAGTGCCACTTCT
 GCAAGGACATGAAGAAGTTCGGGGGCCCCGGGCGCATGAAGCAGAGCTGCATCATGCGGCAGTGATCGCGCCAGTGCTG
 CCCCACACCGCGGTGTGCCTTGTGTGTGGCGAGGCGGGGAAGGAAGACACGGTGAAGAGGAGGAAGGCAAGTTTAACCT
 CATGCTCATGGAGTGCTCCATCTGCAATGAAATCATCCACCCTGGATGCCTTAAGATTAAGGAGTCAGAGGGTGTGGTCA
 ACGACGAGCTTCCAACTGCTGGGAGTGTCGGAAGTGTAACCACGCCGGCAAGACCGGGAAACAAAAGCGTGGCCCTGGC
 TTTAAGTACGCCTCCAACCTGCCCGCTCCCTGCTCAAGGAGCAGAAGATGAACCGGGACAACAAGGAAGGGCAGGAACC
 TGCCAAGCGGAGGAGTGAGTGTGAGGAGGCGCCCGGCGCAGGTGCGATGAGCACTCGAAGAAGGTGCCGCCGACGGCC
 TTCTGCGCAGAAAAGTCTGACGACGTGCACCTGAGGAAGAAGCGGAAATACGAGAAGCCCCAGGAGCTGAGTGGACGCAAG
 CGGGCCTCATCGCTTCAAACGTCCCCGGTTCCTCCTCTCACCTCTCGCCGAGGCCCCCTCTAGGCAGCAGCCTCAGCCC
 CTGGTGGAGATCCAGTCTCACTTACTTCCAGCAGCAGCTCAAACCTGGCAAAGAAGATAAGCTTTTCAGAAAAAGCGGC
 GGTCTTGAAGAACGCCGAGGACCGCATGGCGCTGGCCAACAAGCCCCCTCCGCGCTTCAAGCAGGAACCCGAGGACGAA
 CTGCCCGAGGCGCCCCCAAGACCAGGGAGAGCGACCACTCCCGCTCCAGTCCCCACCGCGGGACCCAGCACCGAAGG
 GGCCGAGGGCCCGGAGGAGAAGAAGAAGGTGAAGATGCGCCGGAAGCGCGGCTTCCCAACAAGGAGCTGAGCAGGGAGC
 TGAGCAAGGAGCTCAACCACGAGATCCAGAGGACGGAGAACAGCCTGGCCAACGAGAACCAGCAGCCCATCAAGTCGGAG
 CCTGAGAGCGAGGGCGAGGAGCCCAAGCGCCCCCGGGCATCTGCGAGCGTCCCCACCGCTTCAGCAAGGGGCTCAACGG
 CACCCCCCGGAGCTGCGGCACCAGCTGGGGCCAGCCTGCGCAGCCCGCCCCGTGTCATCTCCCGGCCCCACCTCCG
 TGTCCCCGCCAAGTGTATCCAGATGGAGCGCATGTGATCCGGCCACCCCCATCAGCCCCCGCCTGACTCGCTACCC
 CTGGACGATGGGGCAGCCACGTCATGCACAGGGAGGTGTGGATGGCCGTCTTCAGCTACCTCAGCCACCAAGACCTGTG
 TGTGTGCATGCGGGTCTGCAAGGACCTGGAACCGTGGTGTGCGATAAGCGGTTGTGGACCCGCATTGACCTGAACCACT
 GCAAGTCTATCACACCCTGATGCTGAGTGGCATCATCCGGCGACAGCCCGTCTCCCTCGACCTCAGCTGGACCAATATC
 TCCAAGAAGCAGCTGAGCTGGCTCATCAACCGGTGCTGCGGCTCCGGGACTTGGTGCTGTGAGGCTGCTCATGGATCGC
 GGTCTCGGCCCTTTGAGCTCCAGTTGTCCGTGCTCCGGACCCTGGATGTCCAGTGGGTGGAGGGACTAAAGGATGCCC
 AGATGCGGGATCTCCTGTCCCCGCCACAGACAACAGGCCAGGTGAGATGGACAATCGGAGCAAGCTCCGGAACATCGTG
 GAGCTGCGCCTGGCAGGCCTGGACATCACAGATGCCTCCCTGCGGCTCATCATCCGCCACATGCCCCGTCTCTCCAAGCT
 CCACCTCAGTTACTGTAACCACGTCACCGACCAGTCTATCAACCTGCTCACTGCTGTTGGCACCACCACCGAGACTCCT
 TAACCGAGATCAACCTGTCTGACTGCAATAAGGTCACTGATCAGTGCCTGTCTTCTTCAAACGCTGTGGAAACATCTGT
 CATATTGACCTGAGGTACTGCAAGCAAGTCACCAAGGAAGGCTGTGAGCAGTTCATAGCCGAGATGTCTGTGAGTGTCCA
 GTTTGGGCAAGTAGAAGAAAACTCCTGCAAAAACTGAGTTAGTCCAAGGATAAGTATGTAAATACGGGGCGGGCTCTGG
 GAGGGGAGAGACTTTACAAAAATGAGGGCTTTTATTTTCCATTTGGAACGTGGGACAACAGACCACAACGCAATTCCATT
 TTGCAAGTCTTTCCAAGGGAGAAGCTGTTCAACCACCGTTTGGGGGATGAGTGAGCCGACACTTTCTTTTGGTCTTTCT
 GAATCGTAACTGCACTGCTTTCTGGACCATTCTAAGGCGGCCTTTACAAGAAGACATTCCTGTGCGAGAGGAGGGTGGA
 CTTCCGAGAAATCTCATACTGAAGCATGAGCTTAGGAGTTTCTGTTAGTGGTAGTGGTGTGTTGGACACTTCATTCCCTT
 GCAACACCGAGTTTTTGGGTGTTGACATAAAGTGGAACACACACCACATCTGCTGCCGTCTTGACACTTTTTTTTGTGTTG
 GTTGGTTTTGTACATCTTACATTATGCAGAACTATTTTTGTACAAATTGTTTAAAAGTTATTTATGCAAGTTTTGAATG
 CATACAGTGTGTTTTATTGTTTTGAGATTGCCAATTTCTCTGATTTCTTAAAGTAGGAGAGAATTTAACGTGTACTTCA
 TCGACACAACCCATCTACAAATGTGCCCAGATCTAACAAGTAGGCTAAGACCTTCCACTTAAAGCATGTTTAACTGGA
 AGTTGAGAGTCTGCTTTGTACCTCAAGAGTTACATGAGCATGTTGTGGATAAATGTAAATTATAGTCAAAGTAAGATACT
 CTGCCAAGTTTCTCTGTAGAGAATTCACCTTTCTCAAATTTTAAAATTTGACTTCAGCCTTTGCACTCAGGAGGTTCT
 GCTCCAGCATGAGCTCTTGTACTTACATAGATCTAATTTATACAGTGAGTCAAGACGTAGAATAAATGCTCCCACATAGC
 CTTTCTTTTGTCTTTGCTTCTCTCTCTGAAGTGTGAGTTGAGTTCTCATTTAGGTTTGTAAACATGGCTATTTCTAGTT
 GTAAAGTTCTGCATTTATAAGTGCCATTGTTGTAAGGTGGTGTTCCTAGACCTTCCCTGATGCGATTTTACCTTTGTTG
 AATTTGTATAAAACAATTGTACAAAAAAACCCTCTTGAACCTTTGAGGGTTTCTGTTCTAGGAGTGGACTAGAAGTTAA
 GCCCAGAGTCAGTAAACACTGTTTTGAAGTCCAAA

[SeqFeature(FeatureLocation(ExactPosition(0), ExactPosition(5315), strand=1),
 type='source'), SeqFeature(FeatureLocation(ExactPosition(0),

```

ExactPosition(5315), strand=1), type='gene'),
SeqFeature(FeatureLocation(ExactPosition(0), ExactPosition(238), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(76), ExactPosition(79),
strand=1), type='misc_feature'), SeqFeature(FeatureLocation(ExactPosition(112),
ExactPosition(4123), strand=1), type='CDS'),
SeqFeature(FeatureLocation(ExactPosition(280), ExactPosition(283), strand=1),
type='misc_feature'), SeqFeature(FeatureLocation(ExactPosition(1531),
ExactPosition(1534), strand=1), type='misc_feature'),
SeqFeature(FeatureLocation(ExactPosition(1540), ExactPosition(1543), strand=1),
type='misc_feature'), SeqFeature(FeatureLocation(ExactPosition(1588),
ExactPosition(1591), strand=1), type='misc_feature'),
SeqFeature(FeatureLocation(ExactPosition(1600), ExactPosition(1603), strand=1),
type='misc_feature'), SeqFeature(FeatureLocation(ExactPosition(2962),
ExactPosition(2965), strand=1), type='misc_feature'),
SeqFeature(FeatureLocation(ExactPosition(3034), ExactPosition(3037), strand=1),
type='misc_feature'), SeqFeature(FeatureLocation(ExactPosition(3046),
ExactPosition(3049), strand=1), type='misc_feature'),
SeqFeature(FeatureLocation(ExactPosition(3163), ExactPosition(3166), strand=1),
type='misc_feature'), SeqFeature(FeatureLocation(ExactPosition(3202),
ExactPosition(3205), strand=1), type='misc_feature'),
SeqFeature(FeatureLocation(ExactPosition(3388), ExactPosition(3472), strand=1),
type='misc_feature'), SeqFeature(FeatureLocation(ExactPosition(3508),
ExactPosition(3574), strand=1), type='misc_feature'),
SeqFeature(FeatureLocation(ExactPosition(3577), ExactPosition(3658), strand=1),
type='misc_feature'), SeqFeature(FeatureLocation(ExactPosition(3775),
ExactPosition(3853), strand=1), type='misc_feature'),
SeqFeature(FeatureLocation(ExactPosition(3853), ExactPosition(3943), strand=1),
type='misc_feature'), SeqFeature(FeatureLocation(ExactPosition(3943),
ExactPosition(4018), strand=1), type='misc_feature'),
SeqFeature(FeatureLocation(ExactPosition(4018), ExactPosition(4120), strand=1),
type='misc_feature'), SeqFeature(FeatureLocation(ExactPosition(238),
ExactPosition(383), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(383), ExactPosition(462), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(462), ExactPosition(509),
strand=1), type='exon'), SeqFeature(FeatureLocation(ExactPosition(509),
ExactPosition(688), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(688), ExactPosition(795), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(795), ExactPosition(889),
strand=1), type='exon'), SeqFeature(FeatureLocation(ExactPosition(889),
ExactPosition(1043), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(1043), ExactPosition(1159), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(1159),
ExactPosition(1286), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(1286), ExactPosition(1759), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(1759),
ExactPosition(1846), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(1846), ExactPosition(2071), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(2071),

```

```

ExactPosition(2215), strand=1), type='exon'),
SeqFeature(Location(ExactPosition(2215), ExactPosition(2302), strand=1),
type='exon'), SeqFeature(Location(ExactPosition(2302),
ExactPosition(2563), strand=1), type='exon'),
SeqFeature(Location(ExactPosition(2563), ExactPosition(2677), strand=1),
type='exon'), SeqFeature(Location(ExactPosition(2677),
ExactPosition(2716), strand=1), type='exon'),
SeqFeature(Location(ExactPosition(2716), ExactPosition(3396), strand=1),
type='exon'), SeqFeature(Location(ExactPosition(3396),
ExactPosition(3560), strand=1), type='exon'),
SeqFeature(Location(ExactPosition(3560), ExactPosition(3722), strand=1),
type='exon'), SeqFeature(Location(ExactPosition(3722),
ExactPosition(3941), strand=1), type='exon'),
SeqFeature(Location(ExactPosition(3941), ExactPosition(5315), strand=1),
type='exon'), SeqFeature(Location(ExactPosition(4633),
ExactPosition(4634), strand=1), type='polyA_site'),
SeqFeature(Location(ExactPosition(5290), ExactPosition(5296), strand=1),
type='regulatory'), SeqFeature(Location(ExactPosition(5314),
ExactPosition(5315), strand=1), type='polyA_site')]

```

NM_024626.4

Homo sapiens V-set domain containing T cell activation inhibitor 1 (VTCN1),
transcript variant 1, mRNA

```

GTGAGTCACCAAGGAAGGCAGCGCAGCTCCACTCAGCCAGTACCCAGATACGCTGGGAACCTTCCCCAGCCATGGCTTC
CCTGGGGCAGATCCTCTTCTGGAGCATAATTAGCATCATCATTATTCTGGCTGGAGCAATTGCACTCATCATTGGCTTTG
GTATTTCAAGGAGACACTCCATCACAGTCACTACTGTGCGCTCAGCTGGGAACATTGGGGAGGATGGAATCCTGAGCTGC
ACTTTTGAACCTGACATCAAACCTTTCTGATATCGTGATACAATGGCTGAAGGAAGGTGTTTTAGGCTTGGTCCATGAGTT
CAAAGAAGGCAAGATGAGCTGTGCGAGCAGGATGAAATGTTGAGGCGGACAGCAGTGTGCTGATCAAGTGATAG
TTGGCAATGCCCTCTTTGCGGCTGAAAAACGTGCAACTCACAGATGCTGGCACCTACAAATGTTATATCATCACTTCTAAA
GGCAAGGGGAATGCTAACCTTGAGTATAAACTGGAGCCTTCAGCATGCCGGAAGTGAATGTGGACTATAATGCCAGCTC
AGAGACCTTGCGGTGTGAGGCTCCCCGATGGTTCCTCCAGCCACAGTGGTCTGGGCATCCCAAGTTGACCAGGGAGCCA
ACTTCTCGGAAGTCTCCAATACCAGCTTTGAGCTGAACTCTGAGAATGTGACCATGAAGGTTGTGTCTGTGCTCTACAAT
GTTACGATCAACAACATACTCCTGTATGATTGAAAATGACATTGCCAAAGCAACAGGGGATATCAAAGTGACAGAATC
GGAGATCAAAAGGCGGAGTCACTACAGCTGCTAAACTCAAAGGCTTCTCTGTGTGTCTCTTTCTTTGCCATCAGCT
GGGCACTTCTGCCTCTCAGCCCTTACCTGATGCTAAAATAATGTGCCTCGGCCACAAAAAGCATGCAAAGTCATTGTTA
CAACAGGGATCTACAGAACTATTTACACCAGATATGACCTAGTTTTATATTCTGGGAGGAAATGAATTCATATCTAG
AAGTCTGGAGTGAGCAAAACAAGAGCAAGAAACAAAAAGGCCAAAAGCAGAAGGCTCCAATATGAACAAGATAAAATCTA
TCTTCAAAGACATATTAGAAGTTGGGAAAATAATTCATGTGAACTAGACAAGTGTGTTAAGAGTGATAAGTAAATGCAC
GTGGAGACAAGTGCATCCCCAGATCTCAGGACCTCCCCCTGCCTGTACCTGGGGAGTGAGAGGACAGGATAGTGCATG
TTCTTTGTCTCTGAATTTTTAGTTATATGTGCTGTAATGTTGCTCTGAGGAAGCCCTGGAAAGTCTATCCCAACATATC
CACATCTTATATTCCACAAATTAAGCTGTAGTATGTACCCTAAGACGCTGCTAATTGACTGCCACTTCGCAACTCAGGGG
CGGCTGCATTTTAGTAATGGGTCAAATGATTCACTTTTTATGATGCTTCCAAAGGTGCCTTGGCTTCTCTTCCCAACTGA
CAAATGCCAAAGTTGAGAAAAATGATCATAATTTTAGCATAAACAGAGCAGTCGGCGACACCGATTTTATAAATAAACTG
AGCACCTTCTTTTAAACAAACAAATGCGGGTTATTTCTCAGATGATGTTTCATCCGTGAATGGTCCAGGGAAGGACCTT
TCACCTTGTCTATATGGCATTATGTCATCACAGCTCTGAGGCTTCTCCTTTCCATCCTGCGTGGACAGCTAAGACCTCA
GTTTTCAATAGCATCTAGAGCAGTGGGACTCAGCTGGGGTGATTTTCGCCCCCATCTCCGGGGGAATGTCTGAAGACAAT
TTTGTTTACCTCAATGAGGGAGTGGAGGAGGATACAGTGCTACTACCAACTAGTGATAGAGGCCAGGGATGCTGCTCAA
CCTCCTACCATGTACAGGACGTCTCCCATTAACAACACCAATCCGAAGTGTCAACTGTGTGTCAGGGCTAAGAAACCTGT
GTTTTGAGTAGAAAAGGGCCTGGAAAGAGGGGAGCCAACAAATCTGTCTGCTTCCTCACATTAGTCATTGGCAAATAAGC

