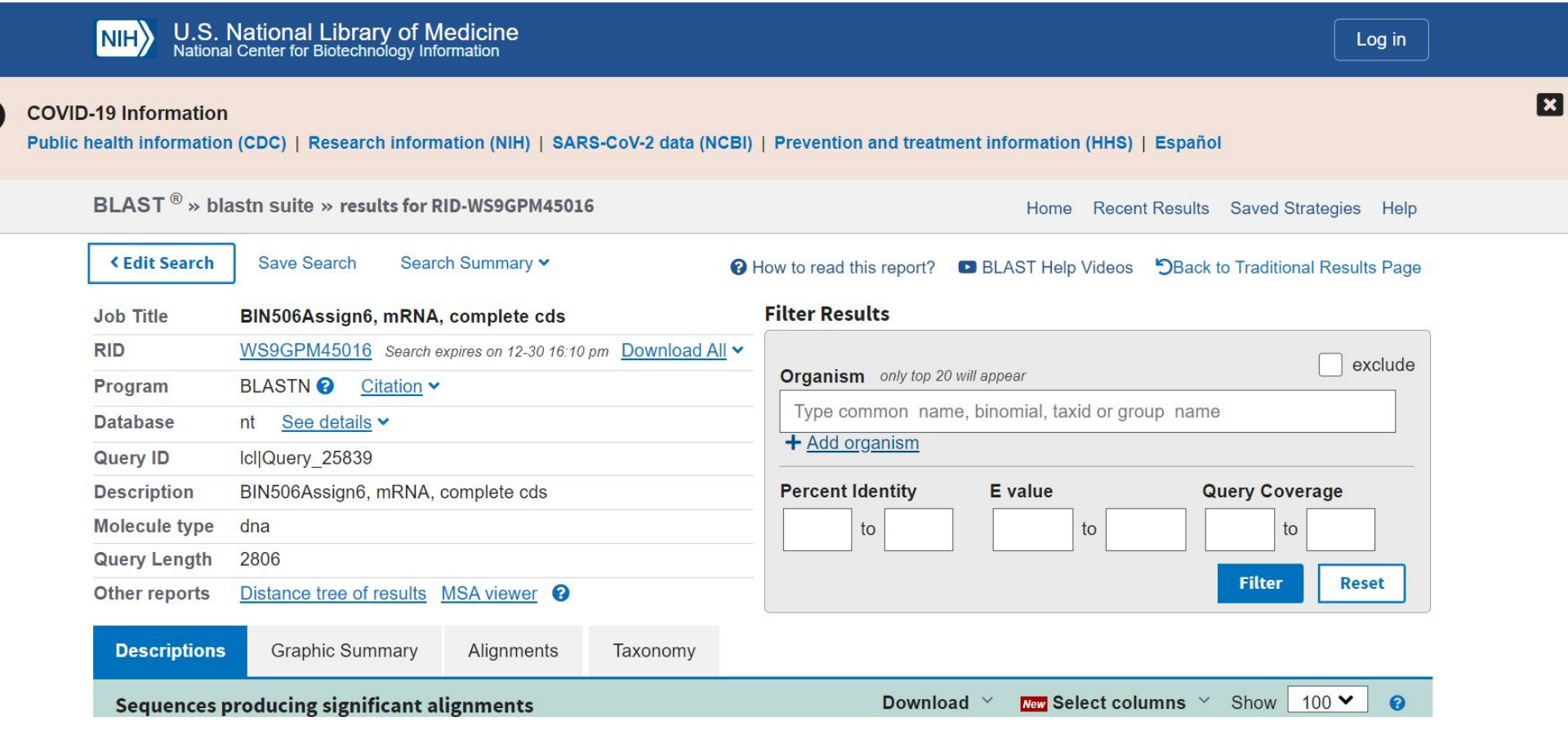
- **Uploading your assignment as a PDF is mandatory. The system will only accept a single PDF file and won't accept anything else or more than one file.**

1) Can you find the identity of the sequence given on page 2?
    a) Explain your criteria.
    b) Name the organism and the protein.
2) Find the orthologs of this protein in NCBI. Add a screenshot of the results page (the top of the page is enough).
3) In how many primates the protein is observed? List the name of organisms and the accession number of their proteins.
4) In which primate there is a missing sequence observed in MSA analysis? (You can do this with COBALT on NCBI)
    a) Name the primate.
    b) Submit the MSA and the missing sequence.

first of all mrna seq. fasta, it was translated into blastn and looked at which DNA sequences it matched.



The highest percent identity came out with an mRNA sequence and a complementary DNA sequence of this sequence, that is, a gene belonging to the protein human adam metallopeptise domain 10 sequence.

