

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Species	Sequence	Position
Homo_sapiens	-----	
Pan_troglodytes	-----	
Macaca_mulatta	-----	
Callithrix_jacchus	-----	
Bos_taurus	-----	
Equus_caballus	-----	
Pteropus_alecto	MATIPIIIVIVVITTVPIIIVITSTIIITIIITIVPSSPSPLSPSLPWLPSPPSLVGGCRTW	60
Mus_musculus	-----	
Ornithorhynchus_anatinus	-----	
Pavo_muticus	-----	
Pavo_cristatus	-----	
Gallus_gallus	-----	
Anas_platyrhynchos	-----	
Chelonia_mydas	-----	
Xenopus_tropicalis	-----	
Latimeria_chalumnae	-----	
Rhinatrema_bivittatum	-----	
	1.....10.....20.....30.....40.....50.....60	

Species	Sequence	Position
Homo_sapiens	MAKR---LCAGSALCVRGPRGPAPLL-----	23
Pan_troglodytes	MAKR---LCAGSALCVRGPRGPAPLL-----	23
Macaca_mulatta	MAKR---LCAGSALCVRGPRGPAPLL-----	23
Callithrix_jacchus	MAKRGVPLCPGSARCLRGFPWGPAPLL-----	26
Bos_taurus	MAKPGARPRD-----SWGAPAPLL-----	18
Equus_caballus	MAKPGARHFAGSARCAGGPRGPAPLL-----	26
Pteropus_alecto	RCSPPGEAPASSQISYFWARQQADLRRIVWVKGTASNQDTSFLTGGAGPRDLGTAGPAPS	120
Mus_musculus	MAKRGGQLCAGSAPGALGPRSPAPRP-----	26
Ornithorhynchus_anatinus	MAKG---ASAGRRRRRLGLSHLLRL-----	23
Pavo_muticus	MARAAERG-----LR--ILVLLLG-----	17
Pavo_cristatus	MARAAERG-----LR--ILVLLLG-----	17
Gallus_gallus	MARAAERG-----LR--LLVLLLG-----	17
Anas_platyrhynchos	MAREAEEGGERLGRVLRGLLGILVLL-----	26
Chelonia_mydas	MARREMDADGLPGTLVS--LQLLLLL-----	24
Xenopus_tropicalis	MSVPG-----AACLLLL-----	12
Latimeria_chalumnae	-----	
Rhinatrema_bivittatum	MWALSG-----RGALLLA-----	13

Species	Sequence	Position
Homo sapiens	LVGLALLG	130
Pan troglodytes	LVGLALLG	130
Macaca mulatta	LVGLALLG	130
Callithrix jacchus	LVGLALLG	130
Bos taurus	LAGLALLG	130
Equus caballus	LAGLALLG	130
Pteropus alecto	PALDYEHHGIGTGVQPLG	130
Mus musculus	LLLLLAGLALVG	130
Ornithorhynchus anatinus	LVAGLG	130
Pavo muticus	LGAGLPA	130
Pavo cristatus	LGAGLPA	130
Gallus gallus	LGAGLPA	130
Anas platyrhynchos	VVPPAAA	130
Chelonia mydas	LAAALPAG	130
Xenopus tropicalis	VPLGLVLA	130
Latimeria chalumnae	LLGA	130
Rhinatrema bivittatum	LLGA	130

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Homo_sapiens          NLAEGARIAASATCGEEA---PARGSPRPTEDLYCKLVGGPVAGGDPNQTIRGQYCDICT 107
Pan_troglodytes       NLAEGARIAASATCGEEA---PARGSPRPTEDLYCKLVGGPVAGGDPNQTIRGQYCDICT 107
Macaca_mulatta        NLAEGARIAASATCGEEA---PARGSPRPTEDLYCKLVGGPVAGGDPNQTIRGQYCDICT 107
Callithrix_jacchus    NLAEGARIAASATCGEEA---PARGSPRPTEDLYCKLVGGPVAGGDPNQTIRGQYCDICT 110
Bos_taurus            NLAEGARIAASATCGEEA---PARGAPRPTEDLYCKLVGGPVAGGDPNQTIRGQYCDICT 101
Equus_caballus        NLAEGARIAASATCGEEA---PARGVPRPTEDLYCKLVGGPVAGGDPNQTIRGQYCDICT 110
Pteropus_alecto       NLAEGARIAASATCGEEA---PARGTPRPTEDLYCKLVGGPVAGGDPNQTIRGQYCDICT 237
Mus_musculus          NLAEGARITASATCGEEA---PTRSVSRPTEDLYCKLVGGPVAGGDPNQTIRGQYCDICT 112
Ornithorhynchus_anatinus NLAEGTQISASATCGEEA---APRGPARPTEDLYCKLVGGPVAGGDPNQTIRGQYCDICT 109
Pavo_muticus          NLAEGTRISASATCGEE--AAGAAGSRRAVEDLYCKLVGGPLAGGDPNQTIRGQYCDICS 104
Pavo_cristatus        NLAEGTRISASATCGEE--AAGAAGSRRAVEDLYCKLVGGPLAGGDPNQTIRGQYCDICS 104
Gallus_gallus         NLAEGTRISASATCGEE--TAGTSGSRRAVEDLYCKLVGGPLAGGDPNQTIRGQYCDICS 104
Anas_platyrhynchos    NLAEGTRISATATCGEE--AVG-AGSRRAVEDLYCKLVGGPLAGGDPNQTIRGQYCDICS 112
Chelonia_mydas        NLAESTRISASATCGEERGAAGGRRSPRAVEDLYCKLVGGPVAGGDPNQTIRGQYCDICT 114
Xenopus_tropicalis    NLAEGTRISASATCGEG-----PDGRPMEDLYCKLVGGPVSG-DPSQTIRGQYCDICM 90
Latimeria_chalumnae   -----
Rhinatrema_bivittatum NLAEGTRIWATATCGEE-----EGGRALPDLYCKLVGGPAAG-DPGQTIRGQYCDVCT 91
.....190.....200.....210.....220.....230.....240

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**                                     *:*****:***
Homo_sapiens          AANSNKAHPASNAIDGTERWWQSPPLSRGLEYNVNTLDLGQVFHVAYVLIKFANSRPR 167
Pan_troglodytes       AANSNKAHPASNAIDGTERWWQSPPLSRGLEYNVNTLDLGQVFHVAYVLIKFANSRPR 167
Macaca_mulatta        AANSNKAHPASNAIDGTERWWQSPPLSRGLEYNVNTLDLGQVFHVAYVLIKFANSRPR 167
Callithrix_jacchus    AANSNKAHPASNAIDGTERWWQSPPLSRGLEYNVNTLDLGQVFHVAYVLIKFANSRPR 170
Bos_taurus            AANSNKAHPVSNAIDGTERWWQSPPLSRGLEYNVNTLDLGQVFHVAYVLIKFANSRPR 161
Equus_caballus        AANSNKAHPVSNAIDGTERWWQSPPLSRGLEYNVNTLDLGQVFHVAYVLIKFANSRPR 170
Pteropus_alecto       AANSNKAHPVSNAIDGTERWWQSPPLSRGLEYNVNTLDLGQVFHVAYVLIKFANAPR 297
Mus_musculus          AANSNKAHPVSNAIDGTERWWQSPPLSRGLEYNVNTLDLGQVFHVAYVLIKFANSRPR 172
Ornithorhynchus_anatinus AANSNKAHPVTNAIDGTERWWQSPPLSRGLEYNVNTLDLGQVFHVAYVLIKFANSRPR 169
Pavo_muticus          SANSNKAHPITNAIDGTERWWQSPPLSRGLEFNQVNTLDLGQVFHVAYVLIKFANSRPR 164
Pavo_cristatus        SANSNKAHPITNAIDGTERWWQSPPLSRGLEFNQVNTLDLGQVFHVAYVLIKFANSRPR 164
Gallus_gallus         SANSNKAHPITNAIDGTERWWQSPPLSRGLEFNQVNTLDLGQVFHVAYVLIKFANSRPR 172
Anas_platyrhynchos    SANSNKAHPITNAIDGTERWWQSPPLSRGLEFNQVNTLDLGQVFHVAYVLIKFANSRPR 174
Chelonia_mydas        SMNSNKAHPITNAIDGTERWWQSPPLSRGLEFNQVNTLDLGQVFHVAYVLIKFANSRPR 150
Xenopus_tropicalis    ANNREKSHIPISNAIDGTERWWQSPPLSRGFYFNQVNTLELGQVFHVAYVLIKFANSRPR 21
Latimeria_chalumnae   -----MWQ-----QVFHVAYVLIKFANSRPR
Rhinatrema_bivittatum SADIDKAHPITNAIDGTERWWQSPPLSRTLEYNEINVNTLDLGQVFHVAYVLIKFANSRPR 151
.....250.....260.....270.....280.....290.....300