```

ATTCTGTCTCTTTGGCTGCTGCCTCAGCACAGAGAGCCAGAACTCTATCGGGCACCAGGATAACATCTCTCAGTGAACAG
 AGTTGACAAGGCTATGGGAAATGCCTGATGGGATTATCTTCAGCTTGTTGAGCTTCTAAGTTTCTTTCCCTTCATTCTA
 CCCTGCAAGCCAAGTTCTGTAAGAGAAATGCCTGAGTTCTAGCTCAGGTTTTCTTACTCTGAATTTAGATCTCCAGACCC
 TGCCTGGCCACAATTCAAATTAAGGCAACAAACATATACCTTCCATGAAGCACACACAGACTTTTGAAAGCAAGGACAAT
 GACTGCTTGAATTGAGGCCTTGAGGAATGAAGCTTTGAAGGAAAAGAATACTTTGTTTCCAGCCCCCTTCCCACACTCTT
 CATGTGTTAACCACTGCCTTCCCTGGACCTTGAGGCCACGGTGACTGTATTACATGTTGTTATAGAAAAGTATTTTAGAG
 TTCTGATCGTTCAAGAGAATGATTAAATATACATTTCCTACACCA

[SeqFeature(FeatureLocation(ExactPosition(0), ExactPosition(2605), strand=1),
 type='source'), SeqFeature(FeatureLocation(ExactPosition(0),
 ExactPosition(2605), strand=1), type='gene'),
 SeqFeature(FeatureLocation(ExactPosition(0), ExactPosition(104), strand=1),
 type='exon'), SeqFeature(FeatureLocation(ExactPosition(72), ExactPosition(921),
 strand=1), type='CDS'), SeqFeature(FeatureLocation(ExactPosition(72),
 ExactPosition(144), strand=1), type='sig_peptide'),
 SeqFeature(FeatureLocation(ExactPosition(717), ExactPosition(720), strand=1),
 type='misc_feature'), SeqFeature(FeatureLocation(ExactPosition(849),
 ExactPosition(912), strand=1), type='misc_feature'),
 SeqFeature(FeatureLocation(ExactPosition(104), ExactPosition(169), strand=1),
 type='exon'), SeqFeature(FeatureLocation(ExactPosition(169), ExactPosition(517),
 strand=1), type='exon'), SeqFeature(FeatureLocation(ExactPosition(517),
 ExactPosition(796), strand=1), type='exon'),
 SeqFeature(FeatureLocation(ExactPosition(796), ExactPosition(966), strand=1),
 type='exon'), SeqFeature(FeatureLocation(ExactPosition(966),
 ExactPosition(2605), strand=1), type='exon'),
 SeqFeature(FeatureLocation(ExactPosition(2581), ExactPosition(2587), strand=1),
 type='regulatory'), SeqFeature(FeatureLocation(ExactPosition(2604),
 ExactPosition(2605), strand=1), type='polyA_site')]

NM_001085357.2

Homo sapiens B and T lymphocyte associated (BTLA), transcript variant 2, mRNA
 AGTTATTTACAGATGCCACTGGGGTAGGTAAACTGACCCAACTCTGCAGCACTCAGAAGACGAAGCAAAGCCTTCTACT
 TGAGCAGTTTTTCCATCACTGATATGTGCAGGAAATGAAGACATTGCCTGCCATGCTTGGAAGTGGGAAATTATTTTGGG
 TCTTCTCTTAATCCCATATCTGGACATCTGGAACATCCATGGGAAAGAATCATGTGATGTACAGCTTTATATAAAGAGA
 CAATCTGAACACTCCATCTTAGCAGGAGATCCCTTTGAACTAGAATGCCCTGTGAAATACTGTGCTAACAGGCCTCATGT
 GACTTGGTGCAAGCTCAATGGAACAACATGTGTAACCTTGAAGATAGACAAACAAGTTGGAAGGAAGAGAAGAACATTT
 CATTTTTTATTCTACATTTTGAACAGTGCTTCCCTAATGACAATGGGTCATACCGCTGTTCTGCAATTTTTCAGTCTAAT
 CTCATTGAAAGCCACTCAACAACCTCTTTATGTGACAGGAAAGCAAAATGAACTCTCTGACACAGCAGGAAGGGAAATTAA
 CCTGGTTGATGCTCACCTTAAGAGTGAGCAAAACAGAAGCAAGCACCAGGCAAAATTCCCAAGTACTGCTATCAGAAACTG
 GAATTTATGATAATGACCCTGACCTTTGTTTCAGGATGCAGGAAGGGTCTGAAGTTTATTCTAATCCATGCCTGGAAGAA
 AACAAACCAGGCATTGTTTATGCTTCCCTGAACCATCTGTGTCATTGGACCGAACTCAAGACTGGCAAGAAATGTAAAAAGA
 AGCACCAACAGAATATGCATCCATATGTGTGAGGAGTTAAGTCTGTTTCTGACTCCAACAGGGACCATTGAATGATCAGC
 ATGTTGACATCATTGTCTGGGCTCAACAGGATGTCAAATAATATTTCTCAATTTGAGAATTTTTTACTTTAGAAATGTTCA
 TGTTAGTGCTTGGGTCTTAAGGGTCCATAGGATAAATGATTAAAAATTTCTCTCAGAACTTATTTGGGAGCTTTTTATAT
 TATAGCCTTGAATAACAAAATCTCTCCAAAACCTGGTTGACATCATGAGTAGCAGAATAGTAGAACGTTTAACTTAGCTA
 CATTTTACCCAATATACAAAACCTCGATCTTGCCCTTTGAAGCTATTGGAAGACTTGTAGGGAAAAGAGGTTTGTGTTACCT
 GCATCAGTTCACTACACACTCTTGAAAACAAAATGTCCCAATTTGACTAACCAACCATAAATACAGTAATGATTGTATAT
 TTCAAGTCAGTCTTCCAAAATAAGAAATTTTTGCTGTGTGTCAGTCTAAGAATGGTGTCTTAAATGCAAAGGAGAAATCA
 TTTTAGGCTTGATGTAAGAAAATGAAAATAATAAATGGTGCAATAAAAATATAGAATATACCAATTGGATATAGGGTAGA
 TGTTCCACATACCTGGCAAAACAAATGCTTATATCTACTCTGTTAGATTGATAAGCAAATATAGGTATTAATGGAGCAGTC

[illegible]

```
[SeqFeature(FeatureLocation(ExactPosition(0), ExactPosition(3126), strand=1),
type='source'), SeqFeature(FeatureLocation(ExactPosition(0),
ExactPosition(3126), strand=1), type='gene'),
SeqFeature(FeatureLocation(ExactPosition(0), ExactPosition(202), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(99), ExactPosition(102),
strand=1), type='misc_feature'), SeqFeature(FeatureLocation(ExactPosition(114),
ExactPosition(984), strand=1), type='CDS'),
SeqFeature(FeatureLocation(ExactPosition(114), ExactPosition(204), strand=1),
type='sig_peptide'), SeqFeature(FeatureLocation(ExactPosition(336),
ExactPosition(339), strand=1), type='misc_feature'),
SeqFeature(FeatureLocation(ExactPosition(393), ExactPosition(396), strand=1),
type='misc_feature'), SeqFeature(FeatureLocation(ExactPosition(441),
ExactPosition(444), strand=1), type='misc_feature'),
SeqFeature(FeatureLocation(ExactPosition(585), ExactPosition(648), strand=1),
type='misc_feature'), SeqFeature(FeatureLocation(ExactPosition(202),
ExactPosition(517), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(517), ExactPosition(661), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(661), ExactPosition(708),
```

```
strand=1), type='exon'), SeqFeature(FeatureLocation(ExactPosition(708),
ExactPosition(3126), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(1142), ExactPosition(1148), strand=1),
type='regulatory'), SeqFeature(FeatureLocation(ExactPosition(1165),
ExactPosition(1166), strand=1), type='polyA_site'),
SeqFeature(FeatureLocation(ExactPosition(3104), ExactPosition(3110), strand=1),
type='regulatory'), SeqFeature(FeatureLocation(ExactPosition(3125),
ExactPosition(3126), strand=1), type='polyA_site'))]
```

NM_001206925.2

Homo sapiens CD86 molecule (CD86), transcript variant 5, mRNA

```
AGTCATTGCCGAGGAAGGCTTGCACAGGGTGAAAAGCTTTGCTTCTCTGCTGCTGTAAACAGGGACTAGCACAGACACACGG
ATGAGTGGGGTCATTTCCAGATATTAGGTCACAGCAGAAGCAGCCAAAATGGATCCCCAGTGGTGCTGCTCCTCTGAAGA
TTCAAGCTTATTTCAATGAGACTGCAGACCTGCCATGCCAATTTGCAAACCTCTCAAAACCAAAGCCTGAGTGAGCTAGTA
GTATTTTGGCAGGACCAGGAAAACCTTGGTTCTGAATGAGGTATACTTAGGCAAAGAGAAAATTTGACAGTGTTTCATTCCAA
GTATATGGGCCGCACAAGTTTTGATTTCGGACAGTTGGACCCTGAGACTTCACAATCTTCAGATCAAGGACAAGGGCTGT
ATCAATGTATCATCCATCACAAAAGCCCACAGGAATGATTTCGCATCCACCAGATGAATTCTGAACTGTCAGTGCTTGCT
AACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAAATGTGTACATAAAATTTGACCTGCTCATCTATACA
CGGTTACCCAGAACCTAAGAAGATGAGTGTTTTGCTAAGAACCAAGAATTCAACTATCGAGTATGATGGTGTTATGCAGA
AATCTCAAGATAATGTACAGAACTGTACGACGTTTCCATCAGCTTGTCTGTTTCATTCCCTGATGTTACGAGCAATATG
ACCATCTTCTGTATTCTGGAAACTGACAAGACGGCGCTTTTATCTTCACCTTTCTCTATAGAGCTTGAGGACCCCTCAGCC
TCCCCCAGACCACATTCCCTTGATTACAGCTGTACTTCCAACAGTTATTATATGTGTGATGGTTTTCTGTCTAATTCTAT
GGAAATGGAAGAAGAAGAAGCGGCCTCGCAACTCTTATAAATGTGGAACCAACACAATGGAGAGGGAAGAGAGTGAAACAG
ACCAAGAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAGCCCAGCGTGTTTTTAAAAGTTCAAGACATCTTC
ATGCGACAAAAGTGATACATGTTTTTAATTAAGAGTAAAGCCCATAACAAGTATTCATTTTTTCTACCCTTTCTTTGT
AGTTCCTGGGCAACCTTTTTGATTTCTTCCAGAAGGCAAAAAGACATTACCATGAGTAATAAGGGGGCTCCAGGACTCCC
TCTAAGTGGAATAGCCTCCCTGTAACCTCCAGCTCTGCTCCGTATGCCAAGAGGAGACTTTAATTCTCTTACTGCTTCTTT
TCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCATGACCTGGAAATAAAATTTAGGACCAATACCTCCT
CCAGATCAGATTCTTCTCTTAATTTCATAGATTGTGTTTTTTTTTAAATAGACCTCTCAATTTCTGGAAAACCTGCCCTT
TATCTGCCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGTACCTGTGACTAAACAACCTACCTCCTCAGTCTGGG
TGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAAACATAGAGATCTATGTACTGTAATAGTGTGATTACTA
TGCTCTAGAGAAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCTGTGAGGGTCAGTAAGGAAAACGGTGGCCTAGGGT
ACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAGAGGCAGAGATAGAACCTGGAGCCACTTCTATCTG
GGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCCAACAAGCCATAGTGAGAGAACTGAATAAACAGGAAAATGCCAGA
GCTTGTGAACCCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCCTGGGGAAGCTGTGAAAGAACCAAAAGAGATCACA
ATACTCAAAAGAGAGAGAGAGAGAAAAAAGAGAGATCTTGATCCACAGAAATACATGAAATGTCTGGTCTGTCCACCCCA
TCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATGGACATAAGACAGACAGCAGTTTCCCTGGTGGTCA
GGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCCCTGGAAGCAGAGCTGGGGAGGGAGAGCCATCACCTT
GATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGCTGAGAGAGGAAGAGCTGCAACGGAATTAGGAAGA
CCAAGACACAGATCACCGGGGCTTACTTAGCCTACAGATGTCCTACGGGAACGTGGGCTGGCCCAGCATAGGGCTAGCA
AATTTGAGTTGGATGATTGTTTTTGCTCAAGGCAACCAGAGGAACTTGCATACAGAGACAGATATACTGGGAGAAATGA
CTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAGTCTCTGCCCAAACATAAAGAGAAGCTCTGGGGAGC
CTGAGCCACAAAAATGTTTCTTTATTTTATGTAAACCTCAAGGGTTATAGACTGCCATGCTAGACAAGCTTGCCATGT
AATATTTCCCATGTTTTTACCCTGCCCCTGCCTTGATTAGACTCCTAGCACCTGGCTAGTTTCTAACATGTTTTGTGCAGC
ACAGTTTTTAATAAATGCTTGTTACATTCA
```

```
[SeqFeature(FeatureLocation(ExactPosition(0), ExactPosition(2670), strand=1),
type='source'), SeqFeature(FeatureLocation(ExactPosition(0),
ExactPosition(2670), strand=1), type='gene'),
SeqFeature(FeatureLocation(ExactPosition(0), ExactPosition(142), strand=1),
```

```

type='exon'), SeqFeature(FeatureLocation(ExactPosition(81), ExactPosition(84),
strand=1), type='misc_feature'), SeqFeature(FeatureLocation(ExactPosition(142),
ExactPosition(478), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(324), ExactPosition(1068), strand=1),
type='CDS'), SeqFeature(FeatureLocation(ExactPosition(478), ExactPosition(781),
strand=1), type='exon'), SeqFeature(FeatureLocation(ExactPosition(781),
ExactPosition(925), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(925), ExactPosition(971), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(971),
ExactPosition(2670), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(1067), ExactPosition(1073), strand=1),
type='regulatory'), SeqFeature(FeatureLocation(ExactPosition(1084),
ExactPosition(1085), strand=1), type='polyA_site'),
SeqFeature(FeatureLocation(ExactPosition(1334), ExactPosition(1340), strand=1),
type='regulatory'), SeqFeature(FeatureLocation(ExactPosition(1362),
ExactPosition(1363), strand=1), type='polyA_site'),
SeqFeature(FeatureLocation(ExactPosition(2649), ExactPosition(2655), strand=1),
type='regulatory'), SeqFeature(FeatureLocation(ExactPosition(2669),
ExactPosition(2670), strand=1), type='polyA_site')]

```

NM_001287046.2

Homo sapiens SH3 domain containing GRB2 like, endophilin B2 (SH3GLB2),
transcript variant 3, mRNA

```

CTGCGCGCTCGGGCTGGCTCGGCGGCTCGGCGGGCGGGCAGGCGGGCAGGCCGGCAGGCGGGTGCGCGGAGGGCTGGTG
CCCCGCAGCAGGTGGGCGGGGTGCGGTTGGCGGCGGCGCTGGGCCGGGGGCTGCCGGCTGCGCTCGGGCCGTGCGCGGC
GGCCGTGCGGGCACGCCATGGACTTCAACATGAAGAAGCTGGCGTCGGACGCGGGCATCTTCTTCACCCGGGCGGTGCAG
TTCACGGAGGAGAAATTTGGCCAGGCTGAGAAGACTGAGCTTGATGCCCACCTTTGAAAACCTTCTGGCCCCGGGCAGACAG
CACCAAGAACTGGACAGAGAAGATCTTGAGGCAGACAGAGGTGCTGCTGCAGCCCAACCCAGTGCCCGAGTGGAGGAGT
TCCTGTATGAGAAGCTGGACAGGAAGGTCCCCTCAAGGGTCACCAACGGGGAGCTGCTGGCTCAGTACATGGCAGACGCG
GCCAGTGAGCTGGGGCCGACCACCCCTATGGGAAGACACTGATCAAGGTGGCAGAAGCTGAAAAGCAACTGGGAGCCGC
GGAGAGGGGATTTATCCACACGGCCTCCATCAGCTTCTCACACCCTTGCGCAACTTCTGGAGGGGGACTGGAAGACCA
TCTCGAAGGAGAGGCGGCTCCTCCAAAACCGCGTCTGGACTTGATGCCTGCAAAGCGAGGCTGAAGAAGGCCAAGGCT
GCAGAAGCCAAAGCCACGACGGTGCCTGACTTTCAGGAGACTAGACCTCGTAATTACATTCTCTCGGCCAGCGCCTCCGC
GCTCTGGAATGATGAAGTGACAAGGCCGAGCAGGAGCTCCGCGTGGCCCAGACAGAGTTTGACCGGCAAGCAGAAGTGA
CCCGTCTCTTGCTGGAGGGAATCAGTAGCACTCAGTGAACCACCTGCGCTGCCTCCACGAGTTCGTCAAGTCTCAGACA
ACCTACTACGCACAGTGCTACCGCCACATGCTGGACTTGCAGAAGCAGCTGGGCAGATTTCCCGGCACCTTCGTGGGCAC
CACAGAGCCCGCTCCCCACCCCTGAGCAGCACCTCACCCACCACTGCTGCGGCCACTATGCCTGTGGTGCCCTCTGTGG
CCAGCCTGGCCCTCCGGGGGAGGCCTCGCTCTGCCTGGAAGAGGTGGCCCCCCTGCCAGTGGGACCCGCAAAGCTCGG
GTGCTCTATGACTACGAGGCAGCCGACAGCAGTGAGCTGGCCCTGCTGGCTGATGAGCTCATCACTGTCTACAGCCTGCC
TGGCATGGACCCTGACTGGCTCATTGGCGAGAGAGGCAACAAGAAGGGCAAGGTCCCTGTACCTACTTGGAAGTGTCTCA
GCTAGCTCAAGCCAAGTCCAGCGGCCGAGTCTTCACTCTCCACACTCACTTTTATCTGGTGTTTTTACTTCTGCCTG
CGTTTGCTCTCTAGCCAATAAACCGTCCTTGTGTGCGAGTCACCTGGGCTCCTGTCAGGGCCTGGCCCTGAGGGTGGTAA
AGGGAAAGGTAGACTCACCTCTGCCCCACTCTTCCACAGAGTGAGCAGGGGCCCTGTGGCTGCCCCGGCCCCCAGCTCT
CTAGTTGGGAAGAAGTGACGCCCTCCCTGTCTTCTGCGGGGCTGTGCCTCTCAGAGGGCAGTGCTGTTCCCTGGACATGA
AGCCGCACAAGGAACGTTTTATTCTTAAGAAAAAGTTTCCTAAA