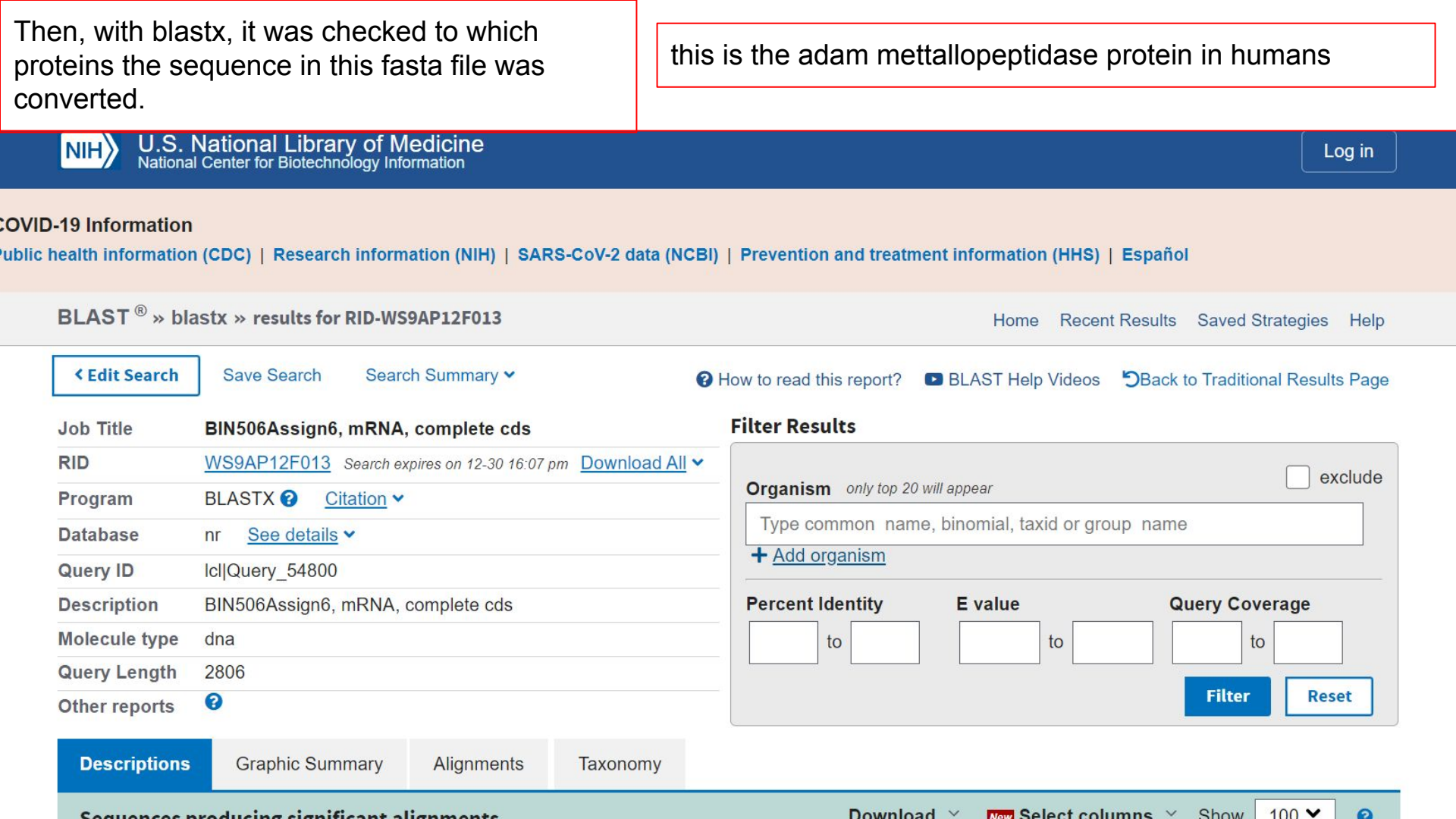
Sequences producing significant alignments Download New Select columns Show 100

select all *100 sequences selected* GenBank Graphics Distance tree of results New MSA Viewer

Description	Scientific Name	Max Score	Total Score	Query Cover	E value	Per. Ident	Acc. Len	Accession
Homo sapiens cDNA clone IMAGE:9052453	Homo sapiens	5182	5182	100%	0.0	100.00%	2815	BC143935.1
Homo sapiens ADAM metallopeptidase domain 10, mRNA (cDNA clone MGC:161531 IMAGE:8991969), co…	Homo sapiens	5182	5182	100%	0.0	100.00%	2806	BC126253.1
Homo sapiens ADAM10 (ADAM10) mRNA, complete cds	Homo sapiens	5057	5057	100%	0.0	99.05%	3410	AF009615.1
PREDICTED: Pan troglodytes ADAM metallopeptidase domain 10 (ADAM10), transcript variant X1, mRNA	Pan troglodytes	4951	4951	100%	0.0	98.45%	4830	XM_001172405.4
PREDICTED: Pan paniscus ADAM metallopeptidase domain 10 (ADAM10), transcript variant X1, mRNA	Pan paniscus	4946	4946	100%	0.0	98.41%	5020	XM_003827893.3
PREDICTED: Hylobates moloch disintegrin and metalloproteinase domain-containing protein 10 (LOC1164…	Hylobates moloch	4889	4889	100%	0.0	98.06%	4824	XM_032146673.1
PREDICTED: Nomascus leucogenys ADAM metallopeptidase domain 10 (ADAM10), transcript variant X1,…	Nomascus leuc…	4878	4878	100%	0.0	97.99%	5714	XM_003267037.2
PREDICTED: Hylobates moloch disintegrin and metalloproteinase domain-containing protein 10 (LOC1164…	Hylobates moloch	4867	4867	99%	0.0	98.02%	4676	XM_032146816.1
PREDICTED: Chlorocebus sabaeus ADAM metallopeptidase domain 10 (ADAM10), transcript variant X1,…	Chlorocebus sa…	4854	4854	100%	0.0	97.81%	4839	XM_008016455.2
PREDICTED: Rhinopithecus roxellana ADAM metallopeptidase domain 10 (ADAM10), mRNA	Rhinopithecus r…	4846	4846	100%	0.0	97.78%	4840	XM_010374256.2
PREDICTED: Macaca mulatta ADAM metallopeptidase domain 10 (ADAM10), transcript variant X1, mRNA	Macaca mulatta	4846	4846	100%	0.0	97.78%	5152	XM_001097016.4
PREDICTED: Mandrillus leucophaeus ADAM metallopeptidase domain 10 (ADAM10), mRNA	Mandrillus leuco…	4846	4846	100%	0.0	97.78%	4838	XM_011983181.1
PREDICTED: Cercocebus atys ADAM metallopeptidase domain 10 (ADAM10), transcript variant X1, mRNA	Cercocebus atys	4841	4841	100%	0.0	97.74%	4832	XM_012092950.1
PREDICTED: Macaca nemestrina ADAM metallopeptidase domain 10 (ADAM10), transcript variant X1, mR…	Macaca nemest…	4841	4841	100%	0.0	97.74%	3613	XM_011754544.1
PREDICTED: Theropithecus gelada ADAM metallopeptidase domain 10 (ADAM10), transcript variant X1,…	Theropithecus g…	4837	4837	100%	0.0	97.71%	4839	XM_025389930.1
PREDICTED: Rhinopithecus bieti ADAM metallopeptidase domain 10 (ADAM10), mRNA	Rhinopithecus b…	4835	4835	100%	0.0	97.71%	4823	XM_017896388.1
Homo sapiens ADAM metallopeptidase domain 10 (ADAM10), transcript variant 1, mRNA	Homo sapiens	4828	4828	95%	0.0	99.04%	11158	NM_001110.4
PREDICTED: Trachypithecus francoisi ADAM metallopeptidase domain 10 (ADAM10), transcript variant X1…	Trachypithecus f…	4819	4819	100%	0.0	97.60%	4851	XM_033189966.1
PREDICTED: Colobus angolensis palliatus ADAM metallopeptidase domain 10 (ADAM10), mRNA	Colobus angole…	4813	4813	100%	0.0	97.56%	4838	XM_011940505.1