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Homo_sapiens          DLWVLERSMDFGRTYQPWQFFASSKRDCLERFGPQTLERITRDDAAICTTEYSRIVPLEN 227
Pan_troglodytes       DLWVLERSMDFGRTYQPWQFFASSKRDCLERFGPQTLERITRDDAAICTTEYSRIVPLEN 227
Macaca_mulatta        DLWVLERSMDFGRTYQPWQFFASSKRDCLERFGPQTLERITRDDAAICTTEYSRIVPLEN 227
Callithrix_jacchus    DLWVLERSMDFGRTYQAWQFFASSKRDCLERFGPQTLERITRDDMAICTTEYSRIVPLEN 230
Bos_taurus            DLWVLERSTDFGHTYQPWQYFASSKRDCLERFGLRTLERITQDDDVICTTEYSRIVPLEN 221
Equus_caballus        DLWVLERSTDFGHTYQPWQFFASSKRDCLERFGPRTLERVTRDDDVICTTEYSRIVPLEN 230
Pteropus_alecto       DLWVLERSTDFGLTYQPWQFFASSKRDCLERFGAPSLERITRDDDVICTTEYSRIVPLEN 357
Mus_musculus          DLWVLERSTDFGHTYQPWQFFASSKRDCLERFGPRTLERITQDDDVICTTEYSRIVPLEN 232
Ornithorhynchus_anatinus DLWVLEHSTDFGLTYQPWQYFASSKTDCIEKFGLHSLERITRDDDAICTTEYSRIVPLEN 229
Pavo_muticus          DLWVLERSTDFGLTYEPWQYFASSKRDCIEKFGLQTVDRISKDDHAICTTEYSRIVPLEN 224
Pavo_cristatus        DLWVLERSTDFGLTYEPWQYFASSKRDCIEKFGLQTVDRISKDDHAICTTEYSRIVPLEN 224
Gallus_gallus         DLWVLERSTDFGLTYEPWQYFASSKRDCIEKFGLQTVDRITKDDHAICTTEYSRIVPLEN 224
Anas_platyrhynchos    DLWVLERSTDFGLTYEPWQYFASSKRDCIEKFGLHTVDRITKDDHAICTTEYSRIVPLEN 232
Chelonia_mydas        DLWVLERSTDFGLTYEPWQYFASSKRDCIEKFGPNTVERITKDDDAICTTEYSRIVPLEN 234
Xenopus_tropicalis    DLWVLERSTDFGVTYQPWQYFASSKRDCLERFGPQTLQRISRDDDVICTTEHSRIVPLEN 210
Latimeria_chalumnae   DLWVLERSTDLGLTYSPWQYFASSKRDCIERFGARSIERIFKDDDVICTTEYSRIVPLEN 81
Rhinatrema_bivittatum DLWVLERSTDFGGTYQPWQYFASSKRDCIERFGPRTIVERIVKDDDVICTSEYSRIVPLEN 211
.....310.....320.....330.....340.....350.....360

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**:*:**** *****:* :*****:*****:*****:*****:*****:*****
Homo_sapiens      GEIVVSLVNGRPGAMNFSYSPLLREFTKATNVRLRFLRTNTLLGHLMGKALRDPVTVTRY 287
Pan_troglodytes   GEIVVSLVNGRPGAMNFSYSPLLREFTKATNVRLRFLRTNTLLGHLMGKALRDPVTVTRY 287
Macaca_mulatta    GEIVVSLVNGRPGAMNFSYSPLLREFTKATNVRLRFLRTNTLLGHLMGKALRDPVTVTRY 287
Callithrix_jacchus GEIVVSLVNGRPGAMNFSYSPLLRNF TKATNIRLRFLRTNTLLGHLMGKALRDPVTVTRY 290
Bos_taurus        GEIVVSLVNGRPGAMNFSYSPLLRDFTKATNIRLRFLRTNTLLGHLMGKALRDPVTVTRY 281
Equus_caballus    GEIVVSLVNGRPGATNFSYSPLLRDFTKATNIRLRFLRTNTLLGHLMGKALRDPVTVTRY 290
Pteropus_alecto   GEVVVSLVNRPPGAMNFSYSPLLRDFTKATNIRLRFLRTNTLLGHLMGKALRDPVTVTRY 417
Mus_musculus      GEIVVSLVNGRPGALNFSYSPLLRDFTKATNIRLRFLRTNTLLGHLMGKALRDPVTVTRY 292
Ornithorhynchus_anatinus GEIVVSLVNGRPGAMNFSYSPLLRDFTKATNIRLRFLRTNTLLGHLMGKALRDPVTVTRY 289
Pavo_muticus      GEIVISLVNGRPGAMNFSYSPLLRNF TKATNIRLRFLQTNTLLGHLMGKALRDPVTVTRY 284
Pavo_cristatus    GEIVISLVNGRPGAMNFSYSPLLRNF TKATNIRLRFLQTNTLLGHLMGKALRDPVTVTRY 284
Gallus_gallus     GEIVVSLVNGRPGAMNFSYSPLLRNF TKATNIRLRFLQTNTLLGHLMGKALRDPVTVTRY 284
Anas_platyrhynchos GEIVVSLVNGRPGAMNFSYSPLLRNF TKATNIRLRFLQTNTLLGHLMGKALRDPVTVTRY 292
Chelonia_mydas    GEIVVSLVNGRPGAMNFSYSPLLRNF TKATNIRLRFLQTNTLLGHLMGKALRDPVTVTRY 294
Xenopus_tropicalis GEIVVSLVNKRPGAMNFSYSPLLMNF TKATTVRLRFLRTNTLLGHLMGKTLRDPVTVTRY 270
Latimeria_chalumnae GEIVVSLVNGRPGAMNFSYSPVLQDFTKATNIRLRFLRTNTLLGHLMGKALRDPVTVTRY 141
Rhinatrema_bivittatum GEIVVSLVNGRPGAMNFSYSPLLRNF TKATNIRLRFLRTNTLLGHLMGKALRDPVTVTRY 271
.....370.....380.....390.....400.....410.....420

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Homo_sapiens      YYSIKDISIGGRCVCHGHADACDAKDPDTPFRLOCTCQHNTCGGTCDRCCPGFNQPPWKP 347
Pan_troglodytes   YYSIKDISIGGRCVCHGHADACDAKDPDTPFRLOCTCQHNTCGGTCDRCCPGFNQPPWKP 347
Macaca_mulatta    YYSIKDISIGGRCVCHGHADACDAKDPDTPFRLOCTCQHNTCGGTCDRCCPGFNQPPWKP 347
Callithrix_jacchus YYSIKDISIGGRCVCHGHADVCAKDPDTPFRLOCTCQHNTCGGTCDRCCPGFNQPPWKP 350
Bos_taurus        YYSIKDISIGGRCVCHGHADVCAKDPDTPFRLOCTCQHNTCGGTCDRCCPGFNQPPWKP 341
Equus_caballus    YYSIKDISIGGRCVCHGHADVCAKDPDTPFRLOCTCQHNTCGGTCDRCCPGFNQPPWKP 350
Pteropus_alecto   YYSIKDISIGGRCVCHGHADVCAKDPDTPFRLOCTCQHNTCGGTCDRCCPGFNQPPWKP 477
Mus_musculus      YYSIKDISIGGRCVCHGHADVCAKDPDTPFRLOCTCQHNTCGGTCDRCCPGFNQPPWKP 352
Ornithorhynchus_anatinus YYSIKDISIGGRCVCHGHADACDAKDPNPFRLQACQHNCTGTCSDRCCPGFNQVQWKP 349
Pavo_muticus      YYSIKDISIGGRCVCHGHADVCAKDPDTPFRLOCTCQHNTCGGTCDRCCPGFNQPPWKP 344
Pavo_cristatus    YYSIKDISIGGRCVCHGHADVCAKDPDTPFRLOCTCQHNTCGGTCDRCCPGFNQPPWKP 344
Gallus_gallus     YYSIKDISIGGRCVCHGHADVCAKDPDTPFRLOCTCQHNTCGGTCDRCCPGFNQPPWKP 344
Anas_platyrhynchos YYSIKDISIGGRCVCHGHADVCAKDPDTPFRLOCTCQHNTCGGTCDRCCPGFNQPPWKP 352
Chelonia_mydas    YYSIKDISIGGRCVCHGHADVCAKDPDTPFRLOCTCQHNTCGGTCDRCCPGFNQPPWKP 354
Xenopus_tropicalis YYSIKDISIGGRCVCHGHADVCAKDPDTPFRLOCTCQHNTCGGTCDRCCPGFNQPPWKP 330
Latimeria_chalumnae YYSIKDISIGGRCVCHGHADVCAKDPDTPFRLOCTCQHNTCGGTCDRCCPGFNQPPWKP 201
Rhinatrema_bivittatum YYSIKDISIGGRCVCHGHADACDARDPIDPFRHLHDCQHNTCGGTCDRCCPGFNQPPWKP 331
.....430.....440.....450.....460.....470.....480