```

```

[SeqFeature(FeatureLocation(ExactPosition(0), ExactPosition(1724), strand=1),
type='source'), SeqFeature(FeatureLocation(ExactPosition(0),
ExactPosition(1724), strand=1), type='gene'),
SeqFeature(FeatureLocation(ExactPosition(0), ExactPosition(240), strand=1),

```

```

type='exon'), SeqFeature(FeatureLocation(ExactPosition(177),
ExactPosition(1365), strand=1), type='CDS'),
SeqFeature(FeatureLocation(ExactPosition(177), ExactPosition(258), strand=1),
type='misc_feature'), SeqFeature(FeatureLocation(ExactPosition(177),
ExactPosition(180), strand=1), type='misc_feature'),
SeqFeature(FeatureLocation(ExactPosition(204), ExactPosition(207), strand=1),
type='misc_feature'), SeqFeature(FeatureLocation(ExactPosition(1359),
ExactPosition(1362), strand=1), type='misc_feature'),
SeqFeature(FeatureLocation(ExactPosition(240), ExactPosition(382), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(382), ExactPosition(511),
strand=1), type='exon'), SeqFeature(FeatureLocation(ExactPosition(511),
ExactPosition(645), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(645), ExactPosition(738), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(738), ExactPosition(801),
strand=1), type='exon'), SeqFeature(FeatureLocation(ExactPosition(801),
ExactPosition(825), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(825), ExactPosition(915), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(915),
ExactPosition(1016), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(1016), ExactPosition(1257), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(1257),
ExactPosition(1365), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(1365), ExactPosition(1724), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(1456),
ExactPosition(1462), strand=1), type='regulatory'),
SeqFeature(FeatureLocation(ExactPosition(1477), ExactPosition(1478), strand=1),
type='polyA_site'), SeqFeature(FeatureLocation(ExactPosition(1706),
ExactPosition(1712), strand=1), type='regulatory'),
SeqFeature(FeatureLocation(ExactPosition(1723), ExactPosition(1724), strand=1),
type='polyA_site')]

```

NM_001243078.2

Homo sapiens CD28 molecule (CD28), transcript variant 3, mRNA

```

ACACTTCGGGTTCTCGGGGAGGAGGGGCTGGAACCCTAGCCCATCGTCAGGACAAAGATGCTCAGGCTGCTCTTGGCTC
TCAACTTATTCCTTCAATTCAAGTAACAGGGAAACACCTTTGTCCAAGTCCCCTATTCCCGGACCTTCTAAGCCCTT
TGGGTGCTGGTGGTGGTTGGTGGAGTCCTGGCTTGCTATAGCTTGCTAGTAACAGTGGCCTTTATTATTTTCTGGGTGAG
GAGTAAGAGGAGCAGGCTCCTGCACAGTGAATGACATGAACATGACTCCCCGCCGCCCGGGCCCCACCCGCAAGCATTACC
AGCCCTATGCCCCACCACGCGACTTCGCAGCCTATCGCTCCTGACACGGACGCCTATCCAGAAGCCAGCCGGCTGGCAGC
CCCCATCTGCTCAATATCACTGCTCTGGATAGGAAATGACCGCCATCTCCAGCCGCCACCTCAGGCCCTGTTGGGCCA
CCAATGCCAATTTTCTCGAGTGACTAGACCAAATATCAAGATCATTTTGAGACTCTGAAATGAAGTAAAGAGATTTC
TGTGACAGGCCAAGTCTTACAGTGCCATGGCCACATTCCAACCTACCATGTACTTAGTGACTTGACTGAGAAGTTAGGG
TAGAAAACAAAAAGGGAGTGATTCTGGGAGCCTCTTCCCTTTCTCACTCACCTGCACATCTCAGTCAAGCAAAGTGTGG
TATCCACAGACATTTTAGTTGCAGAAGAAAGGCTAGGAAATCATTCCTTTTGGTTAAATGGGTGTTTAAATCTTTTGGTTA
GTGGGTAAACGGGGTAAGTTAGAGTAGGGGAGGGATAGGAAGACATATTTAAAAAACCATTAACACTGTCTCCCACT
CATGAAATGAGCCACGTAGTTCTATTTAATGCTGTTTTCTTTAGTTTAGAAATACATAGACATTGTCTTTTATGAATT
CTGATCATATTTAGTCATTTTGACCAAATGAGGGATTTGGTCAAATGAGGGATTCCTCAAAGCAATATCAGGTAAACCA
AGTTGCTTTCTCACTCCCTGTGATGAGACTTCAGTGTTAATGTTTACAATATACTTTCGAAAGAATAAAATAGTTCTCC
TACATGAAGAAAGAAATATGTCAGGAAATAAGGTCACCTTTATGTCAAATATTATTGAGTACTATGGGACCTGGCGCAGTGG
CTCATGCTTGTAATCCCAGCACTTTGGGAGGCCGAGGTGGGCAGATCACTTGAGATCAGGACCAGCCTGGTCAAGATGGT

```

GAAACTCCGTCTGTACTAAAAATACAAAATTTAGCTTGGCCTGGTGGCAGGCACCTGTAATCCCAGCTGCCCAAGAGGCT
GAGGCATGAGAATCGCTTGAACCTGGCAGGCGGAGGTTGCAGTGAGCCGAGATAGTGCCACAGCTCTCCAGCCTGGGCGA
CAGAGTGAGACTCCATCTCAAACAACAACAACAACAACAACAACAACAACCACAAAATTATTTGAGTACTGTGAAG
GATTATTTGTCTAACAGTTCATTCCAATCAGACCAGGTAGGAGCTTTCCTGTTTCATATGTTTCAGGGTTGCACAGTTGG
TCTCTTTAATGTCCGTGTGGAGATCCAAAGTGGGTTGTGGAAAGAGCGTCCATAGGAGAAGTGAGAATACTGTGAAAAAG
GGATGTTAGCATTCAATAGAGTATGAGGATGAGTCCCAAGAAGGTTCTTTGGAAGGAGGACGAATAGAATGGAGTAATGA
AATTCTTGCCATGTGCTGAGGAGATAGCCAGCATTAGGTGACAATCTTCCAGAAGTGGTCAGGCAGAAGGTGCCCTGGTG
AGAGCTCCTTTACAGGGACTTTATGTGGTTTAGGGCTCAGAGCTCCAAACTCTGGGCTCAGCTGCTCCTGTACCTTGA
GGTCCATTACATGGGAAAGTATTTTGAATGTGTCTTTTGAAGAGAGCATCAGAGTTCTTAAGGGACTGGGTAAGGCCT
GACCCTGAAATGACCATGGATATTTTTCTACCTACAGTTTGAGTCAACTAGAATATGCCTGGGGACCTTGAAGAATGGCC
CTTCAGTGGCCCTCACCATTGTTCATGCTTCAGTTAATTCAGGTGTTGAAGGAGCTTAGGTTTTAGAGGCACGTAGACT
TGGTTCAAGTCTCGTTAGTAGTTGAATAGCCTCAGGCAAGTCACTGCCCACCTAAGATGATGGTTCTTCAACTATAAAAT
GGAGATAATGGTTACAAATGTCTCTTCCTATAGTATAATCTCCATAAGGGCATGGCCCAAGTCTGTCTTTGACTCTGCCT
ATCCCTGACATTTAGTAGCATGCCCCACATACAATGTTAGCTATTGGTATTATTGCCATATAGATAAATTATGTATAAAA
ATTAACTGGGCAATAGCCTAAGAAGGGGGGAATATTGTAACACAAATTTAAACCCACTACGCAGGGATGAGGTGCTATA
ATATGAGGACCTTTAACTTCCATCATTTTCTGTCTTCTGAAATAGTTTATCTTGAATGAAATATAAGGCACCTCCCA
CTTTTATGTATAGAAAGAGGTCTTTTAATTTTTTTTTTAATGTGAGAAGGAAGGGAGGAGTAGGAATCTTGAGATTCCAGA
TCGAAAATACTGTACTTTGGTTGATTTTTAAGTGGGCTTCCATTCCATGGATTTAATCAGTCCCAAGAAGATCAAACCTCA
GCAGTACTTGGGTGCTGAAGAACTGTTGGATTACCCTGGCACGTGTGCCACTTGCCAGCTTCTTGGGCACACAGAGTTC
TTCAATCCAAGTTATCAGATTGTATTTGAAAAATGACAGAGCTGGAGAGTTTTTTGAAATGGCAGTGGCAAATAAATAAAT
ACTTTTTTTTAAATGGAAGAGCTTGATCTATGGTAATAAATGATTTTGTCTTCTGACTGGAAAAATAGGCCTACTAAAGA
TGAATCACACTTGAGATGTTTCTTACTCACTCTGCACAGAAACAAAGAAGAAATGTTATACAGGGAAGTCCGTTTTCTACT
ATTAGTATGAACCAAGAAATGGTTCAAAAACAGTGGTAGGAGCAATGCTTTCATAGTTTCAGATATGGTAGTTATGAAGA
AAACAATGTCATTTGCTGCTATTATTGTAAGAGTCTTATAATTAATGGTACTCCTATAATTTTTGATTGTGAGCTCACCT
ATTTGGGTTAAGCATGCCAATTTAAAGAGACCAAGTGTATGTACATTATGTTCTACATATTCAGTGATAAAATTACTAAA
CTACTATATGTCTGCTTTAAATTTGTACTTTAATATTGTCTTTTGGTATTAAGAAAGATATGCTTTCAGAATAGATATGC
TTCGCTTTGGCAAGGAATTTGGATAGAACTTGCTATTTAAAGAGGTGTGGGGTAAATCCTTGATAAATCTCCAGTTTA
GCCTTTTTTTGAAAAAGCTAGACTTTCAAATACTAATTTCACTTCAAGCAGGGTACGTTTCTGGTTTGTGTGCTTGACTTC
AGTCACAATTTCTTATCAGACCAATGGCTGACCTCTTTGAGATGTGAGGCTAGGCTTACCTATGTGTTCTGTGTATGTG
AATGCTGAGAAGTTTGACAGAGATCCAACCTTCAGCCTTGACCCCATCAGTCCCTCGGGTAACTAACTGAGCCACCGGTC
CTCATGGCTATTTAATGAGGGTATTGATGGTTAAATGCATGTCTGATCCCTTATCCAGCCATTTGCACTGCCAGCTGG
GAACTATACCAGACCTGGATACTGATCCCAAAGTGTTAAATTCAACTACATGCTGGAGATTAGAGATGGTGCCAATAAAG
GACCCAGAACCAGGATCTTGATTGCTATAGACTTATTAATAATCCAGGTCAAAGAGAGTGACACACACTCTCTCAAGACC
TGGGGTGAGGGAGTCTGTGTTATCTGCAAGGCCATTTGAGGCTCAGAAAGTCTCTCTTCTCCTATAGATATATGCATACTT
TCTGACATATAGGAATGTATCAGGAATACTCAACCATCACAGGCATGTTCCCTACCTCAGGGCCTTTACATGTCTGTGTTA
CTCTGTCTAGAATGTCTTCTGTAGATGACCTGGCTTGCTCGTCCACCTTCAGGTCCTTGCTCAAGTGTATCTTCTCC
CCTAGTTAACTACCCACACCCCTGTCTGCTTTCCTTGCTTATTTTTCTCCATAGCATTTTACCATCTCTTACATTAGAC
ATTTTTCTTATTTATTTGTAGTTTATAAGCTTCATGAGGCAAGTAACCTTGTCTTGTCTTGTCTGTATCTCCAGTGCCC
AGAGCAGTGCCTGGTATATAATAAATATTTATTGACTGAGTGAA

[SeqFeature(FeatureLocation(ExactPosition(0), ExactPosition(4364), strand=1),
type='source'), SeqFeature(FeatureLocation(ExactPosition(0),
ExactPosition(4364), strand=1), type='gene'),
SeqFeature(FeatureLocation(ExactPosition(0), ExactPosition(110), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(37), ExactPosition(40),
strand=1), type='misc_feature'), SeqFeature(FeatureLocation(ExactPosition(58),
ExactPosition(364), strand=1), type='CDS'),
SeqFeature(FeatureLocation(ExactPosition(58), ExactPosition(112), strand=1),
type='sig_peptide'), SeqFeature(FeatureLocation(ExactPosition(112),

```

ExactPosition(361), strand=1), type='mat_peptide'),
SeqFeature(FeatureLocation(ExactPosition(110), ExactPosition(235), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(235),
ExactPosition(4364), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(3265), ExactPosition(3271), strand=1),
type='regulatory'), SeqFeature(FeatureLocation(ExactPosition(3283),
ExactPosition(3284), strand=1), type='polyA_site'),
SeqFeature(FeatureLocation(ExactPosition(3833), ExactPosition(3839), strand=1),
type='regulatory'), SeqFeature(FeatureLocation(ExactPosition(3854),
ExactPosition(3855), strand=1), type='polyA_site'),
SeqFeature(FeatureLocation(ExactPosition(4339), ExactPosition(4345), strand=1),
type='regulatory'), SeqFeature(FeatureLocation(ExactPosition(4363),
ExactPosition(4364), strand=1), type='polyA_site'])]

```

NM_001206924.2

Homo sapiens CD86 molecule (CD86), transcript variant 4, mRNA

```

AGTCATTGCCGAGGAAGGCTTGACAGGGTGAAAGCTTTGCTTCTCTGCTGCTGTAACAGGGACTAGCACAGACACACGG
ATGAGTGGGGTCATTTCCAGATATTAGGTCACAGCAGAAGCAGCCAAAATGGATCCCCAGTGCATATGGGACTGAGTAA
CATTCTCTTTGTGATGGCCTTCCTGCTCTCTGCTAACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAA
ATGTGTACATAAAATTTGACCTGCTCATCTATACACGGTTACCCAGAACCTAAGAAGATGAGTGTTCGTAAGAACCAAG
AATCAACTATCGAGTATGATGGTGTATGCAGAAATCTCAAGATAATGTCACAGAACTGTACGACGTTTCCATCAGCTT
GTCTGTTTCATTCCCTGATGTTACGAGCAATATGACCATCTTCTGTATTCTGGAACTGACAAGACGCGGCTTTTATCTT
CACCTTTCTCTATAGAGCTTGAGGACCCTCAGCCTCCCCCAGACCACATTCCTTGGATTACAGCTGTACTTCCAACAGTT
ATTATATGTGTGATGGTTTTCTGTCTAATTCTATGGAATGGAAGAAGAAGCGGCCTCGCAACTCTTATAAATGTGG
AACCAACACAATGGAGAGGGAAGAGAGTGAACAGACCAAGAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAG
CCCAGCGTGTTTTTTAAAGTTTCAAGACATCTTCATGCGACAAAAGTGATACATGTTTTTAATTAAGAGTAAAGCCCAT
ACAAGTATTCATTTTTTCTACCCTTTCCTTTGTAAGTTCCTGGGCAACCTTTTTGATTTCTTCCAGAAGGCAAAAAGACA
TTACCATGAGTAATAAGGGGGCTCCAGGACTCCCTCTAAGTGGAATAGCCTCCCTGTAACCTCCAGCTCTGCTCCGTATGC
CAAGAGGAGACTTTAATTCTCTTACTGCTTCTTTCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCAT
GACCTGGAAATAAAATTTAGGACCAATACCTCCTCCAGATCAGATTCTTCTCTTAATTTCATAGATTGTGTTTTTTTTT
AAATAGACCTCTCAATTTCTGGAAAAGTGCCTTTTATCTGCCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGT
ACCTGTGACTAAACAACCTACCTCCTCAGTCTGGGTGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAACA
TAGAGATCTATGTACTGTAATAGTGTGATTACTATGCTCTAGAGAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCT
GTCAGGGTCAGTAAGGAAAACGGTGGCCTAGGGTACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAG
AGGCAGAGATAGAACCTGGAGCCACTTCTATCTGGGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCAACAAGCCATA
GTGGAGAGAACTGAATAAACAGGAAAATGCCAGAGCTTGTGAACCCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCC
TGGGGAAGCTGTGAAAGAACCAAAAGAGATCACAAATACTCAAAAGAGAGAGAGAGAGAAAAAAGAGAGATCTTGATCCAC
AGAAATACATGAAATGTCTGGTCTGTCCACCCCATCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATG
GACATAAGACAGACAGCAGTTTCCCTGGTGGTCAGGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCCT
GGAAGCAGAGCTGGGAGGGAGAGCCATCACCTTGATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGC
TGAGAGAGGAAGAGCTGCAACGGAATTAGGAAGACCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCCTA
CGGGAACGTGGGCTGGCCCAGCATAGGGCTAGCAAATTTGAGTTGGATGATTGTTTTTGGCTCAAGGCAACCAGAGGAAAC
TTGCATACAGAGACAGATATACTGGGAGAAATGACTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAG
TCTCTGCCCCAACATAAAGAGAACTCTGGGGAGCCTGAGCCACAAAAATGTTCCCTTATTTTATGTAAACCCCTCAAGGGT
TATAGACTGCCATGCTAGACAAGCTTGTCCATGTAATATCCCATGTTTTTACCCTGCCCCTGCCTTGATTAGACTCCTA
GCACCTGGCTAGTTTCTAACATGTTTTGTGCAGCACAGTTTTTAATAAATGCTTGTTACATTCA