Then, with blastx, it was checked to which proteins the sequence in this fasta file was converted.

this is the adam mettallopeptidase protein in humans



Sequences producing significant alignments

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GenPept Graphics

Description	Scientific Name	Max Score	Total Score	Query Cover	E value	Per. Ident	Acc. Len	Accession
ADAM10 protein [Homo sapiens]	Homo sapiens	1051	1051	53%	0.0	100.00%	512	AAI26254.1
Disintegrin and metalloproteinase domain-containing protein 10 [Macaca mulatta]	Macaca mulatta	1034	1429	77%	0.0	100.00%	750	EHH27354.1
disintegrin and metalloproteinase domain-containing protein 10 [Rhinopithecus roxellana]	Rhinopithecus r…	1033	1429	77%	0.0	100.00%	748	XP_010372558.1
disintegrin and metalloproteinase domain-containing protein 10 isoform 1 preproprotein [Homo sapiens]	Homo sapiens	1033	1429	77%	0.0	100.00%	748	NP_001101.1
disintegrin and metalloproteinase domain-containing protein 10 precursor [Pongo abelii]	Pongo abelii	1033	1428	77%	0.0	99.80%	748	NP_001124567.1
disintegrin and metalloproteinase domain-containing protein 10 isoform X1 [Papio anubis]	Papio anubis	1032	1379	70%	0.0	99.80%	710	XP_031517134.1
PREDICTED: disintegrin and metalloproteinase domain-containing protein 10 [Colobus angolensis palliatus]	Colobus angole…	1031	1426	77%	0.0	99.80%	748	XP_011795895.1
ADAM metallopeptidase domain 10 [Phyllostomus discolor]	Phyllostomus di…	1027	1027	53%	0.0	97.60%	512	KAF6128563.1
disintegrin and metalloproteinase domain-containing protein 10 isoform X1 [Microcebus murinus]	Microcebus muri…	1024	1411	77%	0.0	98.58%	748	XP_012638488.1
ADAM metallopeptidase domain 10 [Rhinolophus ferrumequinum]	Rhinolophus ferr…	1024	1024	53%	0.0	97.20%	512	KAF6350717.1
ADAM metallopeptidase domain 10 [Molossus molossus]	Molossus molos…	1023	1023	53%	0.0	97.20%	512	KAF6498799.1
disintegrin and metalloproteinase domain-containing protein 10 isoform X1 [Aotus nancymaae]	Aotus nancymaae	1021	1415	77%	0.0	99.19%	747	XP_012298550.1
disintegrin and metalloproteinase domain-containing protein 10 [Marmota flaviventris]	Marmota flavive…	1021	1404	77%	0.0	98.38%	748	XP_027781569.1
disintegrin and metalloproteinase domain-containing protein 10 [Tupaia chinensis]	Tupaia chinensis	1021	1412	77%	0.0	98.38%	748	XP_014437339.1
disintegrin and metalloproteinase domain-containing protein 10 [Saimiri boliviensis boliviensis]	Saimiri boliviensi…	1021	1412	77%	0.0	99.19%	747	XP_003929028.1
disintegrin and metalloproteinase domain-containing protein 10 isoform X1 [Physeter catodon]	Physeter catodon	1020	1400	77%	0.0	98.38%	748	XP_007115945.1
disintegrin and metalloproteinase domain-containing protein 10 isoform X1 [Globicephala melas]	Globicephala m…	1020	1402	77%	0.0	98.17%	748	XP_030734678.1
disintegrin and metalloproteinase domain-containing protein 10 [Delphinapterus leucas]	Delphinapterus l…	1019	1399	77%	0.0	98.17%	748	XP_022435326.1
disintegrin and metalloproteinase domain-containing protein 10 isoform X1 [Tursiops truncatus]	Tursiops truncatus	1019	1401	77%	0.0	97.97%	748	XP_019802721.1

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Was this helpful?