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* .****: *:* .** *****:; ** . *****:;* *:***:
Homo_sapiens      ATANSANECQSCNCYGHATDCYYDPEVDRRRASQSLDGTYYGGGVVICIDQHHTTGVNCR 407
Pan_troglodytes   ATANSANECQSCNCYGHATDCYYDPEVDRRRASQSLDGTYYGGGVVICIDQHHTTGVNCR 407
Macaca_mulatta    ATANSANECQSCNCYGHATDCYYDPEVDRRRASQSLDGTYYGGGVVICIDQHHTTGVNCR 407
Callithrix_jacchus ATASSANECQSCNCYGHATDCYYDPEVDRRHASQSMGTYYGGGVVICIDQHHTTGINCR 410
Bos_taurus        ATTDSANECQSCNCYGHADCYDPEVDRRNASQNDQVYQGGGVVICIDQHHTTGINCEQ 401
Equus_caballus    ATTDNANECQSCNCYSHADCYDPEVDRRNASQNDNVYQGGGVVICIDQHHTTGINCR 410
Pteropus_alecto   ATTDSANECQSCNCYGHADCYDPEVDRRGASQNSDNVYQGGGVVICIDQHHTTGINCR 534
Mus_musculus      ATTDSANECQSCNCYGHADCYDPEVDRRNASQNDNVYQGGGVVICIDQHHTTGINCR 412
Ornithorhynchus_anatinus ATTDSANECQSCNCYGHADCYDPEVDRRNASQNDNVYQGGGVVICIDQHHTTGINCR 409
Pavo_muticus      ATADSANECQPCNCNGHAYDCYYDPEVDYKASKSRDKYEGGGVICIDQHHTTGVNCR 404
Pavo_cristatus    ATADSANECQPCNCNGHAYDCYYDPEVDYKASKSRDKYEGGGVICIDQHHTTGVNCR 404
Gallus_gallus     ATADSANECQPCNCNGHAYDCYYDPEVDYKASKSRDKYEGGGVICIDQHHTTGVNCR 404
Anas_platyrhynchos ATADSANECQPCNCNGHAYDCYYDPEVDYKASKSRDKYEGGGVICIDQHHTTGINCR 412
Chelonia_mydas    AMTDSANECQPCNCNGHAYDCYYDPEVDYKASKSRDKYEGGGVICIDQHHTTGINCR 414
Xenopus_tropicalis ATKDNANECQPCNCNGHAYDCYYDPEVDRRNASQNDNVYQGGGVVICIDQHHTTGINCR 390
Latimeria_chalumnae ATTASANECEPCNCNGHAFDCYYDPEVDYKASKSRDKYEGGGVICIDQHHTTGINCR 261
Rhinatrema_bivittatum ATADSANECQPCNCNGHAYDCYYDPEVDRRNASQNDNVYQGGGVVICIDQHHTTGINCR 391
.....490.....500.....510.....520.....530.....540

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Homo_sapiens      CLPGFYRSPNHPLDSPHVCRRNCESDFTDGTCEDLTGRCYCRPNFSGERCDCVCAEGFTG  467
Pan_troglodytes   CLPGFYRSPNHPLDSPHVCRRNCESDFTDGTCEDLTGRCYCRPNFSGERCDCVCAEGFTG  467
Macaca_mulatta    CLPGFYRSPDHPLDSPHVCRRNCESDFTDGTCEDLTGRCYCRPNFSGERCDCVCAEGFTG  467
Callithrix_jacchus CLPGFYRSPDHPLDSPHVCRRNCESDFTDGTCEDLTGRCYCRPNFSGERCDCVCAEGFTG  470
Bos_taurus        CLPGFYRSPDHPLDSPHVCRRNCESDFTDGTCEDLTGRCYCRPNFSGERCDCVCAEGFTG  461
Equus_caballus     CLPGFYRSPDHPLDSPHVCRRNCESDFTDGTCEDLTGRCYCRPNFSGERCDCVCAEGFTG  470
Pteropus_alecto    CLPGFYRSPDHPLDSPHVCRRNCESDFTDGTCEDLTGRCYCRPNFSGERCDCVCAEGFTG  594
Mus_musculus       CLPGFYRSPDHPLDSPHVCRRNCESDFTDGTCEDLTGRCYCRPNFSGERCDCVCAEGFTG  472
Ornithorhynchus_anatinus CIPGYRSPNHPLDSPHVCRRNCESDFTDGTCEDLTGRCYCRPNFSGERCDCVCAEGFTG  469
Pavo_muticus       CIPGYRSPDHPLDSPHVCRRNCESDFTDGTCEDLTGRCYCRPNFSGERCDCVCAEGFTG  464
Pavo_cristatus     CIPGYRSPDHPLDSPHVCRRNCESDFTDGTCEDLTGRCYCRPNFSGERCDCVCAEGFTG  464
Gallus_gallus      CIPGYRSPDHPLDSPHVCRRNCESDFTDGTCEDLTGRCYCRPNFSGERCDCVCAEGFTG  464
Anas_platyrhynchos CIPGYRSPDHPLDSPHVCRRNCESDFTDGTCEDLTGRCYCRPNFSGERCDCVCAEGFTG  472
Chelonia_mydas     CIPGYRSPDHPLDSPHVCRRNCESDFTDGTCEDLTGRCYCRPNFSGERCDCVCAEGFTG  474
Xenopus_tropicalis CIPGYRSPDHPLDSPHVCRRNCESDFTDGTCEDLTGRCYCRPNFSGERCDCVCAEGFTG  450
Latimeria_chalumnae CIPGYRSPDHPLDSPHVCRRNCESDFTDGTCEDLTGRCYCRPNFSGERCDCVCAEGFTG  321
Rhinatrema_bivittatum CSPGYRSPDHPLDSPHVCRRNCESDFTDGTCEDLTGRCYCRPNFSGERCDCVCAEGFTG  451
.....550.....560.....570.....580.....590.....600

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Homo_sapiens      FPSCYPTPS-S-SNDTREQVLPAGQIVNCDCS-----AAGTQGNACRKDPRVG----  513
Pan_troglodytes   FPSCYPTPS-S-SNDTREQVLPAGQIVNCDCS-----AAGTQGNACRKDPRVG----  513
Macaca_mulatta    FPSCYPTPS-S-SNDTREQVLPAGQIVNCDCS-----AAGTQGNACRKDPRVG----  513
Callithrix_jacchus FPNCYVPVS-S-SNDTREQVLPAGQIVNCDCS-----VAGTQGNACRKDPRVG----  516
Bos_taurus        FPHCYVPVSS-S-SNDTREQVLPAGQIVNCDCS-----AAGTQGNACRKDPRVG----  508
Equus_caballus     FPLCHPVAS-F-PNDTREQVLPAGQIVNCDCS-----AAGTQGNACRKDPRVG----  516
Pteropus_alecto    FPLCYPVSS--RNSTREQVLPAGQIVNCDCS-----AAGTQGNACRKDPRVG----  650
Mus_musculus       FPHCYPLPSFP-HNDTREQVLPAGQIVNCDCS-----AAGTQGNACRKDPRVG----  519
Ornithorhynchus_anatinus FPHCYPIPSFS-HNDTREQVLPAGQIVNCDCS-----AAGTQGNACRKDPRVG----  516
Pavo_muticus       FPHCYVPVAFAY-NDTREQVLPAGQIVNCDCS-----AAGTQGNACRKDPRVG----  511
Pavo_cristatus     FPHCYVPVAFAY-NDTREQVLPAGQIVNCDCS-----AAGTQGNACRKDPRVG----  511
Gallus_gallus      FPHCYVPVAFAY-NDTREQVLPAGQIVNCDCS-----AAGTQGNACRKDPRVG----  511
Anas_platyrhynchos FPHCYVPVAFAY-NDTREQVLPAGQIVNCDCS-----AAGTQGNACRKDPRVG----  519
Chelonia_mydas     FPHCYVPVAFAY-NDTREQVLPAGQIVNCDCS-----AAGTQGNACRKDPRVG----  521
Xenopus_tropicalis FPHCYVPVAFAY-NDTREQVLPAGQIVNCDCS-----AAGTQGNACRKDPRVG----  498
Latimeria_chalumnae FPQCYPEPTYPRGTG--EVLVGEIINCECS-----PTGTRGNSCRDPVSR----  367
Rhinatrema_bivittatum FPDNPPAPPFP--EDTGEQILPAGEIINCECS-----AAGTVGNACRKDAVSG----  497
.....610.....620.....630.....640.....650.....660