```

```

[SeqFeature(FeatureLocation(ExactPosition(0), ExactPosition(2384), strand=1),
type='source'), SeqFeature(FeatureLocation(ExactPosition(0),
ExactPosition(2384), strand=1), type='gene'),

```

```

SeqFeature(FeatureLocation(ExactPosition(0), ExactPosition(142), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(104), ExactPosition(107),
strand=1), type='misc_feature'), SeqFeature(FeatureLocation(ExactPosition(128),
ExactPosition(782), strand=1), type='CDS'),
SeqFeature(FeatureLocation(ExactPosition(128), ExactPosition(209), strand=1),
type='sig_peptide'), SeqFeature(FeatureLocation(ExactPosition(142),
ExactPosition(192), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(192), ExactPosition(495), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(495), ExactPosition(639),
strand=1), type='exon'), SeqFeature(FeatureLocation(ExactPosition(639),
ExactPosition(685), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(685), ExactPosition(2384), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(781), ExactPosition(787),
strand=1), type='regulatory'), SeqFeature(FeatureLocation(ExactPosition(798),
ExactPosition(799), strand=1), type='polyA_site'),
SeqFeature(FeatureLocation(ExactPosition(1048), ExactPosition(1054), strand=1),
type='regulatory'), SeqFeature(FeatureLocation(ExactPosition(1076),
ExactPosition(1077), strand=1), type='polyA_site'),
SeqFeature(FeatureLocation(ExactPosition(2363), ExactPosition(2369), strand=1),
type='regulatory'), SeqFeature(FeatureLocation(ExactPosition(2383),
ExactPosition(2384), strand=1), type='polyA_site')]

```

NM_176892.2

Homo sapiens CD86 molecule (CD86), transcript variant 3, mRNA

```

AGAAGTTATTTGGAACCAAGCAAGAGCACTGTCCCTGGCTGTGGTGTGTTTCTCTAGTCAGTTCCCCTTTCTGTATTG
AGTTCTACCGTCAGTCCTGGCATTATTTCTCTCTCTACAAGGAGCCTTAGGAGGTACGGGGAGCTCGAAATACTCCTTT
TGGTTTATTCTTACCACCTTGCTTCTGTGTTCCCTTGGAATGCTGCTGTGCTTATGCATCTGGTCTCTTTTTGGAGCTAC
AGTGGACAGGCATTTGTGACAGCACTATGGGACTGAGTAACATTCTCTTTGTGATGGCCTTCCTGCTCTCTGGTGTGCT
CCTCTGAAGATTCAAGCTTATTTCAATGAGACTGCAGACCTGCCATGCCAATTTGCAAACTCTCAAAACCAAGCCTGAG
TGAGCTAGTAGTATTTTGGCAGGACCAGGAAAACTTGTTCTGAATGAGGTATACCTAGGCAAAGAGAAATTTGACAGTG
TTCATTCCAAGTATATGGGCCGCACAAGTTTTGATTGCGACAGTTGGACCCTGAGACTTCACAATCTTCAGATCAAGGAC
AAGGGCTTGTATCAATGTATCATCCATCACAAAAAGCCACAGGAATGATTGCGATCCACCAGATGAATTCTGAACTGTC
AGTGCTTGCTAACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAAAATGTGTACATAAATTTGACCTGCT
CATCTATACACGGTTACCCAGAACCTAAGAAGATGAGTGTTTTGCTAAGAACCAAGAATTCAACTATCGAGTATGATGGT
GTTATGCAGAAATCTCAAGATAATGTACAGAACTGTACGACGTTTCCATCAGCTTGTCTGTTTCATTCCCTGATGTTAC
GAGCAATATGACCATCTTCTGTATTCTGGAACCTGACAAGACGCGGCTTTTATCTTCACCTTTCTCTATAGGAACCAACA
CAATGGAGAGGGAAGAGAGTGAACAGACCAAGAAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAGCCCAGCGT
GTTTTTAAAGTTCTGAAGACATCTTCATGCGACAAAAGTGATACATGTTTTTAATTAAGAGTAAAGCCCATACAAGTAT
TCATTTTTTCTACCTTTCTTTTGTAAGTTCCCTGGGCAACCTTTTTGATTTCTTCCAGAAGGCAAAAAGACATTACCATG
AGTAATAAGGGGGCTCCAGGACTCCCTCTAAGTGGAATAGCCTCCCTGTAACCTCCAGCTCTGCTCCGTATGCCAAGAGGA
GACTTTAATTCTCTTACTGCTTCTTTTCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCATGACCTGGA
AATAAAATTTAGGACCAATACCTCCTCCAGATCAGATTCTTCTCTTAATTTTCATAGATTGTGTTTTTTTTTAAATAGAC
CTCTCAATTTCTGAAAACTGCCTTTTATCTGCCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGTACCTGTGA
CTAAACAACTACCTCCTCAGTCTGGGTGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAAACATAGAGATC
TATGTACTGTAATAGTGTGATTACTATGCTCTAGAGAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCTGTCAGGGT
CAGTAAGGAAAACGGTGGCCTAGGGTACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAGAGGCAGAG
ATAGAACCTGGAGCCACTTCTATCTGGGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCAACAAGCCATAGTGAGAG
AACTGAATAAACAGGAAATGCCAGAGCTTGTGAACCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCCTGGGGAAG
CTGTGAAAGAACCAAAAGAGATCACAACTCTCAAAAGAGAGAGAGAGAGAAAAAGAGAGATCTTGATCCACAGAAATAC

```

ATGAAATGTCTGGTCTGTCCACCCCATCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATGGACATAAG
ACAGACAGCAGTTTCCCTGGTGGTCAGGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCCCTGGAAGCAG
AGCTGGGGAGGGAGAGCCATCACCTTGATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGCTGAGAGAG
GAAGAGCTGCAACGGAATTAGGAAGACCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCCTACGGGAACG
TGGGCTGGCCCAGCATAGGGCTAGCAAATTTGAGTTGGATGATTGTTTTTGCTCAAGGCAACCAGAGGAAACTTGCATAC
AGAGACAGATATACTGGGAGAAATGACTTTGAAAACCTGGCTCTAAGGTGGGATCACTAAGGGATGGGGCAGTCTCTGCC
CAAACATAAAGAGAACTCTGGGGAGCCTGAGCCACAAAAATGTTCTTTATTTTATGTAAACCCTCAAGGGTTATAGACT
GCCATGCTAGACAAGCTTGTCCATGTAATATTTCCCATGTTTTTACCCTGCCCCTGCCTTGATTAGACTCCTAGCACCTGG
CTAGTTTCTAACATGTTTTGTGCAGCACAGTTTTTAATAAATGCTTGTTACATTCA

[SeqFeature(FeatureLocation(ExactPosition(0), ExactPosition(2696), strand=1),
type='source'), SeqFeature(FeatureLocation(ExactPosition(0),
ExactPosition(2696), strand=1), type='gene'),
SeqFeature(FeatureLocation(ExactPosition(0), ExactPosition(262), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(262), ExactPosition(312),
strand=1), type='exon'), SeqFeature(FeatureLocation(ExactPosition(266),
ExactPosition(1094), strand=1), type='CDS'),
SeqFeature(FeatureLocation(ExactPosition(266), ExactPosition(338), strand=1),
type='sig_peptide'), SeqFeature(FeatureLocation(ExactPosition(312),
ExactPosition(648), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(648), ExactPosition(951), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(951), ExactPosition(997),
strand=1), type='exon'), SeqFeature(FeatureLocation(ExactPosition(997),
ExactPosition(2696), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(1093), ExactPosition(1099), strand=1),
type='regulatory'), SeqFeature(FeatureLocation(ExactPosition(1110),
ExactPosition(1111), strand=1), type='polyA_site'),
SeqFeature(FeatureLocation(ExactPosition(1360), ExactPosition(1366), strand=1),
type='regulatory'), SeqFeature(FeatureLocation(ExactPosition(1388),
ExactPosition(1389), strand=1), type='polyA_site'),
SeqFeature(FeatureLocation(ExactPosition(2675), ExactPosition(2681), strand=1),
type='regulatory'), SeqFeature(FeatureLocation(ExactPosition(2695),
ExactPosition(2696), strand=1), type='polyA_site'))]

NM_006889.5

Homo sapiens CD86 molecule (CD86), transcript variant 2, mRNA

AGAAGTTATTTGGAACCAAGCAAGAGCACTGTCCCTGGCTGTGGTGTGTTTCTCTAGTCAGTTCCTTTCTGTATTG
AGTTCTACCGTCAGTCCTGGCATTATTTCTCTCTCTACAAGGAGCCTTAGGAGGTACGGGGAGCTCGCAAATACTCCTTT
TGGTTTATTCTTACCACCTTGCTTCTGTGTTCTTGGGAATGCTGCTGTGCTTATGCATCTGGTCTCTTTTTGGAGCTAC
AGTGACAGGCATTTGTGACAGCACTATGGGACTGAGTAACATTCTCTTTGTGATGGCCTTCTGCTCTCTGGTGCTGCT
CCTCTGAAGATTCAAGCTTATTTCAATGAGACTGCAGACCTGCCATGCCAATTTGCAAACCTCTCAAACCAAAGCCTGAG
TGAGCTAGTAGTATTTTGGCAGGACCAGGAAAACTTGGTTCTGAATGAGGTATACTTAGGCAAAGAGAAATTTGACAGTG
TTCATTCCAAGTATATGGGCCGCACAAGTTTTGATTTCGGACAGTTGGACCCTGAGACTTCACAATCTTCAGATCAAGGAC
AAGGGCTTGTATCAATGTATCATCCATCACAAAAAGCCACAGGAATGATTTCGCATCCACCAGATGAATTCTGAACTGTC
AGTGCTTGCTAACTTCAGTCAACCTGAAATAGTACCAATTTCTAATATAACAGAAAAATGTGTACATAAATTTGACCTGCT
CATCTATACACGGTTACCCAGAACCTAAGAAGATGAGTGTTTTGCTAAGAACCAAGAATTCAACTATCGAGTATGATGGT
GTTATGCAGAAATCTCAAGATAATGTACAGAACTGTACGACGTTTTCCATCAGCTTGTCTGTTTCATTCCCTGATGTTAC
GAGCAATATGACCATCTTCTGTATTCTGGAACCTGACAAGACGGGCTTTTATCTTCACCTTTCTCTATAGAGCTTGAGG
ACCCTCAGCCTCCCCAGACCACATTCCCTGGATTACAGCTGTACTTCCAACAGTTATTATATGTGTGATGTTTTCTGT
CTAATTCTATGGAAATGGAAGAAGAAGAAGCGGCCTCGCAACTCTTATAAATGTGGAACCAACACAATGGAGAGGGAAGA

GAGTGAACAGACCAAGAAAAGAGAAAAAATCCATATACCTGAAAGATCTGATGAAGCCCAGCGTGTTTTTAAAAAGTTCTGA
AGACATCTTCATGCGACAAAAGTGATACATGTTTTTAATTAAGAGTAAAGCCCATACAAGTATTCATTTTTTCTACCCCT
TTCCTTTGTAAAGTTCCTGGGCAACCTTTTTGATTTCCTCCAGAAGGCAAAAAGACATTACCATGAGTAATAAGGGGGCTC
CAGGACTCCCTCTAAGTGGAATAGCCTCCCTGTAACCTCAGCTCTGCTCCGTATGCCAAGAGGAGACTTTAATTCTCTTA
CTGCTTCTTTTCACTTCAGAGCACACTTATGGGCCAAGCCCAGCTTAATGGCTCATGACCTGGAAATAAAATTTAGGACC
AATACCTCCTCGAGATCAGATTCTTCTCTTAATTTTCATAGATTGTGTTTTTTTTTTTAAATAGACCTCTCAATTTCTGGAA
AACTGCCTTTTATCTGCCCAGAATTCTAAGCTGGTGCCCCACTGAATTTTGTGTGTACCTGTGACTAAACAACCTACCTCC
TCAGTCTGGGTGGGACTTATGTATTTATGACCTTATAGTGTTAATATCTTGAAACATAGAGATCTATGTACTGTAATAGT
GTGATTACTATGCTCTAGAGAAAAGTCTACCCCTGCTAAGGAGTTCTCATCCCTCTGTCAGGGTCAGTAAGGAAAACGGT
GGCCTAGGGTACAGGCAACAATGAGCAGACCAACCTAAATTTGGGGAAATTAGGAGAGGCAGAGATAGAACCTGGAGCCA
CTTCTATCTGGGCTGTTGCTAATATTGAGGAGGCTTGCCCCACCCAACAAGCCATAGTGAGAGAACTGAATAAACAGGA
AAATGCCAGAGCTTGTGAACCCTGTTTCTCTTGAAGAACTGACTAGTGAGATGGCCTGGGGAAGCTGTGAAAGAACCAAAA
AGAGATCACAATACTCAAAAAGAGAGAGAGAGAGAAAAAAGAGAGATCTTGATCCACAGAAATACATGAAATGTCTGGTCT
GTCCACCCCATCAACAAGTCTTGAAACAAGCAACAGATGGATAGTCTGTCCAAATGGACATAAGACAGACAGCAGTTTCC
CTGGTGGTCAGGGAGGGGTTTTGGTGATACCCAAGTTATTGGGATGTCATCTTCTGGAAGCAGAGCTGGGGAGGGAGAG
CCATCACCTTGATAATGGGATGAATGGAAGGAGGCTTAGGACTTTCCACTCCTGGCTGAGAGAGGAAGAGCTGCAACGGA
ATTAGGAAGACCAAGACACAGATCACCCGGGGCTTACTTAGCCTACAGATGTCCTACGGGAACGTGGGCTGGCCCAGCAT
AGGGCTAGCAAATTTGAGTTGGATGATTGTTTTTGTCTCAAGGCAACCAGAGGAACTTGCATACAGAGACAGATATACTG
GGAGAAATGACTTTGAAAACCTGGCTCTAAGTGGGATCACTAAGGGATGGGGCAGTCTCTGCCCCAACATAAAGAGAAC
TCTGGGGAGCCTGAGCCACAAAAATGTTCCCTTATTTTATGTAAACCCTCAAGGGTTATAGACTGCCATGCTAGACAAGC
TTGTCCATGTAATATTTCCATGTTTTTACCCTGCCCCTGCCTTGATTAGACTCCTAGCACCTGGCTAGTTTCTAACATGT
TTTGTGCAGCACAGTTTTTTAATAAATGCTTGTTACATTCA

[SeqFeature(FeatureLocation(ExactPosition(0), ExactPosition(2840), strand=1),
type='source'), SeqFeature(FeatureLocation(ExactPosition(0),
ExactPosition(2840), strand=1), type='gene'),
SeqFeature(FeatureLocation(ExactPosition(0), ExactPosition(262), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(262), ExactPosition(312),
strand=1), type='exon'), SeqFeature(FeatureLocation(ExactPosition(266),
ExactPosition(1238), strand=1), type='CDS'),
SeqFeature(FeatureLocation(ExactPosition(266), ExactPosition(338), strand=1),
type='sig_peptide'), SeqFeature(FeatureLocation(ExactPosition(312),
ExactPosition(648), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(648), ExactPosition(951), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(951),
ExactPosition(1095), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(1095), ExactPosition(1141), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(1141),
ExactPosition(2840), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(1237), ExactPosition(1243), strand=1),
type='regulatory'), SeqFeature(FeatureLocation(ExactPosition(1254),
ExactPosition(1255), strand=1), type='polyA_site'),
SeqFeature(FeatureLocation(ExactPosition(1504), ExactPosition(1510), strand=1),
type='regulatory'), SeqFeature(FeatureLocation(ExactPosition(1532),
ExactPosition(1533), strand=1), type='polyA_site'),
SeqFeature(FeatureLocation(ExactPosition(2819), ExactPosition(2825), strand=1),
type='regulatory'), SeqFeature(FeatureLocation(ExactPosition(2839),
ExactPosition(2840), strand=1), type='polyA_site')]

NM_001287045.2

Homo sapiens SH3 domain containing GRB2 like, endophilin B2 (SH3GLB2),
transcript variant 1, mRNA