ADAM10 – ADAM metallopeptidase domain 10

Homo sapiens (human)

Also known as: AD10, AD18, CD156c, CDw156, HsT18717, MADM, RAK, kuz

RefSeq transcripts (3) RefSeq proteins (3) RefSeqGene (1) PubMed (367)

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(("Homo sapiens"[Org
sapiens[All Fields])
Fields] AND metallop
AND domain[All Field
Fields]) AND alive[p
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Search

Recent activity

Homo sapiens ADAM
10 AND (alive[prop])

Enter taxonomic name

- jawed vertebrates
  - birds
  - turtles
  - alligators and others
  - lizards
  - mammals
  - amphibians
  - coelacanths
  - bony fishes
  - cartilaginous fishes

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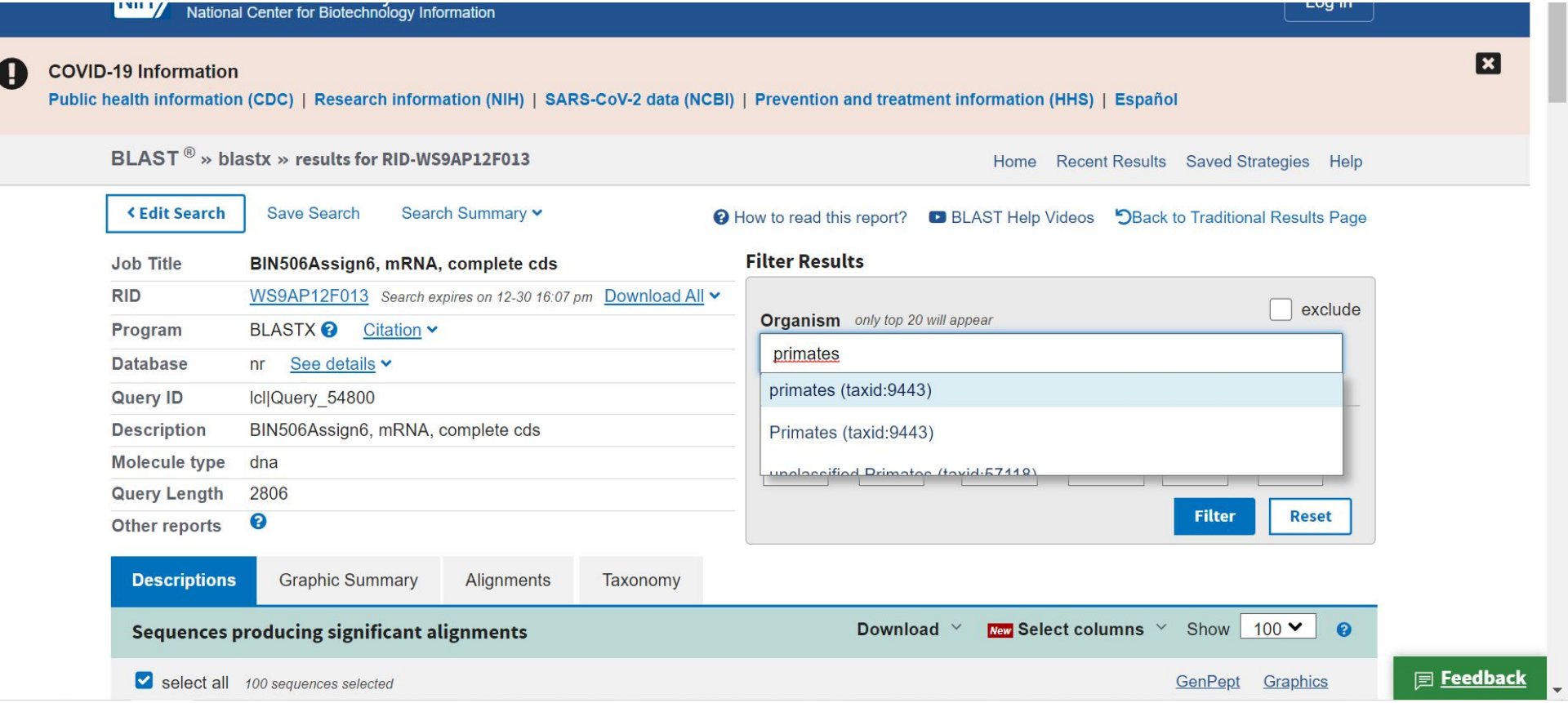
Species	Gene	Architecture	aa
Homo sapiens human	ADAM10 ADAM metallopeptidase domain 10		748
Mus musculus house mouse	Adam10 a disintegrin and metallopeptidase domain 10		749
Rattus norvegicus Norway rat	Adam10 ADAM metallopeptidase domain 10		749
Bos taurus cattle	ADAM10 ADAM metallopeptidase domain 10		748
Gallus gallus	ADAM10		74

Feedback

12:19

filtering primates



accessionn numbers for 14 proteins

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Descriptions | Graphic Summary | Alignments | Taxonomy