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Homo_sapiens      -----RCLCKPNFQGTTHCELCAFGYGPQCPCQCSSPGVADDRCDPDTGQCRCRVGFE  567
Pan_troglodytes   -----RCLCKPNFQGTTHCELCAFGYGPQCPCQCSSPGVADDRCDPDTGQCRCRVGFE  567
Macaca_mulatta    -----RCVCKPNFQGTTHCELCAFGYGPQCPCQCSSPGVADDRCDPDTGQCRCRVGFE  567
Callithrix_jacchus -----HCMCKPNFQGTTHCELCAFGYGPQCPCQCSSPGVADDRCDPDTGQCRCRVGFE  570
Bos_taurus        -----HCVCKPNFQGTTHCELCAFGYGPQCPCQCSSPGVADDRCDPDTGQCRCRVGFE  562
Equus_caballus     -----RCVCKPNFQGTTHCELCAFGYGPQCPCQCSSPGVADDRCDPDTGQCRCRVGFE  570
Pteropus_alecto    VAVLLLVCVCKPNFQGTTHCELCAFGYGPQCPCQCSSPGVADDRCDPDTGQCRCRVGFE  710
Mus_musculus       -----RCVCKPNFQGTTHCELCAFGYGPQCPCQCSSPGVADDRCDPDTGQCRCRVGFE  573
Ornithorhynchus_anatinus -----ICVCKPNFQGTTHCELCAFGYGPQCPCQCSSPGVADDRCDPDTGQCRCRVGFE  570
Pavo_muticus       -----MCVCKPNFQGTTHCELCAFGYGPQCPCQCSSPGVADDRCDPDTGQCRCRVGFE  565
Pavo_cristatus     -----MCVCKPNFQGTTHCELCAFGYGPQCPCQCSSPGVADDRCDPDTGQCRCRVGFE  565
Gallus_gallus      -----MCVCKPNFQGTTHCELCAFGYGPQCPCQCSSPGVADDRCDPDTGQCRCRVGFE  565
Anas_platyrhynchos -----MCVCKPNFQGTTHCELCAFGYGPQCPCQCSSPGVADDRCDPDTGQCRCRVGFE  573
Chelonia_mydas     -----MCVCKPNFQGTTHCELCAFGYGPQCPCQCSSPGVADDRCDPDTGQCRCRVGFE  575
Xenopus_tropicalis -----ACVCKPNFQGTTHCELCAFGYGPQCPCQCSSPGVADDRCDPDTGQCRCRVGFE  552
Latimeria_chalumnae -----VCICKPNFQGTTHCELCAFGYGPQCPCQCSSPGVADDRCDPDTGQCRCRVGFE  421
Rhinatrema_bivittatum -----LCLCKPNFQGTTHCELCAFGYGPQCPCQCSSPGVADDRCDPDTGQCRCRVGFE  551
.....670.....680.....690.....700.....710.....720

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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	* * . : ** * : * : *** :	
Homo_sapiens	GATCDRCAPGYFHFPLCQLCGCSPAGTILPEGCDEAGRCLCQPEFAGPHCDRCRPGYHGFP	627
Pan_troglodytes	GATCDRCAPGYFHFPLCQLCGCSPAGTILPEGCDEAGRCLCQPEFAGPHCDRCRPGYHGFP	627
Macaca_mulatta	GATCDRCAPGYFRFPLCQLCGCSPAGTILPEGCDEAGRCPCQPGFAGPHCDCHPGYHGFP	627
Callithrix_jacchus	GPMCDRCAPGYFHFPLCQLCSCSPAGTILPEGCDEAGRCPCQPGFAGPHCDRCHPGYHGFP	630
Bos_taurus	GAACDRCAPGYFHFPLCQLCGCSPVGTILPEGCDDAGRCLCRPEFNGPHCDRCRLGYHGYP	622
Equus_caballus	GAACDRCAPGYFHFPLCRLCGCSPSGTILPEGCDEAGRCLCRPEFDGPHCDRCRPGHHGYP	630
Pteropus_alecto	GTACDRCAPGYFRFPLCQSP-----	730
Mus_musculus	GDRCDHCALGYFHFPLCQLCGCSPAGTILPEGCDEAGRCQCRPGFDGPHCDRLPGYHGYP	633
Ornithorhynchus_anatinus	GPACDRCAPGYFNYPLCRLCGCSPVGTIPEVCDAAAGTCLCRAEFAGPHCDHCSPGHHSYP	630
Pavo_muticus	GHSCDQCAPGYFNYPLCQLCGCSPAVGTILPGGCDSSGRFCRAEFAGPRCEQCSSGHHSYP	625
Pavo_cristatus	GHSCDQCAPGYFNYPLCQLCGCSPAVGTILPGGCDSSGRFCRAEFAGPRCEQCSSGHHSYP	625
Gallus_gallus	GQLCDRCAPGYFNYPLCQLCGCSPAVGTILPGGCDSSGRFCFCAEFAGPRCEQCSSGHHSYP	625
Anas_platyrhynchos	GHSCDQCAPGYFNYPLCQLCGCSPAVGTILPGGCDSSGRFCRPEFAGPRCEQCSAGHHSYP	633
Chelonia_mydas	GYSNQCAPGYFNYPLCQLCGCSPAVGTILPGGCDSSGRFCRPEFDGPRCDQCSMGYHSYP	635
Xenopus_tropicalis	GFLCDQCAPGFFNYPLCQLCGCSPVGTILPGGCDSTGRCLCKPEYDGPGRCEQCTIMGYHSYP	612
Latimeria_chalumnae	GHFCGQCAPGYFNYPLCQLCGCSPVGTILPEGCDLAGRCLCKPMFTGPRCDQCSHGFFHSYP	481
Rhinatrema_bivittatum	GYSNQCAPGFFSYPLCQLCGCSPVGTILPEGCDPAGRCICKPEYDGAHCDQCTAGYHSYP	611
730.....740.....750.....760.....770.....780	

Species	Sequence	Position
Homo_sapiens	NCQACTCDPRGALDQLCGAGGLCRCRPGYTGATACQECSPGFHGFPSVCPCHCSAEGSLHA	687
Pan_troglodytes	NCQACTCDPRGALDQLCGAGGLCRCRPGYTGATACQECSPGFHGFPSVCPCHCSAEGSLHA	687
Macaca_mulatta	NCQPCTCDPRGALDQLCGAGGLCRCRPGYTGATACQECSPGFHGFPSVCPCHCSAEGSLHA	687
Callithrix_jacchus	NCQACTCDPRGALDQFCGVGGVCHCRPGYMGATACQECSPGFHGFPSVCPCHCSTEGSLYA	690
Bos_taurus	ECHACACDPRGSVDQLCGAGGLCRCRPGYAGATCQECSPGFHGFDPDCAPCHCSPEGSLHA	682
Equus_caballus	DCRACACDPRGALDQLCGVGGVCHCRPGYMGTTTCQECSPGFHGFDPDCAPCHCNADGSLHA	690
Pteropus_alecto	-----WGVG-----PGQAWG-----HSWPSGSPRPGVSDQGLTT	759
Mus_musculus	DCHACACDPRGALDQQCGVGGGLCHCRPGYTGATCQECSPGFYGFPSCTPCHCSADGSLHT	693
Ornithorhynchus_anatinus	HCAACACDPRGSLGEPCSPAGTCRCLPNFSGPSCHECAPGFYGFPSCTPCHCSREGSFQD	690
Pavo_muticus	HCYACSCDSRGAVDNNCSPAGQCRCHVNFAGHTCNQCALGFYGYPRCTPCQCSREGSLHS	685
Pavo_cristatus	HCYACSCDSRGAVDNNCSPAGQCRCHVNFAGHTCNQCALGFYGYPRCTPCQCSREGSLHS	685
Gallus_gallus	HCYACSCDSRGAVDNNCSPAGQCRCHVNFAGHTCNQCALGFYGYPSCTPCQCSREGSLHS	685
Anas_platyrhynchos	HCYACSCDSRGAVDNNCSPAGQCRCHVNFAGHTCNQCALGFYGYPSCTPCQCSREGSLHS	693
Chelonia_mydas	RCQACSCDPRGSVDNNCSPAGQCRCHSNYAGHTCSQCAPGFYGYPSCTPCQCSPEGSLHS	695
Xenopus_tropicalis	HCAACSCDPRGAADNNCTPTGHCQCHPNYAGPSCSCQAAGHYGYPSCTPCHCSAEGSLRN	672
Latimeria_chalumnae	NCQAC-----HCSIEGSRHS	496
Rhinatrema_bivittatum	NCQVCSCDARGSSADDGCSPSGHCRCHSNYVGLACDQCAPGFHGYPHCTPCQCSAEGSLHG	671