CTGCGCGCTCGGGCTGGCTCGGCGGCTGCGGCGGGCGGGCAGGCGGGCAGGCCGGCAGGCGGGTGCGCGGAGGGCTGGTG
CCCCGCAGCAGGTGGGCGGGGTGCGGTTGGCGGCGGCGGCTGGGCCGGGGGCTGCCGGCTGCGCTCGGGCCGTGCGCGGC
GGCCGTGCGGGCACGCCATGGACTTCAACATGAAGAAGCTGGCGTCGGACGCGGGCATCTTCTTCACCCGGGCGGTGCAG
TTCACGGAGGAGAAATTTGGCCAGGCTGAGAAGACTGAGCTTGATGCCCACTTTGAAAACCTTCTGGCCCCGGGCAGACAG
CACCAAGAACTGGACAGAGAAGATCTTGAGGCAGACAGAGGTGCTGCTGCAGCCCAACCCAGTGCCCGAGTGAGGAGT
TCCTGTATGAGAAGCTGGACAGGAAGGTCCCCCTCAAGGGTCACCAACGGGGAGCTGCTGGCTCAGTACATGGCAGACGCG
GCCAGTGAGCTGGGGCCGACCACCCCTATGGGAAGACACTGATCAAGGTGGCAGAAGCTGAAAAGCAACTGGGAGCCGC
GGAGAGGGATTTTATCCACACGGCCTCCATCAGCTTCTCTCACACCCTTGCGCAACTTCTTGAGGGGGACTGGAAGACCA
TCTCGAAGGAGAGGCGGCTCCTCCAAAACCGCGCTGCTGGACTTGGATGCCTGCAAAGCGAGGCTGAAGAAGGCCAAGGCT
GCAGAAGCCAAAGCCACGTGTGAGGGAGATACGGTGCTGACTTTCAGGAGACTAGACCTCGTAATTACATTCTCTCGGC
CAGCGCCTCCGCGCTCTGGAATGATGAAGTGGACAAGGCCGAGCAGGAGCTCCGCGTGGCCCAGACAGAGTTTGACCCGC
AAGCAGAAGTGACCCGTCTCTTGCTGGAGGGAATCAGTAGCACTCACGTGAACCACCTGCGCTGCCTCCACGAGTTCGTC
AAGTCTCAGACAACTACTACGCACAGTGCTACCGCCACATGCTGGACTTGCAGAAGCAGCTGGGCAGCTCCCAGGTGTC
CATATTTCCCGGCACCTTCGTGGGCACCACAGAGCCCGCTCCCCACCCCTGAGCAGCACCTCACCCACCACTGCTGCGG
CCACTATGCCTGTGGTGCCCTCTGTGGCCAGCCTGGCCCCCTCCGGGGGAGGCCTCGCTCTGCCTGGAAGAGGTGGCCCCC
CCTGCCAGTGGGACCCGCAAAGCTCGGGTGCTCTATGACTACGAGGCAGCCGACAGCAGTGAGCTGGCCCTGCTGGCTGA
TGAGCTCATCACTGTCTACAGCCTGCCTGGCATGGAACCTGACTGGCTCATTGGCGAGAGAGGCAACAAGAAGGGCAAGG
TCCCTGTCACTACTTGGAAGTGTCTAGCTAGGCAGGTGCCCCCATCCCCCGCATTCTGGCCTAGGCAGGAGAGGATG
GGCGCAGCCCTGCCACTTAACTTGTTTGTGGTGACACAGTTGTTTCAAGTGGGGAGAATTCACCCCATTTCTGTCCCTGC
CCCTAGTCACCTAGCTGTGAGGGTGCTGAGGCTGAATGGCTCCACCCCTCCCCAGCCCTGCTTCTGACCTGTGGCTCT
GGAGCCCTGCCCCTGCCTGCATCCCCGAGCACCCACCCCTCCAGGCTCCACTAAGGAGGGAGGGGCTGTCTGCAGCAGC
TGCACTCAGCACCTAGGCCAGGTGGGGCCGCCGAGATGGGCTCAGGAAGCCCCAGGTGCACTCAGCGAGAGCCCTGCC
TTTCAGTTGCCAAAAGCTGCATCAGGGGAATGCGGCAAGGCACACAGGGCTCTGGCAGCCCTGGGGACTGGGCGTGCC
CCTGGGAGGGGAGAGCCTGGCCAGGGCTGGTGTGGGGCCGGAGCAGCATCTTCCGGTGCTATCCTCCCCTCCCACCCCT
CACAGCTCAAGCCAAGTCCAGCGGCCGAGTCTTCACTCTCCACACTCACTTTTATCTGGTGTTTTTACTTCTGCCTG
CGTTTGCTCTCTAGCCAATAAACCGTCCTTGTGTGCGAGTCACCTGGGCTCCTGTCAAGGCCTGGCCCTGAGGGTGGA
AGGGAAGGTAGACTCACCCCTCTGCCCCACTCTTCCACAGAGTGAGCAGGGGCCCTGTGGCTGCCCCGGCCCCCAGCTCT
CTAGTTGGGAAGAAGTGCAGCCCTCCCTGTCTTCTGCGGGGCTGTGCCTCTCAGAGGGCAGTGCTGTTCTTGACATGA
AGCCGCACAAGGAACGTTTTTATCCTAAGAAAAAGTTTCTAAATTTGGATTGTGGAGCGGACTGTAGAATGCGTCTGAC
AGTTCAAGTCAAGCAAGAAGTGGGTAGCGGTGAGTGTCTGTCAGGTGCGGCGTTTCAACCAGCATGTCCCCCGTG
CCATGGGTTCTCATGCCGTCTCAGTGTCCACATTTACAGATGAGATCAGCAAGACAGTCAGCTCCTCAAGGGACCACA
GTTGGCAAGTGCCAAGCAGGGACTGAAGCCAGGCAGCCTGATTCTAGAAACCCTAAGTGATGTCTGTGTTTTAGATGG
CCCCTAGCAGGACCTAGCATTCTGACTTCAGTCTGAGAAGGCCAACAGCCAGTAGGCCCACTGTTGGGGCTTCTGAAG
AGGGGATCGGGGATGACGGGGGCACGGGGCTATAAATAGGAAGGCACAGAGCTTCAAGAAAGGCTCACCCAGGGATGAG
CTCAGCCCACTGGGCCAATGAAAGCAGGGTCAAGGACAGGACCAGCGCAGGCCAAGGAAGGGAATATCTGACAGCGCCCA
CCCAGCCAAACCCTCAGCCCAAGGACAGGAATGAGGAGATGCTGGTGAAGTACCATCCATCAGTACCTGCCTTCCCCCG
AGGCTGCAGCCCCACTCCCAGGCGCCTGGCCAGGGGAGTTTCTAGGTTCTGAGAGCCACGTTGTCTATCCCTGGGCTTTG
AAGTTAAACATCACACAGCTGTCTATAACAAGATTTTAATATCTGTATAAATAGACCACAGAATTACCAAACTGCAAAA

[SeqFeature (FeatureLocation (ExactPosition (0), ExactPosition (3040), strand=1),
type='source'), SeqFeature (FeatureLocation (ExactPosition (0),
ExactPosition (3040), strand=1), type='gene'),
SeqFeature (FeatureLocation (ExactPosition (0), ExactPosition (240), strand=1),
type='exon'), SeqFeature (FeatureLocation (ExactPosition (177),
ExactPosition (1392), strand=1), type='CDS'),
SeqFeature (FeatureLocation (ExactPosition (240), ExactPosition (382), strand=1),
type='exon'), SeqFeature (FeatureLocation (ExactPosition (382), ExactPosition (511),

```

strand=1), type='exon'), SeqFeature(FeatureLocation(ExactPosition(511),
ExactPosition(645), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(645), ExactPosition(738), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(738), ExactPosition(750),
strand=1), type='exon'), SeqFeature(FeatureLocation(ExactPosition(750),
ExactPosition(813), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(813), ExactPosition(837), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(837), ExactPosition(927),
strand=1), type='exon'), SeqFeature(FeatureLocation(ExactPosition(927),
ExactPosition(1028), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(1028), ExactPosition(1043), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(1043),
ExactPosition(1284), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(1284), ExactPosition(3040), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(2016),
ExactPosition(2022), strand=1), type='regulatory'),
SeqFeature(FeatureLocation(ExactPosition(2037), ExactPosition(2038), strand=1),
type='polyA_site'), SeqFeature(FeatureLocation(ExactPosition(2266),
ExactPosition(2272), strand=1), type='regulatory'),
SeqFeature(FeatureLocation(ExactPosition(2283), ExactPosition(2284), strand=1),
type='polyA_site'), SeqFeature(FeatureLocation(ExactPosition(2987),
ExactPosition(2993), strand=1), type='regulatory'),
SeqFeature(FeatureLocation(ExactPosition(3010), ExactPosition(3016), strand=1),
type='regulatory'), SeqFeature(FeatureLocation(ExactPosition(3016),
ExactPosition(3017), strand=1), type='polyA_site'),
SeqFeature(FeatureLocation(ExactPosition(3039), ExactPosition(3040), strand=1),
type='polyA_site')]

```

NM_020145.4

Homo sapiens SH3 domain containing GRB2 like, endophilin B2 (SH3GLB2),
transcript variant 2, mRNA

```

CTGCGCGCTCGGGCTGGCTCGGCGGCTCGGCGGGCGGGCAGGCGGGCAGGCCGGCAGGCGGGTGCGCGGAGGGCTGGTG
CCCCGCAGCAGGTGGGCGGGGTGCGGTTGGCGGCGGCGGCTGGGCCGGGGGCTGCCGGCTGCGCTCGGGCCGTGCGCGGC
GGCCGTGCGGGCACGCCATGGACTTCAACATGAAGAAGCTGGCGTCGGACGCGGGCATCTTCTTACCCGGGCGGTGCAG
TTCACGGAGGAGAAATTTGGCCAGGCTGAGAAGACTGAGCTTGATGCCCACCTTGAAAACCTTCTGGCCCCGGGCAGACAG
CACCAAGAACTGGACAGAGAAGATCTTGAGGCAGACAGAGGTGCTGCTGCAGCCCAACCCAGTGCCCGAGTGGAGGAGT
TCCTGTATGAGAAGCTGGACAGGAAGGTCCCCCAAGGGTCACCAACGGGGAGCTGCTGGCTCAGTACATGGCAGACGCG
GCCAGTGAGCTGGGGCCGACACCCCTATGGGAAGACACTGATCAAGGTGGCAGAAGCTGAAAAGCAACTGGGAGCCGC
GGAGAGGGATTTATCCACACGGCCTCCATCAGTTCCTCACACCCTTGCGCAACTTCCTGGAGGGGGACTGGAAGACCA
TCTCGAAGGAGAGGCGGCTCCTCCAAAACCGCGTCTGGAATTGGATGCCCTGCAAAGCGAGGCTGAAGAAGGCCAAGGCT
GCAGAAGCCAAAGCCACGACGGTGCCTGACTTTCAGGAGACTAGACCTCGTAATTACATTCTCTCGGCCAGCGCCTCCGC
GCTCTGGAATGATGAAGTGACAAGGCCGAGCAGGAGCTCCGCGTGCCCGACAGAGTTTGACCGGCAAGCAGAAGTGA
CCCGTCTCTTGCTGGAGGGAATCAGTAGCACTCACGTGAACCACCTGCGCTGCCTCCACGAGTTCGTCAAGTCTCAGACA
ACCTACTACGCACAGTGCTACCGCCACATGCTGGACTTGCAGAAGCAGCTGGGCAGATTTCCCGGCACCTTCGTGGGCAC
CACAGAGCCCGCTCCCCACCCCTGAGCAGCACCTCACCCACCACTGCTGCGGCCACTATGCCTGTGGTGCCCTCTGTGG
CCAGCCTGGCCCTCCGGGGGAGGCCTCGCTCTGCCTGGAAGAGGTGGCCCCCTGCCAGTGGGACCCGCAAAGCTCGG
GTGCTCTATGACTACGAGGCAGCCGACAGCAGTGAGCTGGCCCTGCTGGCTGATGAGCTCATCACTGTCTACAGCCTGCC
TGGCATGGACCCTGACTGGCTCATTGGCGAGAGAGGCAACAAGAAGGGCAAGTCCCTGTACCTACTTGGAAGTCTCA
GCTAGGCAGGTGCCCCCATCCCCCGCATTTCTGGCCTAGGCAGGAGAGGATGGGCGCAGCCCTGCCACTTAACTTGTTT

```

GTTGGTGACACAGTTGTTTCAGAGTGGGGAGAATTACCCCCATTCTGTCCCTGCCCCTAGTCACCTAGCTGTGAGGGTGCC
 TGAGGCTGAATGGCTCCACCCCTCCCCAGCCCTGCTTCTGACCTGTGGCTCTGGAGCCCCTGCCCCTGCCTGCATCCCC
 GAGCACCCACCCCTCCAGGCTCCACTAAGGAGGGAGGGGCTGTCTGCAGCAGCTGCACTCAGCACCTAGGCCAGGGTGGG
 GCCGCCGCAGATGGGCTCAGGAAGCCCCAGGTGCACTCAGCGAGAGCCCTGCCTTTCAGTTGCCAAAAGCTGCATCAGGG
 GAATGCGGCAAGGCACACAGGGCTCTGGCAGCCCTGGGGACTGGGCGCTGCCCCTGGGAGGGGAGAGCCTGGCCAGGGC
 TGGTGTGGGGCCGGAGCAGCATCTTCCGGTGCTATCCTCCCCTCCCACCCCTCAGAGCTCAAGCCAAGTCCAGCGGCCG
 CAGTCTTCACCTCTCCACACTCACTTTTTATCTGGTGTCTTTACTTCTGCCTGCGTTTGCTCTCTAGCCAATAAACCGTC
 CTTGTGTGCGAGTCACCTGGGCTCCTGTCAGGGCCTGGCCCTGAGGGTGGTAAAGGGAAAGGTAGACTCACCTCTGCCC
 CACTCTTCCACAGAGTGAGCAGGGGCCCTGTGGCTGCCCGGCCCCAGCTCTCTAGTTGGGAAGAAGTGCAGCCCTCCC
 TGTCTTCTGCGGGGCTGTGCCTCTCAGAGGGCAGTGCTGTTCTGACATGAAGCCGCACAAGGAACGTTTTATTCTTA
 AGAAAAAGTTTCTAAATTTGGATTGTGGAGCGGACTGTAGAATGCGTCTGACAGTTCAGTTCAAGCACAAGAAGTGGGT
 AGCGGTCACTGCTGTCTGCAGGTGCGGCGTTTACCCAGCATGTGCCCCGTGCCATGGGTTCTCATGCCGTCTCAGTG
 TCCACATTTACAGATGAGATCAGCAAGACAGTCAGCTCCTCAAGGGACCACAGTTGGCAAGTGGCCAAGCAGGGACTGA
 AGCCCAGGCAGCTGATTCTAGAAACCCTAAGTGATGTCTGTGTTTTAGATGGCCCCTAGCAGGACCTAGCATTCTGACT
 TCAGTCCTGAGAAGGCCAACAGCCAGTAGGCCCCACTGTTGGGGCTTCTGAAGAGGGGATCGGGGGATGACGGGGGCACG
 GGGCTATAAATAGGAAGGCACAGAGCTTCAAGAAAGGCTCACCCAGGGATGAGCTCAGCCCACTGGGCCAATGAAAGCAG
 GGTCAAGGACAGGACCAGCGCAGGCCAAGGAAGGAATATCTGACAGCGCCACCCAGCCAAACCCTCAGCCCAAGGACA
 GGAATGAGGAGATGCTGGTGAAGTACCATCCATCAGTACCTGCCTTCCCCGAGGCTGCAGCCCCACTCCCAGGCGCCT
 GGCCAGGGGAGTTTCTAGGTTCTGAGAGCCACGTTGTCATCCCTGGGCTTTGAAGTTAAACATCACACAGCTGTCTATA
 AACAAGATTTTAATATCTGTATAAATAGACCACAGAATTACCAAAACTGCAAA