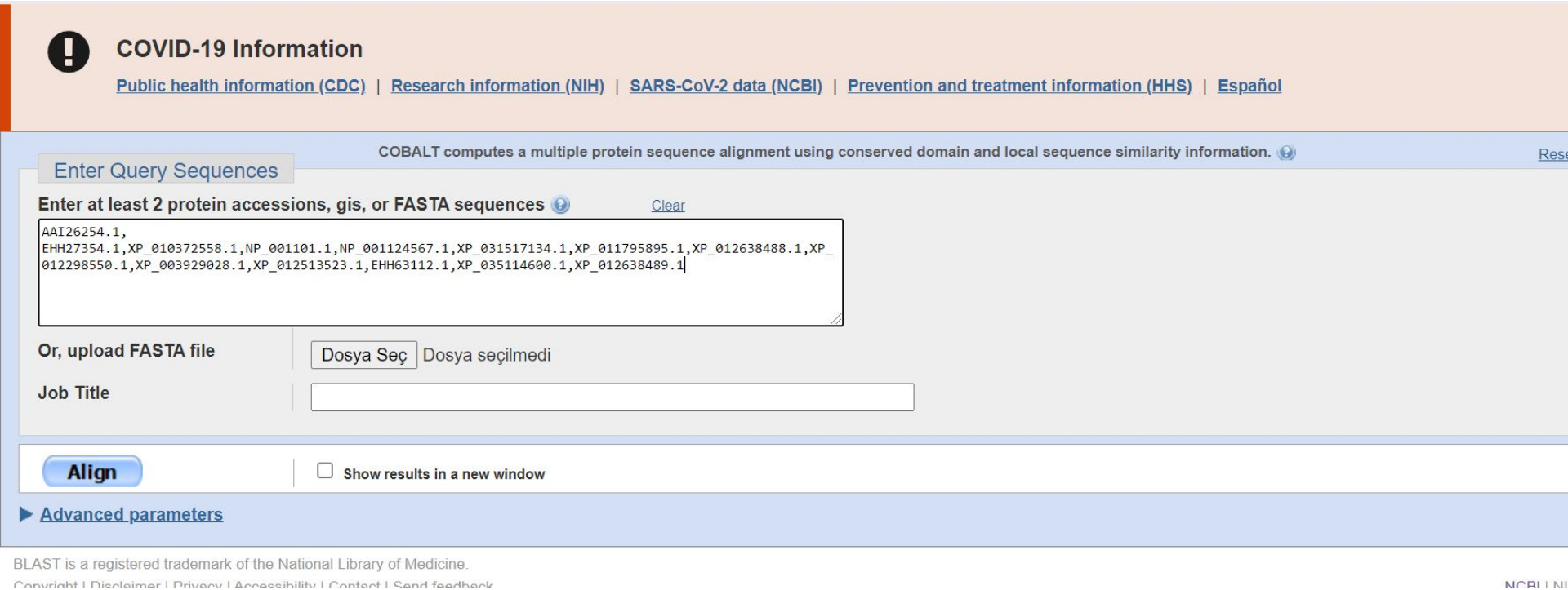
Sequences producing significant alignments Download | New Select columns | Show 100

select all *14 sequences selected* GenPept Graphics

Description	Scientific Name	Max Score	Total Score	Query Cover	E value	Per. Ident	Acc. Len	Accession
ADAM10 protein [Homo sapiens]	Homo sapiens	1051	1051	53%	0.0	100.00%	512	AAI26254.1
Disintegrin and metalloproteinase domain-containing protein 10 [Macaca mulatta]	Macaca mulatta	1034	1429	77%	0.0	100.00%	750	EHH27354.1
disintegrin and metalloproteinase domain-containing protein 10 [Rhinopithecus roxellana]	Rhinopithecus roxell...	1033	1429	77%	0.0	100.00%	748	XP_010372558.1
disintegrin and metalloproteinase domain-containing protein 10 isoform 1 preproprotein [Homo sapiens]	Homo sapiens	1033	1429	77%	0.0	100.00%	748	NP_001101.1
disintegrin and metalloproteinase domain-containing protein 10 precursor [Pongo abelii]	Pongo abelii	1033	1428	77%	0.0	99.80%	748	NP_001124567.1
disintegrin and metalloproteinase domain-containing protein 10 isoform X1 [Papio anubis]	Papio anubis	1032	1379	70%	0.0	99.80%	710	XP_031517134.1
PREDICTED: disintegrin and metalloproteinase domain-containing protein 10 [Colobus angolensis palliat...	Colobus angolensis ...	1031	1426	77%	0.0	99.80%	748	XP_011795895.1
disintegrin and metalloproteinase domain-containing protein 10 isoform X1 [Microcebus murinus]	Microcebus murinus	1024	1411	77%	0.0	98.58%	748	XP_012638488.1
disintegrin and metalloproteinase domain-containing protein 10 isoform X1 [Aotus nancymaae]	Aotus nancymaae	1021	1415	77%	0.0	99.19%	747	XP_012298550.1
disintegrin and metalloproteinase domain-containing protein 10 [Saimiri boliviensis boliviensis]	Saimiri boliviensis bo...	1021	1412	77%	0.0	99.19%	747	XP_003929028.1
PREDICTED: disintegrin and metalloproteinase domain-containing protein 10 [Propithecus coquereli]	Propithecus coquereli	1018	1405	77%	0.0	97.97%	748	XP_012513523.1
Disintegrin and metalloproteinase domain-containing protein 10 [Macaca fascicularis]	Macaca fascicularis	1016	1412	77%	0.0	100.00%	748	EHH63112.1
disintegrin and metalloproteinase domain-containing protein 10 isoform X1 [Callithrix jacchus]	Callithrix jacchus	1011	1406	77%	0.0	98.78%	746	XP_035114600.1
disintegrin and metalloproteinase domain-containing protein 10 isoform X2 [Microcebus murinus]	Microcebus murinus	1008	1395	77%	0.0	98.77%	741	XP_012638489.1