	. . . * . * . : *		* . **					
Homo_sapiens	ACDPRSGQCS	CRPRVTGLRCDT	CVPGAYNFPYCEAGSCHPAGLAPVDPALPEAQVP	CMCR 747				
Pan_troglodytes	ACDPRSGQCS	CRPRVTGLRCDT	CVPGAYNFPYCEAGSCHPAGLAPVDPALPEAQVP	CMCR 747				
Macaca_mulatta	ACDPRSGQCS	CRPRVTGLRCDT	CVPGAYNFPYCEAGSCHPAGLALVDPALPEAQAQPCVCR	747				
Callithrix_jacchus	ACDPRSGQCS	CRPRVTGLRCDT	ACVGTGAYNFPYCEAGSCHPAGLAPVDPALPQAQAPCMCR	750				
Bos_taurus	ACDPHSGQCS	CRPRVTGLRCDCM	CVPGAYNFPYCEAGSCHPAGLAPADRVPPPEAQAAPTCTCR	742				
Equus_caballus	SCDPRSGQCS	CRPRVTGLRCDT	CVPGAYNFPYCEAGSCHPAGLAPA---VPEAQAQPCMC	R 747				
Pteropus_alecto	AWR-----	-----	-----LSTAGSCHPAGLAPADHDLPPEAQAQPCACR	791				
Mus_musculus	TCDPTTGQCRCR	PRVTGLHCDM	CVPGAYNFPYCEAGSCHPAGLAPANPALPETQAQPCMC	R 753				
Ornithorhynchus_anatinus	TCDDQETGQCACRS	LVTGLRCDT	CVPGAYGFPRCEVGS	CDPAGQASTPTLSEGE--SCECR 748				
Pavo_muticus	MCDQETGQCS	CRPKVTGLRCD	S	CVPGAYGFPHCEVGS	CNPAGLVTA	DPSLAGP	--S	CACR 743
Pavo_cristatus	TCDDQETGQCS	CRPKVTGLRCD	S	CVPGAYGFPHCEVGS	CNPAGLVTA	DPSLAGP	--S	CACR 743
Gallus_gallus	TCNQETGQCS	CRPKVTGLRCD	S	CVPGAYGFPHCEVGS	CNPAGLVTA	DPSLAGP	--S	CACR 743
Anas_platyrhynchos	TCDDQETGQCS	CRPKVTGLRCD	S	CVPGAYGFPHCEVGS	CNPAGLMATA	DPSLAGP	--S	CACR 751
Chelonia_mydas	TCDDQETGQCS	CRPKVAGVRCDT	CM	PGAYGFPHCEVGS	CNPAGLATVD	PSLSGP	--S	CACR 753
Xenopus_tropicalis	TCNPQSGQCCLRHSIT	GLRCD	S	CAPGTYGFDP	CQVGPCNP	SGSKSLSVNSLEG	--S	CECR 730
Latimeria_chalumnae	TCDDQETGCNCNCLPNVA	AQRNTCL	PGAYGFPLCQVGS	CNPAGSVNSEVTSAG	--S	CECR 554		
Rhinatrema_bivittatum	TCDDQETGQCS	CRSRVTGTRCEA	CVPGAYGFPHCEVGS	CNPSSGALLEPSAAS	--S	CECR 729		
850.....860.....870.....880.....890.....900							

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*** :*:*** .*:...* **: * * **:.* :* *:****. *:
Homo_sapiens      AHVEGPS CDRCKPGFWGLSPSNPEGCTRCSCDLRGTLLGGVAECOPGTGQCFCKPHVCGQA 807
Pan_troglodytes   AHVEGPS CDRCKPGFWGLSPSNPEGCTRCSCDLRGTLLGGVAECOPGTGQCFCKPHVCGQA 807
Macaca_mulatta    ANVEGPS CDRCKPGFWGLSPSNPEGCTRCSCDLRGTLLGGVAECOPGTGQCFCKPHVCGQA 807
Callithrix_jacchus AHVEGPS CDRCKPGFWGLSPSNPKGCTRCSCDLRGTLLGGVAECOPGSGQCFCKPHVCGQA 810
Bos_taurus        AHVEGPS CDRCKPGFWGLSPSNPEGCTRCNCDPRGTLLGGAACQLGNGQCFCKPHVCGQT 802
Equus_caballus     AHVEGPS CDRCKPGFWGLSPSTPEGCTRCSCDLRGTLLGGVAECQLGSGQCFCKPHVCGQT 807
Pteropus_alecto    AHVEGPS CDRCKPGFWGLSPSNPKGCTRCSCDLRGTLLGGVAECOPSDGHCFCKAHVCGRT 851
Mus_musculus       AHVEGPS CDRCKPGYWGLSASNPEGCTRCSCDLRGTLLGGVTECQ-GNGQCFCKAHVCGKT 812
Ornithorhynchus_anatinus AFVEGPS CERCKPLYWNLTPDNFYGCTTCRCNTQGTLLGGVAECHQASGQCFCKPSVCGRT 808
Pavo_muticus       AYVEGPACDRCKPLYWNLTPDNFYGCTSCCKETKGTISGIAECQQGNGQCFCKPNTCGQF 803
Pavo_cristatus     AYVEGPACDRCKPLYWNLTPDNFYGCTSCCKETKGTISGIAECQQGNGQCFCKPNTCGQF 803
Gallus_gallus      AYVEGPACDRCKPLYWNLTPDNFYGCTSCCKETKGTISGIAECQQGNGQCFCKPNTCGQF 803
Anas_platyrhynchos AYVEGPACDRCKPLYWNLTPENFYGCTSCCKDTKGTISGIAECQQGDGQCFCKPNTCGQF 811
Chelonia_mydas     AYVEGPACDRCKPRYWNLTPDNPHGCTSCQCDTKGTISGVAECHQDNGQCFCKPSVCGQL 813
Xenopus_tropicalis DHVEGPACDKCKPLYWNLAPENPHGCTRCQCGSDGTINGVGECRQATGQCFCKPNICSR 790
Latimeria_chalumnae PYVEGLACDRCKPLYWNLTPDNFYGCTCHCGTEGTLGVAECQLGNGQCFCKPNICSR 614
Rhinatrema_bivittatum MYVEGPACDRCKPLHWNLTPENFYGCSGCQGSTAGTLGIAECEQGTGQCFCKPNVCSRT 789
.....910.....920.....930.....940.....950.....960

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*: **.* : : .****.*:*** **:.* *. :.* * ** ...* *.
Homo_sapiens      CASCKDGFFFGLDQADYFGCRSCRCDIGGALGQSCPEPTGVCRCRPNTQGPTCSEPARDHY 867
Pan_troglodytes   CASCKDGFFFGLDQADYFGCRSCRCDIGGALGQSCPEPTGVCRCRPNTQGPTCSEPARDHY 867
Macaca_mulatta    CAACKDGFFFGLDQADYFGCRSCRCDAGGALGQSCPEPTGACRCRPNTQGPTCSRVPVDHY 867
Callithrix_jacchus CSACKDGFFFRLDRADYFGCRSCRCDIGGALGPSCEPTGACLCRPNTQGPTCSEPARDHY 870
Bos_taurus        CAACKDGFFFGLDQADYFGCRSCRCDVGGALGQSCPEPTGACRCRPNTQGLTSEPARDHY 862
Equus_caballus     CAACKDGFFFGLDQADYFGCRSCRCDVGGALGQSCPEPTGACRCRPNTQGLTSEPARDHY 867
Pteropus_alecto    CAACKDGFFFGLDQANYFGCHSCQCDVGGALGQSCPEPTGACRCRPNTQGPTCSEWVP--- 908
Mus_musculus       CAACKDGFFFGLDYADYFGCRSCRCDVGGALGQSCPEPTGACRCRPNTQGPTCSEPAKHY 872
Ornithorhynchus_anatinus CSTCKDGYRRLDQGNFYGCQSCCHCDIGGALAQSCARTGACHCRQNTQGLTCTEPAREHY 868
Pavo_muticus       CSACKDGYFSMENTNYFGCQGCRCDVGGSLGPSCEERSGACRCRQNTRGPTCTQPVVDHY 863
Pavo_cristatus     CSACKDGYFSMENTNYFGCQGCRCDVGGSLGPSCEERSGACRCRQNTRGPTCTQPVVDHY 863
Gallus_gallus      CSACKDGYFSMENTNYFGCQGCRCDVGGSLGPSCEERSGACRCRQNTRGPTCTQPVVDHY 863
Anas_platyrhynchos CSTCKDGYFSMENANYFGCQGCRCDVGGSLGPSCEERSGACRCRQSTRGPTCSQPARDHY 871
Chelonia_mydas     CSTCKDGSFNLHDHANYFGCQGCRCDVGGSIGTACEARTGACHCRQNTQGLTCTLPARDHY 873
Xenopus_tropicalis CSTCKDGYYNLQPSYFGCQGCQCDIGGSIGLACHEKTGGCQCRENVQGSQCNPPTPGHY 850
Latimeria_chalumnae CSVCKDGYFGLDDGKYFGCQGCQCDIGGSVGLTCDERAGRCHCRQNVGDKCNQPKREHY 674
Rhinatrema_bivittatum CSMCKSGFFFTLDHNNYFGCRGCRCDIGGALGLTCDERTGACQCRENVQGPCRNQPSQHY 849
.....970.....980.....990.....1000.....1010.....1020