[SeqFeature(FeatureLocation(ExactPosition(0), ExactPosition(3013), strand=1),
 type='source'), SeqFeature(FeatureLocation(ExactPosition(0),
 ExactPosition(3013), strand=1), type='gene'),
 SeqFeature(FeatureLocation(ExactPosition(0), ExactPosition(240), strand=1),
 type='exon'), SeqFeature(FeatureLocation(ExactPosition(177),
 ExactPosition(1365), strand=1), type='CDS'),
 SeqFeature(FeatureLocation(ExactPosition(177), ExactPosition(258), strand=1),
 type='misc_feature'), SeqFeature(FeatureLocation(ExactPosition(177),
 ExactPosition(180), strand=1), type='misc_feature'),
 SeqFeature(FeatureLocation(ExactPosition(204), ExactPosition(207), strand=1),
 type='misc_feature'), SeqFeature(FeatureLocation(ExactPosition(1359),
 ExactPosition(1362), strand=1), type='misc_feature'),
 SeqFeature(FeatureLocation(ExactPosition(240), ExactPosition(382), strand=1),
 type='exon'), SeqFeature(FeatureLocation(ExactPosition(382), ExactPosition(511),
 strand=1), type='exon'), SeqFeature(FeatureLocation(ExactPosition(511),
 ExactPosition(645), strand=1), type='exon'),
 SeqFeature(FeatureLocation(ExactPosition(645), ExactPosition(738), strand=1),
 type='exon'), SeqFeature(FeatureLocation(ExactPosition(738), ExactPosition(801),
 strand=1), type='exon'), SeqFeature(FeatureLocation(ExactPosition(801),
 ExactPosition(825), strand=1), type='exon'),
 SeqFeature(FeatureLocation(ExactPosition(825), ExactPosition(915), strand=1),
 type='exon'), SeqFeature(FeatureLocation(ExactPosition(915),
 ExactPosition(1016), strand=1), type='exon'),
 SeqFeature(FeatureLocation(ExactPosition(1016), ExactPosition(1257), strand=1),
 type='exon'), SeqFeature(FeatureLocation(ExactPosition(1257),
 ExactPosition(3013), strand=1), type='exon'),
 SeqFeature(FeatureLocation(ExactPosition(1989), ExactPosition(1995), strand=1),
 type='regulatory'), SeqFeature(FeatureLocation(ExactPosition(2010),

```

ExactPosition(2011), strand=1), type='polyA_site'),
SeqFeature(Location(ExactPosition(2239), ExactPosition(2245), strand=1),
type='regulatory'), SeqFeature(Location(ExactPosition(2256),
ExactPosition(2257), strand=1), type='polyA_site'),
SeqFeature(Location(ExactPosition(2960), ExactPosition(2966), strand=1),
type='regulatory'), SeqFeature(Location(ExactPosition(2983),
ExactPosition(2989), strand=1), type='regulatory'),
SeqFeature(Location(ExactPosition(2989), ExactPosition(2990), strand=1),
type='polyA_site'), SeqFeature(Location(ExactPosition(3012),
ExactPosition(3013), strand=1), type='polyA_site'))]

```

NM_015790.3

Mus musculus icos ligand (Icosl), mRNA

```

AGCGGGTCTCCTGCCGCAAAGCCTCAAGAACCCAGATTTTCAGCGCCCCAAGCCTGGAAGCTCCCCAGTTCTTCGTGGC
CCCCAACAGCTCCGGAACCCAGCCGCTGCAACTCTCCGCGTCCGAAATCCAGCACCCCGCAGTCTGCGCTCGCACCATTG
CAGCTAAAGTGTCCCTGTTTTGTGTCTTGGGAACAGGCAGCCTGTTTGAAGAAGCTCCATGTTTCTAGCGGGTCTT
TTCTGGTCTTGGTCTGTTCTTGCTGCTGTTGAGCAGCCTCTGTGCTGCCTCTGCAGAGACTGAAGTCGGTGCAATGGTGG
GCAGCAATGTGGTGTCTAGCTGCATTGACCCCAACAGACGCCATTTCAACTTGAGTGGTCTGTATGTCTATTGGCAAATC
GAAAACCCAGAAAGTTTCGGTGACTTACTACCTGCCTTACAAGTCTCCAGGGATCAATGTGGACAGTTCTACAAGAACAG
GGGCCATCTGTCCCTGGACTCCATGAAGCAGGGTAACTTCTCTGTACCTGAAGAATGTCACCCCTCAGGATACCCAGG
AGTTCACATGCCGGGTATTTATGAATACAGCCACAGAGTTAGTCAAGATCTTGAAGAGGTGGTCAGGCTGCGTGTGGCA
GCAAACCTTCAGTACACCTGTCTATCAGCACCTCTGATAGCTCCAACCCGGGCCAGGAACGTACCTACACCTGCATGTCCAA
GAATGGCTACCCAGAGCCCCAACCTGTATTGGATCAACACAACGGACAATAGCCTAATAGACACGGCTCTGCAGAATAACA
CTGTCTACTTGAACAAGTTGGGCCTGTATGATGTAATCAGCACATTAAGGCTCCCTTGGACATCTCGTGGGGATGTTCTG
TGCTGCGTAGAGAATGTGGCTCTCCACCAGAACATCACTAGCATTAGCCAGGCAGAAAGTTTCACTGGAAATAACACAAA
GAACCCACAGGAAACCCACAATAATGAGTTAAAGTCCCTTGTCCCGTCTTGTGTACTGGCGGCAGCGGCATTTCGTTT
CCTTCATCATATACAGACGCACGCGTCCCCACCGAAGCTATACAGGACCCAAGACTGTACAGCTTGAACCTACAGACCAC
GCCTGACAGGACTCTGCCAGGATATGGACAGGGTTTCTGTGAGTTGCCACCAGGTGGATGTCAGACACAACCTCAGAGT
GGACCCCAACAGGCTGGTGACAGAGGACAACGAGCTGTCTGCTTATGGGCTGTGATGGAGGCCAGGAATCCCTGGCTTT
ACGAGGCACAGAGACTTCATCCCAGAAACCCGAGGGAGATCTCTCCAGTGGGCAGCAGCAACATCATCGGAATATGGAG
CCTCCGGTGAGCTGTCCGCACAGAGAGCAGCAGCTTGTGAGAAGATCCTTCCTTGGCACGTTACTACTCAGGCCTAGGAG
CTTTATAAAAGAGCGTTTGGCCACTCTGAAAGCCCTACAGAGTCTACTGGAGACTTTCCTGCAGGACCTTCAGTTGGG
GAGGAAGCCTGACTTTATTTAGGTCTCAGGCTACTTGGGCCTCTTCAGGATATGTGGGATTTTGTCTACTGCAAACCTG
TTTCTGGCTGACAATGGTTGGGCTCAGAGGCACTCAGCTTCACAACATCAATGGGACACGCCTCATCCTTGACTTCCTGT
GGCTACAGAAGCTTCCGAAAGCCTTGAGCTCTTCAGACTGAACAGCTCTGCCAGTCTCAGCAGCCCATGAAGATCTC
AACTCCAGCTTCTGGGTCTCCGTGTTGCTGGCCAGAATAGAGCTAGCTCTTTTGTTCAGATGGTTCTGCAAAGTTGG
CTGCTTGGAAACCTAGGGATGTATGTACAAGTCCAGGCTGATGCAGTAGGGGGCACGGACTCCCCGATGGAACACAGTA
TCTGACCCTAGGTGAGGGCAAGCTCCTTCCCACGCAGAGGACTGGAAATCTTGACCGTCAAGGCCTGTCTGCTATGTGG
CTGGGGCTCAGTGCTGATGGATGTGTGAGATCTCAGGAATGAGGAGTGAGAACCTGGGCTCAGGACTAGGAAGACCTGT
CCATTTTTTTTTTTTTTAAATGCCACATGGACTTTTTATTCTTCACACCGATGTATTCAATGAGTGTAGAGAACTAC
TTAAGTCTTCCCCGAGTACAAAGCATTACCTACCTGCAGAATAGCAACTGTTGTTATGGGTCTTGAGTTGGCAGCTACAG
CAAACAAGCACAAAGGAGCAGTTGGGGTGCAAGAAGATGGGGTGACGCGCCCCAAGGACAGACATTTGGGAATTAGTGGT
CTCCCTGATGCCATAGTTCCCCAGGAACCTCAGGTGGGTCTGCGGCAGCACAGTAGGAGTATTCCTCCTACTTTAACTTT
TCTTGTGACAGTAGTTTAGGTTTCAAAAGAGGTCAACTCAGCAAGCCAGCTAGCCGCTTGGGGCACCAGACACTGC
CCCCACCCCTGCTTATGTAGGCATTGGGAACCTTCACAGACCACTGGCTGTACAGTCAACATCACCTGCTGATTCCA
GCAGGCCCCCACCTTCTTGTGGAATCCTGGGAGCACTCCCTCTTACCCCTCACTGCCCCCACCCCTGCACATCAGCA
TTCATTAGATTTGCCCTGTAAAGTCTGATTCTCTCTTATCTGGGTTGTAGATGGGGCATAGTGACTTCTAGAAACCTAA
CAAGGAATAAATGTAAGATGTGCTTTC

```

```

[SeqFeature(Location(ExactPosition(0), ExactPosition(2748), strand=1),

```

```

type='source'), SeqFeature(FeatureLocation(ExactPosition(0),
ExactPosition(2748), strand=1), type='gene'),
SeqFeature(FeatureLocation(ExactPosition(0), ExactPosition(168), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(157),
ExactPosition(1126), strand=1), type='CDS'),
SeqFeature(FeatureLocation(ExactPosition(157), ExactPosition(295), strand=1),
type='sig_peptide'), SeqFeature(FeatureLocation(ExactPosition(367),
ExactPosition(370), strand=1), type='misc_feature'),
SeqFeature(FeatureLocation(ExactPosition(514), ExactPosition(517), strand=1),
type='misc_feature'), SeqFeature(FeatureLocation(ExactPosition(643),
ExactPosition(646), strand=1), type='misc_feature'),
SeqFeature(FeatureLocation(ExactPosition(754), ExactPosition(757), strand=1),
type='misc_feature'), SeqFeature(FeatureLocation(ExactPosition(793),
ExactPosition(796), strand=1), type='misc_feature'),
SeqFeature(FeatureLocation(ExactPosition(910), ExactPosition(913), strand=1),
type='misc_feature'), SeqFeature(FeatureLocation(ExactPosition(949),
ExactPosition(952), strand=1), type='misc_feature'),
SeqFeature(FeatureLocation(ExactPosition(988), ExactPosition(1051), strand=1),
type='misc_feature'), SeqFeature(FeatureLocation(ExactPosition(168),
ExactPosition(287), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(287), ExactPosition(641), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(641), ExactPosition(935),
strand=1), type='exon'), SeqFeature(FeatureLocation(ExactPosition(935),
ExactPosition(1085), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(1085), ExactPosition(1115), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(1115),
ExactPosition(2748), strand=1), type='exon')]

```

NM_148902.2

Homo sapiens TNF receptor superfamily member 18 (TNFRSF18), transcript variant 3, mRNA

```

GTGGGCTCTTGAAACCCGAGCATGGCACAGCACGGGGCGATGGGCGCGTTTCGGGCCCTGTGCGGCCTGGCGCTGCTGTG
CGCGCTCAGCCTGGGTGACGCGCCCCACCGGGGTCCCGGGTGCGGCCCTGGGCGCCTCCTGCTTGGGACGGGAACGGACG
CGCGCTGCTGCCGGGTTCACACGACGCGCTGCTGCCGCGATTACCGGGCGAGGAGTGCTGTTCCGAGTGGGACTGCATG
TGTGTCCAGCCTGAATTCCACTGCGGAGACCCTTGCTGCACGACCTGCCGGCACCAACCTTGTCCCCAGGCCAGGGGGT
ACAGTCCCAGGGGAAATTCAGTTTTGGCTTCCAGTGTATCGACTGTGCCTCGGGGACCTTCTCCGGGGGCCACGAAGGCC
ACTGCAAACCTTGACAGACTGCACCCAGTTCGGGTTTCTCACTGTGTTCCCTGGGAACAAGACCCACAACGCTGTGTGC
GTCCCAGGGTCCCCGCCGGCAGAGCCGCTTGGGTGGCTGACCGTCGTCCTCCTGGCCGTGGCCGCCTGCGTCCTCCTCCT
GACCTCGGCCCAGCTTGACTGCACATCTGGCAGCTGAGGAAGACCCAGCTGCTGCTGGAGGTGCCGCCGTCGACCGAAG
ACGCCAGAAGCTGCCAGTTCCCCGAGGAAGAGCGGGGCGAGCGATCGGCAGAGGAGAAGGGGCGGCTGGGAGACCTGTGG
GTGTGAGCCTGGCCGTCCTCCGGGGCCACCGACCGCAGCCAGCCCCTCCCCAGGAGCTCCCCAGGCCGCAGGGGCTCTGC
GTTCTGCTCTGGGCCGGGCCCTGCTCCCCTGGCAGCAGAAGTGGGTGCAGGAAGGTGGCAGTGACCAGCGCCCTGGACCA
TGCAGTTCGGCGCGCGGGCTGGGCCCTGCAGGAGGGAGAGAGACACAGTCATGGCCCCCTTCTCCCTTGCTGGCCCC
TGATGGGTGGGGTCTTAGGACGGGAGGCTGTGTCCGTGGGTGTGCAGTGCCAGCACGGGACCCGGCTGCAGGGGACCT
TCAATAAACACTTGTCAGTGA

```

```

[SeqFeature(FeatureLocation(ExactPosition(0), ExactPosition(1062), strand=1),
type='source'), SeqFeature(FeatureLocation(ExactPosition(0),
ExactPosition(1062), strand=1), type='gene'),
SeqFeature(FeatureLocation(ExactPosition(0), ExactPosition(208), strand=1),

```

```

type='exon'), SeqFeature(FeatureLocation(ExactPosition(9), ExactPosition(12),
strand=1), type='misc_feature'), SeqFeature(FeatureLocation(ExactPosition(21),
ExactPosition(726), strand=1), type='CDS'),
SeqFeature(FeatureLocation(ExactPosition(21), ExactPosition(96), strand=1),
type='sig_peptide'), SeqFeature(FeatureLocation(ExactPosition(96),
ExactPosition(723), strand=1), type='mat_peptide'),
SeqFeature(FeatureLocation(ExactPosition(208), ExactPosition(331), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(331), ExactPosition(419),
strand=1), type='exon'), SeqFeature(FeatureLocation(ExactPosition(419),
ExactPosition(609), strand=1), type='misc_feature'),
SeqFeature(FeatureLocation(ExactPosition(419), ExactPosition(601), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(601),
ExactPosition(1062), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(1042), ExactPosition(1048), strand=1),
type='regulatory'), SeqFeature(FeatureLocation(ExactPosition(1061),
ExactPosition(1062), strand=1), type='polyA_site'])]

```

NM_001243077.2

Homo sapiens CD28 molecule (CD28), transcript variant 2, mRNA

```

ACACTTCGGGTTCTCGGGGAGGAGGGCTGGAACCTAGCCCATCGTCAGGACAAAGATGCTCAGGCTGCTCTTGGCTC
TCAACTTATTCCTTCAATTCAAGTAACAGGAAACAAGATTTTGGTGAAGCAGTCGCCCATGCTTGTAGCGTACGACAAT
GCGGTCAACCTTAGCTGGAAACACCTTTGTCCAAGTCCCCTATTTCCCGGACCTTCTAAGCCCTTTTGGGTGCTGGTGGT
GGTTGGTGGAGTCTGGCTTGCTATAGCTTGCTAGTAACAGTGGCCTTTATTATTTTCTGGGTGAGGAGTAAGAGGAGCA
GGCTCCTGCACAGTGAATACATGAACATGACTCCCCGCCGCCCGGGCCACCCGCAAGCATTACCAGCCCTATGCCCCA
CCACGCGACTTCGCGAGCCTATCGCTCCTGACACGGACGCTATCCAGAAGCCAGCCGGCTGGCAGCCCCCATCTGCTCAA
TATCACTGCTCTGGATAGGAAATGACCGCCATCTCCAGCCGCCACCTCAGGCCCTGTTGGGCCACCAATGCCAATTTT
TCTCGAGTGAAGTACACAAATATCAAGATCATTTTGAGACTCTGAAATGAAGTAAAAGAGATTTCTGTGACAGGCCAAG
TCTTACAGTGGCATGGCCACATTCCAATTACCATGTACTTAGTGACTTGACTGAGAAGTTAGGGTAGAAAACAAAAAG
GGAGTGGATTCTGGGAGCCTCTTCCCTTTCTCACTCACCTGCACATCTCAGTCAAGCAAAGTGTGGTATCCACAGACATT
TTAGTTGCAGAAGAAAGGCTAGGAAATCATTCCTTTTGGTTAAATGGGTGTTAATCTTTTGGTTAGTGGGTAAACGGG
GTAAGTTAGAGTAGGGGAGGGATAGGAAGACATATTTAAAAACCATTAAACACTGTCTCCCACTCATGAAATGAGCCA
CGTAGTTCCTATTTAATGCTGTTTTCTTTAGTTTAGAAATACATAGACATTGCTTTTATGAATTCTGATCATATTTAG
TCATTTTGACCAAAATGAGGGATTTGGTCAAATGAGGGATTCCCTCAAAGCAATATCAGGTAAACCAAGTTGCTTTCTCA
CTCCCTGTCATGAGACTTCAGTGTTAATGTTTCAAAATATACTTTGAAAGAATAAAATAGTTCTCCTACATGAAGAAAGA
ATATGTCAGGAAATAAGGTCACCTTTATGTCAAAATATTTGAGTACTATGGGACCTGGCGCAGTGGCTCATGCTTGAAT
CCCAGCACTTTGGGAGGCCGAGGTGGGCAGATCACTTGAGATCAGGACCAGCCTGGTCAAGATGGTGAAGTCCGCTGTG
ACTAAAAATACAAAATTTAGCTTGGCCTGGTGGCAGGCACCTGTAATCCCAGCTGCCCAAGAGGCTGAGGCATGAGAATC
GCTTGAACCTGGCAGGCGGAGGTTGCAGTGAGCCGAGATAGTGCCACAGCTCTCCAGCCTGGGCGACAGAGTGAGACTCC
ATCTCAAACAACAACAACAACAACAACAACAACAACCACAAAATTTTGAAGTACTGTGAAGGATTATTTGTCTAA
CAGTTCATTCCAATCAGACCAGGTAGGAGCTTTCTGTTTCATATGTTTCAGGGTTGCACAGTTGGTCTCTTTAATGTCG
GTGTGGAGATCCAAAGTGGGTTGTGGAAGAGCGTCCATAGGAGAAGTGAGAATACTGTGAAAAAGGGATGTTAGCATTC
ATTAGAGTATGAGGATGAGTCCCAAGAAGTTCTTTGGAAGGAGGACGAATAGAATGGAGTAATGAAATCTTGCCATGT
GCTGAGGAGATAGCCAGCATTAGGTGACAATCTTCCAGAAGTGGTCAGGCAGAAGGTGCCCTGGTGAGAGCTCCTTTACA
GGGACTTTATGTGGTTTAGGGCTCAGAGCTCCAAAACCTCTGGGCTCAGCTGCTCCTGTACCTTGGAGGTCCATTACATG
GGAAAGTATTTTGAATGTGTCTTTTGAAGAGAGCATCAGAGTTCTTAAGGACTGGGTAAGGCCTGACCCTGAAATGAC
CATGGATATTTTCTACCTACAGTTTGAGTCAACTAGAATATGCCTGGGGACCTTGAAGAATGGCCCTTCAGTGGCCCTC
ACCATTTGTTTCATGCTTCAGTTAATTCAGGTGTTGAAGGAGCTTAGGTTTTAGAGGCACGTAGACTTGGTTCAAGTCTCG
TTAGTAGTTGAATAGCCTCAGGCAAGTCACTGCCCACCTAAGATGATGGTTCTTCAACTATAAAATGGAGATAATGGTTA
CAAATGTCTCTTCTATAGTATAATCTCCATAAGGGCATGGCCCAAGTCTGTCTTTGACTCTGCCTATCCCTGACATTTA