Feedback

COBALT for the comparing the seqs in proteins for 14 species



in homo sapines, a missing sequence observed in MSA

in papio anubus a small deletions. observed

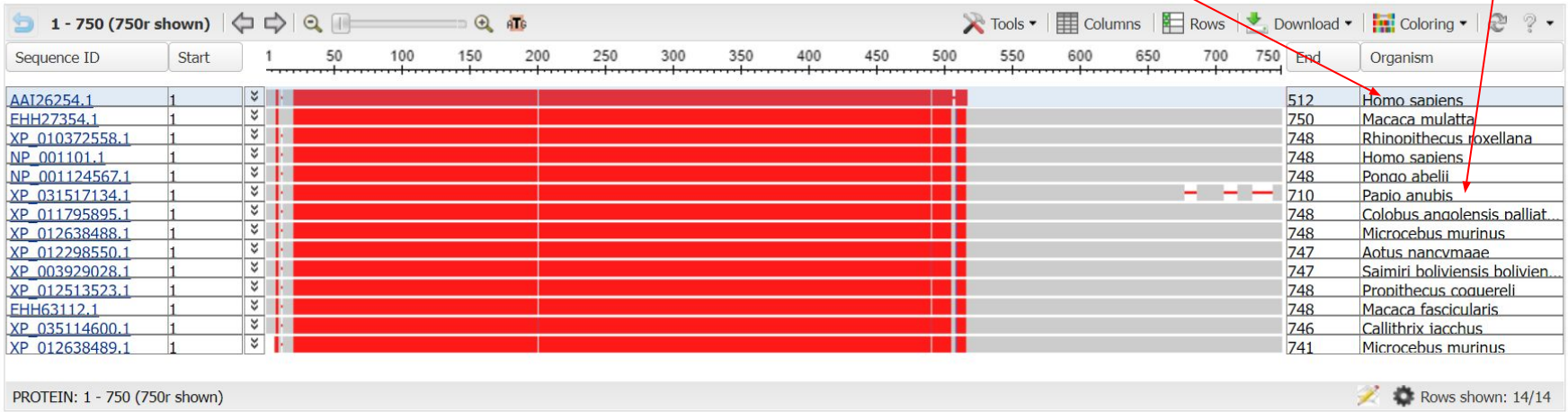
COVID-19 Information

Public health information (CDC) | Research information (NIH) | SARS-CoV-2 data (NCBI) | Prevention and treatment information (HHS) | Español

Phylogenetic Tree | Edit and Resubmit | ▸Download

- Cobalt RID WSA96W36212 (14 seqs)

▼ Graphical Overview



Accession	Description	Links
AAI26254.1	ADAM10 protein [Homo sapiens]	Related Information
EHH27354.1	Disintegrin and metalloproteinase domain-containing protein 10 [Macaca mulatta]	
XP_010372558.1	disintegrin and metalloproteinase domain-containing protein 10 [Rhinopithecus roxellana]	Related Information
NP_001101.1	disintegrin and metalloproteinase domain-containing protein 10 isoform 1 preproprotein [Homo sapiens]	Related Information
NP_001124567.1	disintegrin and metalloproteinase domain-containing protein 10 precursor [Pongo abelii]	Related Information
XP_031517134.1	disintegrin and metalloproteinase domain-containing protein 10 isoform X1 [Papio anubis]	Related Information
XP_011795895.1	PREDICTED: disintegrin and metalloproteinase domain-containing protein 10 [Colobus angolensis palliatus]	Related Information
XP_012638488.1	disintegrin and metalloproteinase domain-containing protein 10 isoform X1 [Microcebus murinus]	Related Information
XP_012298550.1	disintegrin and metalloproteinase domain-containing protein 10 isoform X1 [Aotus nancymaae]	Related Information
XP_003929028.1	disintegrin and metalloproteinase domain-containing protein 10 [Saimiri boliviensis boliviensis]	Related Information
XP_012513523.1	PREDICTED: disintegrin and metalloproteinase domain-containing protein 10 [Propithecus coquereli]	Related Information
EHH63112.1	Disintegrin and metalloproteinase domain-containing protein 10 [Macaca fascicularis]	
XP_035114600.1	disintegrin and metalloproteinase domain-containing protein 10 isoform X1 [Callithrix jacchus]	
XP_012638489.1	disintegrin and metalloproteinase domain-containing protein 10 isoform X2 [Microcebus murinus]	Related Information

Alignments Select All Re-align Mouse over the sequence identifer for sequence title

Alignments Select All Re-align Mouse over the sequence identifer for sequence title