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: .***.* : : :***:
Homo_sapiens      LPDLHHLRLLELEEAATPEGHAVRFGFNPLEFENFSWRGYAQMAPPVQPRIVARLNLTSDDL 927
Pan_troglodytes   LPDLHHLRLLELEEAATPEGHAVRFGFNPLEFENFSWRGYAQMAPPVQPRIVARLNLTSDDL 927
Macaca_mulatta    LPDLHHLRLLELEEAATPEGHAVRFGFNPLEFENFSWRGYAQMAPPVQPRIVARLNLTSDDL 927
Callithrix_jacchus LPDLHHLRLLELEEAATPKGHAVRFAFNPLEFENFSWRGYAQMAPPVQPRIVARLNLTSDDV 930
Bos_taurus        LPDLHHLRLLELEEAATPEGHAVRFGFNPLEFENFSWRGYAQMTPIQPRIVAQLNLTSDDL 922
Equus_caballus     LPDLHHLRLLELEEAATPEGHAIRFGFNPLEFENFSWRGYAQMTPIQPRIVARLNVSSDDL 927
Pteropus_alecto    -----RPGPIQPRIVARLDVTSDDL 928
Mus_musculus       LPDLHHMRLELEEAATPEGHAVRFGFNPLEFENFSWRGYAHMMAIQPRIVARLNVTSDDL 932
Ornithorhynchus_anatinus LPDLHHLRFEVEEGRTPDGRTVRFYGNPLEFENFSWRGYAQMSPVQPKVVVTLNVTSDDL 928
Pavo_muticus       FPDHLHLKFELEEGTTPAGRAVRFGYNPLEFEGFSWRGYAQMSSIQPKVVVTLNVTSDDL 923
Pavo_cristatus     FPDHLHLKFELEEGTTPAGRAVRFGYNPLEFEGFSWRGYAQMSSIQPKVVVTLNVTSDDL 923
Gallus_gallus      FPDHLHLKFELEEGTTPAGRAVRFGYNPLEFEGFSWRGYAQMSSIQPKVVVTLNVTSDDL 923
Anas_platyrhynchos FPDHLHLKFELEEGTTPAGRAVRFGYNPLEFEGFSWRGYAQMSSIQPKVVVTLNVTSDDL 931
Chelonia_mydas     FPDHLHLKLELEEGTTLDGRAVRFGYNPLEFENFSWRGYAQMSPIQPKVVVTLNVTSDDL 933
Xenopus_tropicalis FPDHLHLRYEVEDGVTEDEGRPVRFYGNPLEFENFSWRGYAQMSPFQPKVVLTINVTSDDL 910
Latimeria_chalumnae FPDHLHLKFEIEEGTTPDGRPVRFYGNPLEFENFSWKGYAQMSTIQPEVVVTVNVTSDDL 734
Rhinatrema_bivittatum FPDHLHLKFELEEGRTPDGRAVRFGYNPLEFESFSWRGYAQMSSIQPKVVVTLHVSSDDL 909
.....1030.....1040.....1050.....1060.....1070.....1080

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Homo_sapiens      FWLVFRYVNRGAMSVSGRVSVREEGRSAICANCTAQSQPVAFFPPSTPAFITVTPQRGFGE 987
Pan_troglodytes   FWLVFRYVNRGAMSVSGRVSVREEGRSAACANCTAQSQPVAFFPPSTPAFITVTPQRGFGE 987
Macaca_mulatta    FWLVFRYVNRGAMSVSGRVSVREEGRSAACANCTAQSQPVAFFPPSTPAFITVTPQRGFGE 987
Callithrix_jacchus FWLVFRYVNRGPTSVSGRVSQEEGRSAACNTAQSQPMDFPPSTPAFITVTPQRGFGD 990
Bos_taurus        FRLVFRYVNRGPTSVSGRVSMDRDKFTTCPNCTEQSQPVAFFPPSTPAFITVTPQRLGE 982
Equus_caballus    FRLVFRYVNRGPTSVSGRVSQEEGRSAACNTAQSQPVAFFPPSTPAFITVTPRRGFGE 987
Pteropus_alecto   FRLVFRYVNRGPTSVSGRVSVREEGRSAACNTAQSQPIVFPSTPAFITVTPQRGFGE 988
Mus_musculus      FRLVFRYVNRGSTSVNGQISVREEGRSAACNTAQSQPVAFFPPSTPAFITVTPQRGFGE 992
Ornithorhynchus_anatinus FRLVFRYVNRGLTSVEGRVSVLEEGKFNICGNCTEQTKQIVFPSTPAFITVTPQSGYGE 988
Pavo_muticus      FRLVFRYVSRGSASVEGRVSVVEEGKFNICGNCTEQSKQIVFAPSTPAFITVTPQNSFGE 983
Pavo_cristatus    FRLVFRYVSRGSASVEGRVSVVEEGKFNICGNCTEQSKQIVFAPSTPAFITVTPQNSFGE 983
Gallus_gallus     FRLVFRYVSRGSAIVEGRVSVVEEGKFNICGNCTEQSKQIVFAPSTPAFITVTPQNSFGE 983
Anas_platyrhynchos FRLVFRYVSRGPAIVEGRVSVVEEGKFNICGNCTEQTKQIVFAPSTPAFITVTPQNSFGE 991
Chelonia_mydas    FRIVFRYVNRGPAIVEGRVSVLEEGKFNICGNCTEQTKQIIFAPSTPAFITVTPQNSFGE 993
Xenopus_tropicalis FRVFRYVNRGADSVHGKVSFIEERKFNACNCSEQTKRIVFPSTPAFITVTPQNSFGE 970
Latimeria_chalumnae FLIVFRYVNRRESANVEGRVSIIEEGRLDVCGNCSEQSKQIIFAPSTPTFTVTPQNSFGE 794
Rhinatrema_bivittatum FRIAFRYANRGPTSVVEGRVSVLEEDRFKACDSCAEQTPIVFPSTPAFITVTPQSGYGE 969
.....1090.....1100.....1110.....1120.....1130.....1140

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***** *::: *. .:***:::**** *****:*** :***:***:
Homo_sapiens      PFVLNPGTWALRVEAEGVLLDYVLLPSAYYEAAALLQLRVTEACTYRPSAQQSGDNCCLLY 1047
Pan_troglodytes   PFVLNPGTWALLVEAEGVLLDYVLLPSAYYEAAALLQLRVTEACTYRPSAQQSGDNCCLLY 1047
Macaca_mulatta    PFVLNPGTWALLVEAEGVLLDYVLLPSAYYEAAALLQLRVTEACTYRPSAQQSGDNCCLLY 1047
Callithrix_jacchus PFVLNPGTWALIVEAEGVLLDYVLLPSAYYEAAALLQLRVTEACTYRPSAQQSGDNCCLLY 1050
Bos_taurus        PFVLNPGAWALLVEAEGVLLDYVLLPSAYYEAAALLQLRVTEACTYRPSAQQSGDNCCLLY 1042
Equus_caballus    PFVLNPGTWALLVEATGVLLDYVLLPSAYYEAAALLQLRVTEACTYRPSAQQSGDNCCLLY 1047
Pteropus_alecto   PFVLNPGTWALLVEAEGVLLDYVLLPSAYYEAAALLQLRVTEACTYRPSAQQSGDNCCLLY 1048
Mus_musculus      PFVLNPGIWallVEAEGVLLDYVLLPSAYYEAAALLQLRVTEACTYRPSAQQSGDNCCLLY 1052
Ornithorhynchus_anatinus PFVLNPSLWTLVVEAEGVLLDHVLLPSAYYEAPVLQLKVSEPCYSPAPELQVHNCCLLY 1048
Pavo_muticus      PFVLNPNWTLVVEAEGVLLDYVLLPSAYYEAPILQLKVTDPCYQPAEQATQNCCLLY 1043
Pavo_cristatus    PFVLNPNWTLVVEAEGVLLDYVLLPSAYYEAPILQLKVTDPCYQPAEQATQNCCLLY 1043
Gallus_gallus     PFVLNPNWTLVVEAEGVLLDYVLLPSAYYEAPILQLKVTDPCYQPAEQATQNCCLLY 1043
Anas_platyrhynchos PFVLNPNWTLVVEAEGVLLDYVLLPSAYYEAPILQLKVTDPCYQPAEQATQNCCLLY 1051
Chelonia_mydas    PFVLNPNWTLVVEAEGVLLDYVLLPSAYYEAPILQLKVTDPCYQPAEQATQNCCLLY 1053
Xenopus_tropicalis PFVLNPNWTLVVEAEGVLLDYVLLPSAYYEAPILQLKVTDPCYQPAEQATQNCCLLY 1030
Latimeria_chalumnae PFVLNPNWTLVVEAEGVLLDYVLLPSAYYEAPILQLKVTDPCYQPAEQATQNCCLLY 854
Rhinatrema_bivittatum PFVLNPNWTLVVEAEGVLLDYVLLPSAYYEAPILQLKVTDPCYQPAEQATQNCCLLY 1029
.....1150.....1160.....1170.....1180.....1190.....1200