```

GTAGCATGCCCCGACATACAATGTTAGCTATTGGTATTATTGCCATATAGATAAAATTATGTATAAAAAATTAACTGGGCAA
TAGCCTAAGAAGGGGGGAATATTGTAACACAAATTTAAACCCACTACGCAGGGATGAGGTGCTATAATATGAGGACCTTT
TAACTTCCATCATTTTCTGTTTCTTGAAATAGTTTATCTTGTAATGAAATATAAGGCACCTCCCACTTTTATGTATAGA
AAGAGGTCTTTTAAATTTTTTTTAAATGTGAGAAGGAAGGGAGGAGTAGGAATCTTGAGATTCCAGATCGAAAATACTGTA
CTTTGGTTGATTTTAAAGTGGGCTTCCATTCCATGGATTTAATCAGTCCCAAGAAGATCAAACCTCAGCAGTACTTGGGTG
CTGAAGAACTGTTGGATTTACCCTGGCACGTGTGCCACTTGCCAGCTTCTTGGGCACACAGAGTTCTTCAATCCAAGTTA
TCAGATTGTATTGAAAATGACAGAGCTGGAGAGTTTTTTGAAATGGCAGTGGCAAATAAATAAATACTTTTTTTTAAAT
GGAAAGACTTGATCTATGGTAATAAATGATTTTGTCTGACTGGAAAAATAGGCCTACTAAAGATGAATCACACTTGA
GATGTTTCTTACTCACTCTGCACAGAAACAAAGAAGAAATGTTATACAGGGAAGTCCGTTTTCTACTATTAGTATGAACCA
AGAAATGGTTCAAAAACAGTGGTAGGAGCAATGCTTTCATAGTTTCAGATATGGTAGTTATGAAGAAAACAATGTCATTT
GCTGCTATTATTGTAAGAGTCTTATAATTAATGGTACTCCTATAATTTTTGATTGTGAGCTCACCTATTTGGGTTAAGCA
TGCCAATTTAAAGAGACCAAGTGTATGTACATTATGTTCTACATATTCAGTGATAAAATTAATACTACTATATGTCTG
CTTTAAATTTGACTTTAATATTGTCTTTTGGTATTAAGAAAGATATGCTTTCAGAATAGATATGCTTCGCTTTGGCAAG
GAATTTGGATAGAAGCTTGCTATTTTAAAGAGGTGTGGGGTAAATCCTTGTATAAATCTCCAGTTTTCAGCTTTTTTGA
AGCTAGACTTTCAAATACTAATTTCACTTCAAGCAGGGTACGTTTCTGGTTTGTGCTTGACTTCAGTCACAATTTCTT
ATCAGACCAATGGCTGACCTCTTTGAGATGTCAGGCTAGGCTTACCTATGTGTTCTGTGTCATGTGAATGCTGAGAAGTT
TGACAGAGATCCAAGTTCAGCCTTGACCCCATCAGTCCCTCGGGTTAACTAACTGAGCCACCGGTCTCATGGCTATTTT
AATGAGGGTATTGATGGTTAAATGCATGTCTGATCCCTTATCCCAGCCATTTGCACTGCCAGCTGGGAAGTATACCAGAC
CTGGATACTGATCCCAAAGTGTAAATTCAACTACATGCTGGAGATTAGAGATGGTGCCAATAAAGGACCCAGAACCCAGG
ATCTTGATTGCTATAGACTTATTAATAATCCAGGTCAAAGAGAGTGACACACACTCTCTCAAGACCTGGGGTGAGGGAGT
CTGTGTTATCTGCAAGGCCATTTGAGGCTCAGAAAGTCTCTCTTTTCTATAGATATATGCATACTTTCTGACATATAGGA
ATGTATCAGGAATACTCAACCATCACAGGCATGTTCTACCTCAGGGCCTTTACATGTCCTGTTTACTCTGTCTAGAATG
TCCTTCTGTAGATGACCTGGCTTGCCTCGTACCCTTCAGGTCTTGCTCAAGTGCATCTTCTCCCCTAGTTAACTAC
CCCACACCTGTCTGCTTTCCTTGCTTATTTTCTCCATAGCATTTTACCATCTCTTACATTAGACATTTTCTTATTTA
TTTGTAGTTTATAAGCTTCATGAGGCAAGTAACTTTGCTTTGTTTCTTGCTGTATCTCCAGTGCCAGAGCAGTGCCTGG
TATATAATAAAATATTATTGACTGAGTGAA

[SeqFeature(FeatureLocation(ExactPosition(0), ExactPosition(4430), strand=1),
type='source'), SeqFeature(FeatureLocation(ExactPosition(0),
ExactPosition(4430), strand=1), type='gene'),
SeqFeature(FeatureLocation(ExactPosition(0), ExactPosition(110), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(37), ExactPosition(40),
strand=1), type='misc_feature'), SeqFeature(FeatureLocation(ExactPosition(58),
ExactPosition(430), strand=1), type='CDS'),
SeqFeature(FeatureLocation(ExactPosition(58), ExactPosition(112), strand=1),
type='sig_peptide'), SeqFeature(FeatureLocation(ExactPosition(112),
ExactPosition(427), strand=1), type='mat_peptide'),
SeqFeature(FeatureLocation(ExactPosition(110), ExactPosition(176), strand=1),
type='exon'), SeqFeature(FeatureLocation(ExactPosition(176), ExactPosition(301),
strand=1), type='exon'), SeqFeature(FeatureLocation(ExactPosition(301),
ExactPosition(4430), strand=1), type='exon'),
SeqFeature(FeatureLocation(ExactPosition(3331), ExactPosition(3337), strand=1),
type='regulatory'), SeqFeature(FeatureLocation(ExactPosition(3349),
ExactPosition(3350), strand=1), type='polyA_site'),
SeqFeature(FeatureLocation(ExactPosition(3899), ExactPosition(3905), strand=1),
type='regulatory'), SeqFeature(FeatureLocation(ExactPosition(3920),
ExactPosition(3921), strand=1), type='polyA_site'),
SeqFeature(FeatureLocation(ExactPosition(4405), ExactPosition(4411), strand=1),
type='regulatory'), SeqFeature(FeatureLocation(ExactPosition(4429),


```
ExactPosition(4430), strand=1), type='polyA_site')]
```

```
[24]: from Bio.Blast import NCBIWWW
result_handle = NCBIWWW.qblast("blastn", "nt", "8332116")
```

```
[25]: from Bio.Blast import NCBIXML
blast_record = NCBIXML.read(result_handle)
```

```
[29]: E_VALUE_THRESH = 0.04
for alignment in blast_record.alignments:
    for hsp in alignment.hsps:
        if hsp.expect < E_VALUE_THRESH:
            print("****Alignment****")
            print("sequence:", alignment.title)
            print("length:", alignment.length)
            print("e value:", hsp.expect)
            print(hsp.query[0:75] + "...")
            print(hsp.match[0:75] + "...")
            print(hsp.sbjct[0:75] + "...")
```

```
****Alignment****
```

```
sequence: gi|1219041180|ref|XM_021875076.1| PREDICTED: Chenopodium quinoa cold-
regulated 413 plasma membrane protein 2-like (LOC110697660), mRNA
```

```
length: 1173
```

```
e value: 2.16947e-117
```

```
ACAGAAAATGGGGAGAGAAATGAAGTACTTGGCCATGAAAACCTGATCAATTGGCCGTGGCTAATATGATCGATTTC...
```

```
|| ||||| |||| | |||| || |||| |||| | |||| || || || |||| | ||...
```

```
ACCGAAAATGGGCAGAGGAGTGAATTATATGGCAATGACACCTGAGCAACTAGCCGCGCCAATTTGATCAACTC...
```

```
****Alignment****
```

```
sequence: gi|1226796956|ref|XM_021992092.1| PREDICTED: Spinacia oleracea cold-
regulated 413 plasma membrane protein 2-like (LOC110787470), mRNA
```

```
length: 672
```

```
e value: 1.36908e-113
```

```
AAAATGGGGAGAGAAATGAAGTACTTGGCCATGAAAACCTGATCAATTGGCCGTGGCTAATATGATCGATTCCGAT...
```

```
||||||| ||| |||| | || |||| ||||| || |||| |||| ||| ||| ||||| |||||...
```

```
AAAATGGGTAGACGAATGGATTATTTGGCGATGAAAACCGAGCAATTAGCCGCGCCAATTTGATCGATTCCGAT...
```

```
****Alignment****
```

```
sequence: gi|731339628|ref|XM_010682658.1| PREDICTED: Beta vulgaris subsp.
vulgaris cold-regulated 413 plasma membrane protein 2 (LOC104895996), mRNA
```

```
length: 847
```

```
e value: 3.67376e-108
```

```
TTGGCCATGAAAACCTGATCAATTGGCCGTGGCTAATATGATCGATTCCGATATCAATGAGCTTAAATGGCAACA...
```

```
||||||| |||| |||| | ||||| |||| |||| |||| |||| |||| || || ...
```

```
TTGGCCATGAAAACCTGAGCAAATGGCGTTGGCTAATTTGATAGATTATGATATGAATGAAGCTTAAGATCGCTTTG...
```

```
****Alignment****
```

```
sequence: gi|1389679838|ref|XM_016034586.2| PREDICTED: Ziziphus jujuba cold-
regulated 413 plasma membrane protein 2-like (LOC107424728), mRNA
```

```
length: 946
```

e value: 1.90306e-105
AAAATGGGGAGAGAAATGAAGTACTTGGCCATGAAAACTGATCAATTGGCCGTGGCTAATATGATCGATTCCGAT...
||||||| ||| ||| |||| |||| ||||| | ||| |||| | |||| ||| |||...
AAAATGGGGAGG---ATGGAGTTTTTGGCTATGAGAACTGATCCA---GCCACGGCTGACTTGATAAATTCTGAT...
****Alignment****
sequence: gi|1882610310|ref|XM_035691634.1| PREDICTED: Juglans regia cold-regulated 413 plasma membrane protein 2 (LOC108995251), transcript variant X2, mRNA
length: 909
e value: 2.82439e-103
AATGGGGAGAGAAATGAAGTACTTGGCCATGAAAACTGATCAATT-----GGCCGTGGCTAATATGATCGA...
||||||| ||| | | || ||||| ||||| |||| ||| || |||||...
AATGGGGAG-GAA--GGATTATTTGGCCATGAAAACTGATCCGGCCACGGCCACGGCCACGGCGGATTTGATCGA...
****Alignment****
sequence: gi|1882610309|ref|XM_018970776.2| PREDICTED: Juglans regia cold-regulated 413 plasma membrane protein 2 (LOC108995251), transcript variant X1, mRNA
length: 1025
e value: 2.82439e-103
AATGGGGAGAGAAATGAAGTACTTGGCCATGAAAACTGATCAATT-----GGCCGTGGCTAATATGATCGA...
||||||| ||| | | || ||||| ||||| |||| ||| || |||||...
AATGGGGAG-GAA--GGATTATTTGGCCATGAAAACTGATCCGGCCACGGCCACGGCCACGGCGGATTTGATCGA...
****Alignment****
sequence: gi|1389549632|ref|XM_006466626.3| PREDICTED: Citrus sinensis cold-regulated 413 plasma membrane protein 2 (LOC102620025), transcript variant X5, mRNA
length: 880
e value: 2.17138e-98
AAATGGGGAGAGAAATGAAGTACTTGGCCATGAAAACTGATCAATTGGCCGTGGCTAATATGATCGATTCCGATA...
||||||| |||| || |||| | ||||| |||| | || | |||| || ||| ...
AAATGGGGAGAT---TGAATTATTTGGCTATGAAAACTGATGATCAGGTTGCAGCAGAGTTGATCAGCTCTGATT...
****Alignment****
sequence: gi|1389549631|ref|XM_006466625.2| PREDICTED: Citrus sinensis cold-regulated 413 plasma membrane protein 2 (LOC102620025), transcript variant X4, mRNA
length: 946
e value: 2.17138e-98
AAATGGGGAGAGAAATGAAGTACTTGGCCATGAAAACTGATCAATTGGCCGTGGCTAATATGATCGATTCCGATA...
||||||| |||| || |||| | ||||| |||| | || | |||| || ||| ...
AAATGGGGAGAT---TGAATTATTTGGCTATGAAAACTGATGATCAGGTTGCAGCAGAGTTGATCAGCTCTGATT...
****Alignment****
sequence: gi|1389549630|ref|XM_006466624.3| PREDICTED: Citrus sinensis cold-regulated 413 plasma membrane protein 2 (LOC102620025), transcript variant X3, mRNA
length: 956
e value: 2.17138e-98
AAATGGGGAGAGAAATGAAGTACTTGGCCATGAAAACTGATCAATTGGCCGTGGCTAATATGATCGATTCCGATA...
||||||| |||| || |||| | ||||| |||| | || | |||| || ||| ...

```

AAATGGGGAGAT---TGAATTATTTGGCTATGAAAACTGATGATCAGGTTGCAGCAGAGTTGATCAGCTCTGATT...
****Alignment****
sequence: gi|1389549629|ref|XM_006466623.3| PREDICTED: Citrus sinensis cold-
regulated 413 plasma membrane protein 2 (LOC102620025), transcript variant X2,
mRNA
length: 1014
e value: 2.17138e-98
AAATGGGGAGAGAAATGAAGTACTTGGCCATGAAAACTGATCAATTGGCCGTGGCTAATATGATCGATTCCGATA...
|||||||      ||| || |||| | ||||| | | | | |||| | || | ...
AAATGGGGAGAT---TGAATTATTTGGCTATGAAAACTGATGATCAGGTTGCAGCAGAGTTGATCAGCTCTGATT...
****Alignment****
sequence: gi|1389549624|ref|XM_025094967.1| PREDICTED: Citrus sinensis cold-
regulated 413 plasma membrane protein 2 (LOC102620025), transcript variant X1,
mRNA
length: 978
e value: 2.17138e-98
AAATGGGGAGAGAAATGAAGTACTTGGCCATGAAAACTGATCAATTGGCCGTGGCTAATATGATCGATTCCGATA...
|||||||      ||| || |||| | ||||| | | | | |||| | || | ...
AAATGGGGAGAT---TGAATTATTTGGCTATGAAAACTGATGATCAGGTTGCAGCAGAGTTGATCAGCTCTGATT...
****Alignment****
sequence: gi|1350315641|ref|XM_024180293.1| PREDICTED: Citrus clementina cold-
regulated 413 plasma membrane protein 2 (LOC18037141), transcript variant X4,
mRNA
length: 868
e value: 2.17138e-98
AAATGGGGAGAGAAATGAAGTACTTGGCCATGAAAACTGATCAATTGGCCGTGGCTAATATGATCGATTCCGATA...
|||||||      ||| || |||| | ||||| | | | | |||| | || | ...
AAATGGGGAGAT---TGAATTATTTGGCTATGAAAACTGATGATCAGGTTGCAGCAGAGTTGATCAGCTCTGATT...
****Alignment****
sequence: gi|1350315638|ref|XM_006425719.2| PREDICTED: Citrus clementina cold-
regulated 413 plasma membrane protein 2 (LOC18037141), transcript variant X3,
mRNA
length: 893
e value: 2.17138e-98
AAATGGGGAGAGAAATGAAGTACTTGGCCATGAAAACTGATCAATTGGCCGTGGCTAATATGATCGATTCCGATA...
|||||||      ||| || |||| | ||||| | | | | |||| | || | ...
AAATGGGGAGAT---TGAATTATTTGGCTATGAAAACTGATGATCAGGTTGCAGCAGAGTTGATCAGCTCTGATT...
****Alignment****
sequence: gi|1350315636|ref|XM_006425716.2| PREDICTED: Citrus clementina cold-
regulated 413 plasma membrane protein 2 (LOC18037141), transcript variant X2,
mRNA
length: 881
e value: 2.17138e-98
AAATGGGGAGAGAAATGAAGTACTTGGCCATGAAAACTGATCAATTGGCCGTGGCTAATATGATCGATTCCGATA...
|||||||      ||| || |||| | ||||| | | | | |||| | || | ...
AAATGGGGAGAT---TGAATTATTTGGCTATGAAAACTGATGATCAGGTTGCAGCAGAGTTGATCAGCTCTGATT...
****Alignment****
sequence: gi|1350315634|ref|XM_006425717.2| PREDICTED: Citrus clementina cold-