View Format: Compact Conservation Setting: 2 Bits

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AAI26254.1        1   MVLLRVLILLL--SWAAGMGGQYGNPLNKYIRHYEGLSYNVDSLHQKHQRAKRAVSHEDQFLRLDFHAHGRHFNLRMKRD   78
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NP_001101.1       1   MVLLRVLILLL--SWAAGMGGQYGNPLNKYIRHYEGLSYNVDSLHQKHQRAKRAVSHEDQFLRLDFHAHGRHFNLRMKRD   78
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XP_031517134.1    1   MVLLRVLILLL--SWAAGMGGQYGNPLNKYIRHYEGLSYNVDSLHQKHQRAKRAVSHEDQFLRLDFHAHGRHFNLRMKRD   78
XP_011795895.1    1   MVLLRVLILLL--SWAAGMGGQYGNPLNKYIRHYEGLSYNVDSLHQKHQRAKRAVSHEDQFLRLDFHAHGRHFNLRMKRD   78
XP_012638488.1    1   MVLLRVLILLL--SWAAGLGGQYGNPLNKYIRHYEGLTYNVDSLHQKHQRAKRAVSHEDQFLRLDFHAHGRHFNLRMKRD   78
XP_012298550.1    1   MVLLRVLILLL--SWAAGMGGQYGNPLNKYIRHYEGLSYNVDSLHQKHQRAKRAVSHEDQFLRLDFHAHGRHFNLRMKRD   78
XP_003929028.1    1   MVLLRVLILLL--SWAAGMGGQYGNPLNKYIRHYEGLSYNVDSLHQKHQRAKRAVSHEDQFLRLDFHAHGRHFNLRMKRD   78
XP_012513523.1    1   MVLLRVLILLL--SWAAGLGGQYGNPLNKYIRHYEGLSYNVDSLHQKHQRAKRAVSHEDQFLRLDFHAHGRHFNLRMKRD   78
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XP_035114600.1    1   MVLLRVLILLL--SWAAGMGGQYGNPLNKYIRHYEGLSYNVDSLHQKHQRAKRAVSHEDQFLHLDFHAHGRHFNLRMKRD   78
XP_012638489.1    1   -------MCPV--FGERSRDGQYGNPLNKYIRHYEGLTYNVDSLHQKHQRAKRAVSHEDQFLRLDFHAHGRHFNLRMKRD   71

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NP_001124567.1   79   TSLFSDEFKVETSNKVLDYDTSHIYTGHIYGEEGSFSHGSVIDGRFEGFIQTRGGTFYVEPAERYIKDRTLPFHSVIYHE  158
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some small deletions

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[illegible]	481	CKDECCFDANQPEGRKCKLKPGKQCSPSQGPCCTAQCAFKSKSEKCRDDSDCAREGICNGFTALCPASDPKPNFTDCNRH	560
XP_010372558.1	479	[illegible]	558
NP_001101.1	479	CKDECCFDANQPEGRKCKLKPGKQCSPSQGPCCTAQCAFKSKSEKCRDDSDCAREGICNGFTALCPASDPKPNFTDCNRH	558
NP_001124567.1	479	CKDECCFDANQPEGRKCKLKPGKQCSPSQGPCCTAQCAFKSKSEKCRDDSDCAREGICNGFTALCPASDPKPNFTDCNRH	558
XP_031517134.1	479	CKDECCFDANQPEGRKCKLKPGKQCSPSQGPCCTAQCAFKSKSEKCRDDSDCAREGICNGFTALCPASDPKPNFTDCNRH	558
XP_011795895.1	479	CKDECCFDANQPEGRKCKLKPGKQCSPSQGPCCTAQCAFKSKSEKCRDDSDCAREGICNGFTALCPASDPKPNFTDCNRH	558
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XP_012298550.1	479	CKDECCFDANQ-EGKKCKLKPGKQCSPSQGPCCTAQCAFKSKSEKCRDDSDCAREGICNGFTALCPASDPKPNFTDCNRH	557
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XP_012513523.1	479	CKDECCFDANQPEGKKCKLKPGKECSPSQGPCCTAQCAFKSKYEKCRDDSDCAREGICNGVTALCPASDPKPNFTDCNRH	558
EHH63112.1	479	CKDECCFDANQPEGRKCKLKPGKQCSPSQGPCCTAQCAFKSKSEKCRDDSDCAREGICNGFTALCPASDPKPNFTDCNRH	558
XP_035114600.1	478	CKDECCFDANQ-EGKKCKLKPGKQCSPSQGPCCTAQCAFKSKSEKCRDDSDCAREGVCNGFTALCPASDPKPNFTDCNRH	556
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AAI26254.1		----------		
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NP_001101.1	559	TQVCINGQCAGSICEKYGLEECTCASSDGKDDKELCHVCCMKKMDPSTCASTGSVQWSRHFSGRTITLQPGSPCNDFRGY	638
NP_001124567.1	559	TQVCINGQCAGSICEKYGLEECTCASSDGKDDKELCHVCCMKKMDPSTCASTGSVQWSRHFSGRTITLQPGSPCNDFRGY	638
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XP_011795895.1	559	TQVCINGQCAGSICEKYGLEECTCASSDGKDDKELCHVCCMKKMDPSTCASTGSVQWSRHFSGRTITLQPGSPCNDFRGY	638
XP_012638488.1	559	TQVCINGQCAGSICEKYGLEECTCASSDGKDDKELCHVCCMKKMEPSTCASTGSVQWSKHFSGRTITLQPGSPCNDFRGY	638
XP_012298550.1	558	TQVCINGQCAGSICEKYGLEECTCASSDGKDDKELCHVCCMKKMDPSTCASTGSVQWSKHFSGRTITLQPGSPCNDFRGY	637
XP_003929028.1	558	TQVCINGQCAGSICEKYGLEECTCASSDGKDDKELCHVCCMKKMDPSTCASTGSVQWSKHFSGRTITLQPGSPCNDFRGY	637
XP_012513523.1	559	TQVCINGQCAGSICEKYGLEECTCASSDGKDDKELCHVCCMKKMEPSTCASTGSVQWNKHFSGRTITLQPGSPCNDFRGY	638
EHH63112.1	559	TQVCINGQCAGSICEKYGLEECTCASSDGKDDKELCHVCCMKKMDPSTCASTGSVQWSRHFSGRTITLQPGSPCNDFRGY	638
XP_035114600.1	557	TQVCINGQCAGSICEKYGLEECTCASSDGKDDKELCHVCCMKKMDPSTCASTGSVQWSRHFSGRTITLQPGSPCNDFRGY	636
XP_012638489.1	552	TQVCINGQCAGSICEKYGLEECTCASSDGKDDKELCHVCCMKKMEPSTCASTGSVQWSKHFSGRTITLQPGSPCNDFRGY	631