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*.:**.*: . ** ** :*** * ::: ** : * * :***: : :..**
Homo_sapiens      THLPLDGFPSAAGLEALCRQDNLPRPCPTEQLSPSHPLITCTGSDVDVQLQVAVPQPG 1107
Pan_troglodytes   THLPLDGFPSAAGLEALCRQDNLPRPCPTEQLSPSHPLITCTGSDVDVQLQVAVPQPG 1107
Macaca_mulatta    THLPLDGFPSAAGLEALCRQDNLPRPCPTEQLSPSHPLITCTGSDVDVQLQVAVPQPG 1107
Callithrix_jacchus THLPLDGFPSAAGLEALCRQDNLPRPCPTEQLSPSHPLITCTGSDVDVQLQVAVPQPG 1110
Bos_taurus        THLPLDGFPSAAGPEALCRHDNSLPRPCPTEQLSPSHPLITCTGSDVDVQLQVAVPQPG 1102
Equus_caballus    THLPLDGFPSAAGPEALCRHDNSLPRPCPTEQLSPSHPLITCTGSDVDVQLQVAVPQPG 1107
Pteropus_alecto   THLPLDGFPSAAGPEALCRHDNSLPRPCPTEQLSPSHPLITCTGSDVDVQLQVAVPQPG 1108
Mus_musculus      AHLPLDGFPSAAGTEALCRHDNSLPRPCPTEQLSPSHPLITCTGSDVDVQLQVAVPQPG 1112
Ornithorhynchus_anatinus HYLPLDGFPSAAGTEALCRHDNSLPRPCPTEQLSPSHPLITCTGSDVDVQLQVAVPQPG 1108
Pavo_muticus      KYLSLDGFPAVAGVGAVCRDLNRLPRGCPTEQLTPSHPRMAMCSGNDVEVQLSLPVAQPG 1103
Pavo_cristatus    KYLSLDGFPAVAGVGAVCRDLNRLPRGCPTEQLTPSHPRMAMCSGNDVEVQLSLPVAQPG 1103
Gallus_gallus     KYLSVDGFPAVAGVGAVCRDLNRLPRGCPTEQLTPSHPRMAMCSGNDVEVQLSLPVAQPG 1103
Anas_platyrhynchos KYLSVDGFPAVAGVGAVCRDLNRLPRGCPTEQLTPSHPRMAMCSGNDVEVQLSLPVAQPG 1111
Chelonia_mydas    KYLSVDGFPAVAGVGAVCRDLNRLPRGCPTEQLTPSHPRMAMCSGNDVEVQLSLPVAQPG 1113
Xenopus_tropicalis KYLSVDGFPAVAGVGAVCRDLNRLPRGCPTEQLTPSHPRMAMCSGNDVEVQLSLPVAQPG 1090
Latimeria_chalumnae QYLSVDGFPSAAGGDMVCRLDNLPRGCPTEQLTPSHPRMAMCSGNDVEVQLSLPVAQPG 914
Rhinatrema_bivittatum QFLPVDGFPSAAGGDMVCRLDNLPRGCPTEQLTPSHPRMAMCSGNDVEVQLSLPVAQPG 1089
.....1210.....1220.....1230.....1240.....1250.....1260

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Homo_sapiens	RYALVVEYANEDA-RQEVGVAVHTPQRAPQQGLLSLHPCLYSTLCRGTARDTDHLAVFH			1166
Pan_troglodytes	RYALVVEYANEDA-RQEVGVAVHTPQRAPQQGLLSLHPCLYSTLCRGTARDTDHLAVFH			1166
Macaca_mulatta	RYALVVEYANEDA-RQEVGVAMHTPQRAPQQGLLSLHPCLYSTLCRGTARDTDRLAVFH			1166
Callithrix_jacchus	RYALVVEYANEDA-HQEVGVAVHTPQQGPQQGLLTSLHPCLYSTLCRGTARDSQDHLAVFH			1169
Bos_taurus	PYALVVEYANEDA-RQEVDVAVHTPQRAPQQGVLTLHPCSYSTLCRGTALDAQRHLAIFH			1161
Equus_caballus	DYALVVDYANEDT-RQEVGVAVHTPQRAPQQGALTSLHPCPYSTLCRGAVLDAQHHLVFFH			1166
Pteropus_alecto	RYALVVEYANEDT-RQELGVTMHTPQRAPQQGALTSLHPCLYSMLCRGTALDAQCHLAIFH			1167
Mus_musculus	QYVLLVEYVGEDS-HQEMGVAVHTPQRAPQQGVNLNHPCKYPSSSLCRSPARDTQHHLAIFY			1171
Ornithorhynchus_anatinus	RYALLVEYANEDA-LQG VGAVSTPQLAPQQGM L T L Y P C K Y S F L C R G V L D A Q N R L A A F E			1167
Pavo_muticus	KYVLVVEYANPNA-LHPVGIAVSSPHLAMORGTFTFYPCVYSF L C R G V A V D S Q S R L A T F E			1162
Pavo_cristatus	KYVLVVEYANPNA-LHPVGIAVSSPHLAMORGTFTFYPCVYSF L C R G V A V D S Q S R L A T F E			1162
Gallus_gallus	KYVLVVEYANPNA-LHPVAVAISSPHLAMQQGTFTFYPCVYSF L C R G V A V D S Q S R L A T F E			1162
Anas_platyrhynchos	QYVLLVEYANTNA-LQTGVAVSSPHLAMQQGTFTFYPCVYSF L C R G I A V D S Q S R L A T F E			1170
Chelonia_mydas	RYVLLVEYANKDA-VQRASVAMSSLQLATQQGSLTFHTCDYSFLCRGTVLDSQNRLAAFE			1172
Xenopus_tropicalis	RYVVLLVEYANEEE-VQNTIIITVNSPPHRPQQGTFAFYPCKYSF L C R G V A L D Q H H R V A T F D			1149
Latimeria_chalumnae	GYVLLVEYVNEDESTQTVNVIVNTPGRESQQGTTLTYTCYS-----			956
Rhinatrema_bivittatum	QYLLLLLEYANEES-LEAGIAVTSPRVGMHGAFIFYPCSYSF L C R G L A L D S Q K G L I A F E			1148
1270.....1280.....1290.....1300.....1310.....1320			

[illegible]