```

regulated 413 plasma membrane protein 2 (LOC18037141), transcript variant X1,
mRNA
length: 952
e value: 2.17138e-98
AAATGGGGAGAGAAATGAAGTACTTGGCCATGAAAACTGATCAATTGGCCGTGGCTAATATGATCGATTCCGATA...
||||||| ||| || |||| | ||||| ||| | ||| | |||| | || || ...
AAATGGGGAGAT---TGAATTATTTGGCTATGAAAACTGATGATCAGGTTGCAGCAGAGTTGATCAGCTCTGATT...
****Alignment****
sequence: gi|1204884098|ref|XM_021445554.1| PREDICTED: *Herrania umbratica* cold-
regulated 413 plasma membrane protein 2-like (LOC110429488), mRNA
length: 905
e value: 2.17138e-98
AAATGGGGAGAGAAATGAAGTACTTGGCCATGAAAACTGATCAATTGGCCGTGGCTAATATGATCGATTCCGATA...
||||||| ||| | || |||| | ||||| |||| | || | | || |||| | || ||||...
AAATGGGGAGA---ATGGAATATTTGGCTATGAAAACAGATCCTGTAGCAGAAG---ATTTGATCAGTTCTGATA...
****Alignment****
sequence: gi|1227938481|ref|XM_022049453.1| PREDICTED: *Carica papaya* cold-
regulated 413 plasma membrane protein 2-like (LOC110820077), mRNA
length: 1009
e value: 9.23296e-97
AGAAAATGGGGAGAGAAATGAAGTACTTGGCCATGAAAACTGATCAATTGGCCGTGGCTAATATGATCGATTCCG...
||||||| ||| | || |||| | |||| | |||| | ||| | || | || | ||| |...
AGAAAATGGGGAGG---ATGGAATATTTGGCTATGAAGACTGATCA---GGCCACTGCTGATCTCATCACTTCTG...
****Alignment****
sequence: gi|1063463253|ref|XM_007047033.2| PREDICTED: *Theobroma cacao* cold-
regulated 413 plasma membrane protein 2 (LOC18611025), transcript variant X2,
mRNA
length: 1071
e value: 3.92596e-95
TGTGAACAGA-AAATGGGGAGAGAAATGAAGTACTTGGCCATGAAAACTGATCAATTGGCCGTGGCTAATATGAT...
|| |||| || ||||| ||| | || |||| | ||||| |||| | || | | || ||||...
TGAGAACTGAGAAATGGGGAGA---ATGGAATATTTGGCTATGAAAACAGATCCTGTAGCAGAAG---ATTTGAT...
****Alignment****
sequence: gi|1063463252|ref|XM_007047032.2| PREDICTED: *Theobroma cacao* cold-
regulated 413 plasma membrane protein 2 (LOC18611025), transcript variant X1,
mRNA
length: 1065
e value: 3.92596e-95
TGTGAACAGA-AAATGGGGAGAGAAATGAAGTACTTGGCCATGAAAACTGATCAATTGGCCGTGGCTAATATGAT...
|| |||| || ||||| ||| | || |||| | ||||| |||| | || | | || ||||...
TGAGAACTGAGAAATGGGGAGA---ATGGAATATTTGGCTATGAAAACAGATCCTGTAGCAGAAG---ATTTGAT...
****Alignment****
sequence: gi|1269881407|ref|XM_022895605.1| PREDICTED: *Durio zibethinus* cold-
regulated 413 plasma membrane protein 2 (LOC111300020), transcript variant X3,
mRNA
length: 1069
e value: 1.37029e-94
AAATGGGGAGAGAAATGAAGTACTTGGCCATGAAAACTGATCAATTGGCCGTGGCTAATATGATCGATTCCGATA...

e value: 3.67701e-89
TGATCGATTCCGATATCAATGAGCTTAAAATGGCAACAATGAGGCTCATCAATGATGCTAGTATGCTCGGTCATT...
|||| | |||| | |||| | || || | | || | |||| | |||| | | || | || | ||...
TGATAGATTTCAGATATCAAAGAGCTCAAGATTGCAGCCAAGAGACTCATCAGTGATGCCACCAAGCTTGGTGGTT...
****Alignment****
sequence: gi|1079239703|ref|XM_009378191.2| PREDICTED: Pyrus x bretschneideri cold-regulated 413 plasma membrane protein 2 (LOC103965177), mRNA
length: 885
e value: 3.67701e-89
TGATCGATTCCGATATCAATGAGCTTAAAATGGCAACAATGAGGCTCATCAATGATGCTAGTATGCTCGGTCATT...
|||| | |||| | |||| | || || | | || | |||| | |||| | | || | || | ||...
TGATAGATTTCAGATATCAAAGAGCTCAAGATTGCAGCCAAGAGACTCATCAGTGATGCCACCAAGCTTGGTGGTT...
****Alignment****
sequence: gi|1350280614|ref|XM_024170292.1| PREDICTED: Morus notabilis cold-regulated 413 plasma membrane protein 2 (LOC21394987), mRNA
length: 1020
e value: 1.2834e-88
AAATGGGGAGAGAAATGAAGTACTTGGCCATGAAAAGTATCAATTGGCCGTGGCTAATATGATCGATTCCGATA...
||||||| || || ||||| |||| | | || | || | || | || | || | ||...
AAATGGGGAGGGAT-----TATTTGGCCATGAAAACGGACCCA---GCCACGGCTGATTTGATAAATTCTGATA...
****Alignment****
sequence: gi|743838297|ref|XM_011027373.1| PREDICTED: Populus euphratica cold-regulated 413 plasma membrane protein 2 (LOC105126500), transcript variant X2, mRNA
length: 1132
e value: 1.2834e-88
AAAATGGGGAGAGAAATGAAGTACTTGGCCATGAAAAGTATCAATTGGCCGTGGCTAATATGATCGATTCCGAT...
||||||| || || || | |||| | |||| | | || | |||| | || | |||||...
AAAATGGGGAGG---ATGGAGTTTTTGAAGATGAAGACTGATGATGAAGTCAGCGCTAATTTAATTGATTCCGAT...
****Alignment****
sequence: gi|743838293|ref|XM_011027372.1| PREDICTED: Populus euphratica cold-regulated 413 plasma membrane protein 2 (LOC105126500), transcript variant X1, mRNA
length: 980
e value: 1.2834e-88
AAAATGGGGAGAGAAATGAAGTACTTGGCCATGAAAAGTATCAATTGGCCGTGGCTAATATGATCGATTCCGAT...
||||||| || || || | |||| | |||| | | || | |||| | || | |||||...
AAAATGGGGAGG---ATGGAGTTTTTGAAGATGAAGACTGATGATGAAGTCAGCGCTAATTTAATTGATTCCGAT...
****Alignment****
sequence: gi|1768569081|ref|XM_031406607.1| PREDICTED: Pistacia vera cold-regulated 413 plasma membrane protein 2-like (LOC116120644), mRNA
length: 982
e value: 1.5635e-87
AAAATGGGGAGAGAAATGAAGTACTTGGCCATGAAAAGTATCAATTGGCCGTGGCTAATATGATCGATTCCGA...
||||||| || | || || | |||| | |||| | || | || | || | || | ||...
AAAATGGGGAGG---ATGGATTATCTGGGAATGAAAAGTGA-CATCAGGTTACTGCTGAGGTGATTAAGTCTGA...
****Alignment****
sequence: gi|1216950057|ref|XM_021815585.1| PREDICTED: Hevea brasiliensis cold-

regulated 413 plasma membrane protein 2-like (LOC110658100), transcript variant X2, mRNA

length: 1073

e value: 1.5635e-87

AAATGGGGAGAGAAATGAAGTACTTGGCCATGAAAACTGATCAATTGGCCGTGGCTAATATGATCGATTCCGATA...

||||||| ||| ||||| ||| ||||| | | ||| || |||| | || || ...

AAATGGGGAGG---ATGGAGTACTTGAAAATGAGTACTGATCAAGTACC---GGCCGATTTGATCAAGTCTGATC...

****Alignment****

sequence: gi|1216950055|ref|XM_021815584.1| PREDICTED: Hevea brasiliensis cold-regulated 413 plasma membrane protein 2-like (LOC110658100), transcript variant X1, mRNA

length: 1024

e value: 1.5635e-87

AAATGGGGAGAGAAATGAAGTACTTGGCCATGAAAACTGATCAATTGGCCGTGGCTAATATGATCGATTCCGATA...

||||||| ||| ||||| ||| ||||| | | ||| || |||| | || || ...

AAATGGGGAGG---ATGGAGTACTTGAAAATGAGTACTGATCAAGTACC---GGCCGATTTGATCAAGTCTGATC...

****Alignment****

sequence: gi|1375871125|ref|XM_024605027.1| PREDICTED: Populus trichocarpa cold-regulated 413 plasma membrane protein 2 (LOC18101203), mRNA

length: 1130

e value: 5.45716e-87

AAAATGGGGAGAGAAATGAAGTACTTGGCCATGAAAACTGATCAATTGGCCGTGGCTAATATGATCGATTCCGAT...

||||||| ||| ||| ||| |||| | |||| | | |||| | || || |||||...

AAAATGGGGAGG---ATGGAGTTTTTGAAGATGAAGACTGATGATGAAGTCAGCGCTAATTTAATTGAGTCCGAT...

****Alignment****

sequence: gi|1585724761|ref|XM_028202722.1| PREDICTED: Camellia sinensis cold-regulated 413 plasma membrane protein 2-like (LOC114262355), mRNA

length: 910

e value: 1.90474e-86

AGAAAATGGGGAGAGAAATGAAGTACTTGGCCATGAAAACTGATCAATTGGCCGTGGCTAATATGATCGATTCCG...

||||||| |||| ||| |||| |||| || |||| || | | ||| |||||...

AGAAAATGGGGAGGAAAATGGAGTATTTGGCAATGAAGACCGATCATCCAGCCCCAACCCAATCGATGAATTCCG...

****Alignment****

sequence: gi|1860377401|ref|XM_035077206.1| PREDICTED: Populus alba cold-regulated 413 plasma membrane protein 2-like (LOC118063227), transcript variant X2, mRNA

length: 916

e value: 6.64819e-86

AAAATGGGGAGAGAAATGAAGTACTTGGCCATGAAAACTGATCAATTGGCCGTGGCTAATATGATCGATTCCGAT...

||||||| ||| ||| ||| |||| | |||| | | |||| | || || |||||...

AAAATGGGGAGG---ATGGAGTTTTTGAAGATGAAGACTGATGATGAAGTCAGCGGTAATTTAATTGAGTCCGAT...

****Alignment****

sequence: gi|1860377399|ref|XM_035077205.1| PREDICTED: Populus alba cold-regulated 413 plasma membrane protein 2-like (LOC118063227), transcript variant X1, mRNA

length: 1109

e value: 6.64819e-86

AAAATGGGGAGAGAAATGAAGTACTTGGCCATGAAAACTGATCAATTGGCCGTGGCTAATATGATCGATTCCGAT...

```

||||| ||| ||| ||| |||| ||||| | | | | |||| | | | | |||||...
AAAATGGGGAGG---ATGGAGTTTTTGAAGATGAAGACTGATGATGAAGTCAGCGGTAATTTAATTGAGTCCGAT...
****Alignment****
sequence: gi|1162571919|ref|XM_020568695.1| PREDICTED: Prunus persica cold-
regulated 413 plasma membrane protein 2 (LOC18770198), transcript variant X2,
mRNA
length: 929
e value: 8.09915e-85
TGATCGATTCCGATATCAATGAGCTTAAAATGGCAACAATGAGGCTCATCAATGATGCTAGTATGCTCGGTCATT...
|||| |||| || ||||| || || || ||| | | || ||||| ||||| | || ||| ||| |...
TGATAAATTCAGACATCAATGATCTCAAGATTGCAGCCAAGAACTCATCAATGATGCCACTAAGCTTGGTGGGT...
****Alignment****
sequence: gi|1162571918|ref|XM_007202530.2| PREDICTED: Prunus persica cold-
regulated 413 plasma membrane protein 2 (LOC18770198), transcript variant X1,
mRNA
length: 811
e value: 8.09915e-85
TGATCGATTCCGATATCAATGAGCTTAAAATGGCAACAATGAGGCTCATCAATGATGCTAGTATGCTCGGTCATT...
|||| |||| || ||||| || || || ||| | | || ||||| ||||| | || ||| ||| |...
TGATAAATTCAGACATCAATGATCTCAAGATTGCAGCCAAGAACTCATCAATGATGCCACTAAGCTTGGTGGGT...
****Alignment****
sequence: gi|1229761331|ref|XM_022277554.1| PREDICTED: Momordica charantia cold-
regulated 413 plasma membrane protein 2-like (LOC111005887), mRNA
length: 850
e value: 2.82688e-84
ATTCCGATATCAATGAGCTTAAAATGGCAACAATGAGGCTCATCAATGATGCTAGTATGCTCGGTCATTACGGGT...
|||| ||||| ||||| ||||| ||| | | ||||| | | |||| | | ||||| | || ...
ATTCTGATATCAACGAGCTTAAAATTGCAGCCACGAGGCTTCTTGAACATGCCACCAAGCTCGGTGGAAAGGGCC...
****Alignment****
sequence: gi|764593175|ref|XM_004300526.2| PREDICTED: Fragaria vesca subsp.
vesca cold-regulated 413 plasma membrane protein 2 (LOC101313417), mRNA
length: 1105
e value: 3.44385e-83
ATGGGGAGAGAAATGAAGTACTTGGCCATGAAAACTGATCAATTGGCCGTGGCTAAT---ATGATCGATTCCGAT...
|||||| | || | || |||| ||||| ||||| | | ||| | | ||||| | || ...
ATGGGGAGGG---TGGACTATTTGGCTATGAAAACTGACCCAGTTGC---GGCCAATGAGTTGATGAATTCCGAT...
****Alignment****
sequence: gi|1861285698|gb|MN544658.1| Populus simonii x Populus nigra cold
temperature stress protein (WCOR413) mRNA, complete cds
length: 639
e value: 3.44385e-83
GCTAATATGATCGATTCCGATATCAATGAGCTTAAAATGGCAACAATGAGGCTCATCAATGATGCTAGTATGCTC...
||||| | || || |||| ||||| ||||| || | || | | ||||| ||||| || ||| ...
GCTAATTTAATTGAGTCCGATGTCAATGAGCTCAAGGTTGCTGCTAAGAACTCATCAAGGATGCCGCTAAGCTT...
****Alignment****
sequence: gi|1104507484|ref|XM_002274845.4| PREDICTED: Vitis vinifera cold-
regulated 413 plasma membrane protein 2 (LOC100267774), mRNA
length: 893

```



```

TGAACAGAAAAATGGGGAGAGAAATGAAGTACTTGGCCATGAAAACTGATCAATTGGCCGTGGCTAATATGATCGA...
|||| | ||||| |||| | || | |||| | ||||| ||||| | || | |||| | ||||| |...
TGAAACGAAAAATGGGGAGG---ATGGAGTATCTGGCTATGAAAACTGATCCC--GACCCAACCCAAT-TGATCAA...
****Alignment****
sequence: gi|1102738967|ref|XM_010256725.2| PREDICTED: Nelumbo nucifera cold-
regulated 413 plasma membrane protein 2 (LOC104595819), mRNA
length: 901
e value: 1.46436e-81
AAAATGGGGAGAGAAATGAAGTACTTGGCCATGAAAACTGATCAATTGGCCGTGGCTAATATGATCGATTCCGAT...
||||||| || |||| | ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ...
AAAATGGGGAGG---ATTCAGTATCTGGCCATGAAAACTGATCCGATGACAACCG---AGTTGATTAGTTCCGAC...

```

```

[ ]: # esearch based on what info i want to query from db and get idList
# efetch from db(protein, snp,nucleotide,pubmed,structure) based on
→ idList(id=', '.join(PD1_snp_list=record['idList'])) to download specific info
→ such as seq, source etc with specified rettype(fasta, uilist, gb, xml, acc),
→ with retmode(text, xml)

```