AAI26254.1		----------	
EHH27354.1	641	CDVFMRCRLVDADGPLARLKKAIFSPELYENIAEWIVAHWWAVLLMGIALIMLMAGFIKICSVHTPSSNPKLPPPKPLPG	720
XP_010372558.1	639	CDVFMRCRLVDADGPLARLKKAIFSPELYENIAEWIVAHWWAVLLMGIALIMLMAGFIKICSVHTPSSNPKLPPPKPLPG	718
NP_001101.1	639	CDVFMRCRLVDADGPLARLKKAIFSPELYENIAEWIVAHWWAVLLMGIALIMLMAGFIKICSVHTPSSNPKLPPPKPLPG	718
NP_001124567.1	639	CDVFMRCRLVDADGPLARLKKAIFSPELYENIAEWIVAHWWAVLLMGIALIMLMAGFIKICSVHTPSSNPKLPPPKPLPG	718
XP_031517134.1	639	CDVFMRCRLVDADGPLARLKKAIFSPELYENIAEWIV----------VSIVFIYKENLKWFHLNFT----------WPE	697
XP_011795895.1	639	CDVFMRCRLVDADGPLARLKKAIFSPELYENIAEWIVAHWWAVLLMGIALIMLMAGFIKICSVHTPSSNPKLPPPKPLPG	718
XP_012638488.1	639	CDVFMRCRLVDADGPLARLKKAIFSPELYENIAEWIVAHWWAVLLMGIALIMLMAGFIKICSVHTPSSNPKLPPPKPLPG	718
XP_012298550.1	638	CDVFMRCRLVDADGPLARLKKAIFSPELYENIAEWIVAHWWAVLLMGIALIMLMAGFIKICSVHTPSSNPKLPPPKPLPG	717
XP_003929028.1	638	CDVFMRCRLVDADGPLARLKKAIFSPELYENIAEWIVAHWWAVLLMGIALIMLMAGFIKICSVHTPSSNPKLPPPKPLPG	717
XP_012513523.1	639	CDVFMRCRLVDADGPLARLKKAIFSPELYENIAEWIVAHWWAVLLMGIALIMLMAGFIKICSVHTPSSNPKLPPPKPLPG	718
EHH63112.1	639	CDVFMRCRLVDADGPLARLKKAIFSPELYENIAEWIVAHWWAVLLMGIALIMLMAGFIKICSVHTPSSNPKLPPPKPLPG	718
XP_035114600.1	637	CDVFMRCRLVDADGPLARLKKAIFSPELYENIAEWIVAHWWAVLLMGIALIMLMAGFIKICSVHTPSSNPKLPPPKPLPG	716
XP_012638489.1	632	CDVFMRCRLVDADGPLARLKKAIFSPELYENIAEWIVAHWWAVLLMGIALIMLMAGFIKICSVHTPSSNPKLPPPKPLPG	711

AAI26254.1			----------	
EHH27354.1	721	TLKRRRPPQPIQQPQRQRPRESYQMGHMRR		750
XP_010372558.1	719	TLKRRRPPQPVQQPQRQRPRESYQMGHMRR		748
NP_001101.1	719	TLKRRRPPQPIQQPQRQRPRESYQMGHMRR		748
NP_001124567.1	719	TLKRRRPPQPIQQPQRQRPRESYQMGHMRR		748
XP_031517134.1	698	VIKVMRK----------QLNYLY-		710
XP_011795895.1	719	TLKRRRPPQPVQQPQRQRPRESYQMGHMRR		748
XP_012638488.1	719	TLKRRRPPQPIQQPQRQRPRESYQMGHMRR		748
XP_012298550.1	718	TLKRRRPPQPIQQPQRQRPRESYQMGHMRR		747
XP_003929028.1	718	TLKRRRPPQPIQQPQRQRPRESYQMGHMRR		747
XP_012513523.1	719	TLKRRRPPQPIQQPQRQRPRESYQMGHMRR		748
EHH63112.1	719	TLKRRRPPQPIQQPQRQRPRESYQMGHMRR		748
XP_035114600.1	717	TLKRRRPPQPIQQPQRQRPRESYQMGHMRR		746
XP_012638489.1	712	TLKRRRPPQPIQQPQRQRPRESYQMGHMRR		741