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Homo_sapiens	KPPQPIILRDC	QVIPLPPGLPL	THAQDLTP	PAMS---	PAGPRPRPPT	AVDPDAEPT	LLREP			1283
Pan_troglodytes	KPPQPIILRDC	QVIPLPPGLPL	THAQDLTP	PATS---	PAGPQPRPPT	AVDPDAEPT	LLREP			1283
Macaca_mulatta	KPPQPIILRDC	QVIPLPPGLPL	THAQDLMP	PATS---	PTGPOPRPPT	AVDPDVEPT	LLREP			1283
Callithrix_jacchus	KPPQPIVLRDC	QVPLPLPPGLPL	THAQDLTP	PATS---	PTRPQPRPPT	AVDPDAEPT	LLREP			1286
Bos_taurus	KPPQPVLLRDC	QVPLPLPPGLPL	TRSQELTP	GAP---	PPGPQPRPPT	TAADPDAEPT	LLRHP			1278
Equus_caballus	KPPQPIVLRDC	QVPLPLPPGLPL	TRSQELTP	GAP---	PSGPQPRPPT	AVDPDVEPT	LLRHP			1283
Pteropus_alecto	KPPQPIVLRDC	QVPLPPSLPL	THSPELVPG	AA---	PAGPQPRPPT	AVDPDAEPT	LLRHP			1284
Mus_musculus	KPPQPIILKDC	QVPLPPDLPL	THSQELSP	GAP---	PEGPOPRPPT	AVDPNAEPT	LLRHP			1288
Ornithorhynchus_anatinus	KLSQPIVLQEF	KVLPIDPFL	PHAHTVVP	VDP---	PLEPAPRPPT	ASDPAVELI	LILQPP			1284
Pavo_muticus	KLSQSVILEGG	QALPLAPDV	VPLAQAVHV	APAG---	VPLEPAPRPPT	AMDSTTE	LILQPP			1279
Pavo_cristatus	KLSQSVILEGG	QALPLAPDV	VPLAQAVHV	APAG---	VPLEPAPRPPT	AMDSTTE	LILQPP			1279
Gallus_gallus	KHSQSVILEGG	QALPLAPEV	VPLAQAVHV	APAG---	VPLEPAPRPPT	AMDSTTE	LILQPP			1279
Anas_platyrhynchus	KLSQSIILEGG	QALPIASDV	VPLAQAVHV	VPAG---	VPLEPAPRPPT	AVDP	PTAKLIL	QQP		1287
Chelonia_mydas	KLSQSIVLEAG	QALSIPDP	FPLTHIFTV	APTG---	TPTEPSRPPT	AVDSSAE	LILQPS			1289
Xenopus_tropicalis	KPSQSVVLSE	GRGTGSIP	NNIPLSQGF	VPS	SPDQ	QAVPSQ	PETLPP	TAVD-STRLV	HLHPV	1268
Latimeria_chalumnae	KPSQSVILKGG	QTASIP	STLPLIYES	QLTPAD	QPNEPQ	KPRRPPT	TAVD-SG	DLIL	LQSP	1060
Rhinatrema_bivittatum	KPPRSMVLAEG	OLGTIP	AGTPLSHG	FTVT	PAEARAT	PQPP---	STVVD-SK	LLLL	LQFP	1263
139014001410142014301440				

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Homo_sapiens      Q-ATVVFTTHVPTLGRYAFLLHGYQPAHPTFPVEVLINAGRVMQGHANASFCPHGYGCRT 1342
Pan_troglodytes   Q-ATVVFTTHVPTLGRYAFLLHGYQPAHPTFPVEVLINAGRVMQGHANASFCPHGYGCRT 1342
Macaca_mulatta    Q-ATVVFTTHVPTLGRYAFLLHGYQPAHPTFPVEVLINAGRVMQGHANASFCPHGYGCRT 1342
Callithrix_jacchus Q-ATVVFTTHVPSLGRYAFLLHGYQPAHPTFPVEVLINAGRVMQGHANASFCPHGYGCRT 1345
Bos_taurus        Q-GTVVFTTHVPALGRYAFLLHGYQPAHPTFAVEVLINGGRVMQGHANASFCPHGYGCRT 1337
Equus_caballus    Q-GTVVFTTQVPALGRYAFLLHGYQPAHPTFAVEVLINGGRVMQGHANASFCPHGYGCRT 1342
Pteropus_alecto   Q-GTVVFTTHVPALGRYAVLLHGFQPAHPTFVVEVLVNGGRIVQGHANASFCPHGYGCRA 1343
Mus_musculus      Q-GTVVFTTQVPTLGRYAFLLHGYQPVHPSFPVEVLINGGRIVQGHANASFCPHGYGCRT 1347
Ornithorhynchus_anatinus QGTVVLSTHVQTLGRYAFLLHGYQPLHPTFPFIEVLIGGRVWHGQANATFCPHAYGCRS 1344
Pavo_muticus      Q-AAVVLNSRIQNLGRYAFILHYYQPNHPTFPVEVLINGGRIVQGGQTNATFCPHGYGCRS 1338
Pavo_cristatus    Q-AAVVLNSRIQNLGRYAFILHYYQPNHPTFPVEVLINGGRIVQGGQTNATFCPHGYGCRS 1338
Gallus_gallus     Q-AAVVFNSRIQNLGRYAFVILHYYQPNHPTFPVEVLINGGRIVQGGQTNATFCPHGYGCRS 1338
Anas_platyrhynchos Q-DAVVFNSRIQNLGRYAFILHYYQPNHPTFPVEVLINGGRIVQGGQTNATFCPHGYGCRS 1346
Chelonia_mydas    Q-AAAVFNSRIQTLGRYAFVHHYYQPNHPTFPVEVLINGGRIVQGGQAKAFCPHGYGCRS 1348
Xenopus_tropicalis Q-SVVGYNGQVQSPGRYAFIVHYYQPSHQTFATFVRVQGGRVWQGSANATFCPHGYGCRS 1327
Latimeria_chalumnae R-TVVIYNSRIQTLGPYAFILHYYQPNHPTFAFVEVLINGGRIVQGGSANATFCPHGYGCRS 1119
Rhinatrema_bivittatum Q-TGVVYNSRIQTLGRYAFILHYYQPGHPTFQLEVLVNGGRVMQGLANATFCPHAGCRS 1322
      .....1450.....1460.....1470.....1480.....1490.....1500

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Homo_sapiens      LVVCEGQALLDVTHTSELTVTVRVPKGRWLWLDYVLVVPENVYSFGYLREEPLDKSYDFIS 1402
Pan_troglodytes   LVVCEGQALLDVTHTSELTVTVRVPEGRWLWLDYVLVVPENVYSFGYLREEPLDKSYDFIS 1402
Macaca_mulatta    LVVCEGQALLDVTHTSELTVTVRVPEGRWLWLDYVLVVPENVYSFGYLREEPLDKSYDFIS 1402
Callithrix_jacchus LVVCEGQVLLDVTHTSELTVTVRVPEGRWLWLDYVLVVPENTYSSGYLREEPLDKSYDFIS 1405
Bos_taurus        LVVCEGRAILDVTGELTVTVRVPEGRWLWLEYVLVVPEDAYSSSYLREEPLDKSYDFIS 1397
Equus_caballus    LVVCEGQAVLDVTDSSELTVTVRVPEGRWLWLEYVLVVPEDAYSSSYLREEPLDKSYDFIS 1402
Pteropus_alecto   LVLCEGQALLDVTDSSELTVTVRVPEGRWLWLEYVLVVPEDAYSSSYLREEPLDKSYHFFIS 1403
Mus_musculus      LVLCEGQTMLDVTDNELTVTVRVPEGRWLWLDYVLIVPEDAYSSSYLQEEPLDKSYDFIS 1407
Ornithorhynchus_anatinus LVVSENQVVLDTDNELTVTLRVPEGRQLWLDYVLVVPEDGYNPGYLLLEEPLDKSYDFIS 1404
Pavo_muticus      LVVAEDQIVLDVTNDNLMVVVRVPEGQLWLDYILVVPEDSYSSQYLQEEPLDKSYDFIS 1398
Pavo_cristatus    LVVAEDQIVLDVTNDNLMVVVRVPEGQLWLDYILVVPEDSYSSQYLQEEPLDKSYDFIS 1398
Gallus_gallus     LVVAEDQIVLDVTNDNLMVVVRVPEGQLWLDYILVVPEDSYSSQYLQEEPLDKSYDFIS 1398
Anas_platyrhynchos LVVSEDQIILDVTNDNLTIVVVRVPEGQLWLDYILVVPEDSYSSQYLQEEPLDKSYDFIS 1406
Chelonia_mydas    VVVAENQIILDLTDELTVIVRVPAGRQLWLDYILVVPEDSYSSHYLLEEPLDKSYEFIS 1408
Xenopus_tropicalis LVVSENQVVLDTDNELTIVRVPDGRIVWIEYVLVVPEDSYSSSYLVEEPLDKSYHFFIS 1387
Latimeria_chalumnae LVISENQIILDVTDNHLSVTIRVPEGKTLWLDYVLVVPEDSYNSNYLNEEPLDKSYKFFIS 1179
Rhinatrema_bivittatum LVVSENQIVLDVTNDNLSVTIRVPEGRMLWLEYVLVVPEDSYNANYLVEEPMDKSYNFFIS 1382
      .....1510.....1520.....1530.....1540.....1550.....1560

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Homo_sapiens      HCAAQGYHISPSSSSLFCRNAAASLSLFYNNGARPCGCHEVGATGPTCEPFGGQCPCHAH 1462
Pan_troglodytes   HCAAQGYHISPSSSSLFCRNAAASLSLFYNNGARPCGCHEVGATGPTCEPFGGQCPCHAH 1462
Macaca_mulatta    HCAAQGYHISPSSSSLFCRNAAASLSLFYNNGARPCGCHEVGATGPTCEPFGGQCPCHAH 1462
Callithrix_jacchus HCAAQGYHISPSSSSLFCRNAAASLSLFYNNGARPCGCHEVGAMGPTCEPFGGQCPCHAH 1465
Bos_taurus        QCATHGYHISPSSSSAFCRSAATSLSLFYNNGARPCGCHEVGAMSPTEPFGGQCPCHAH 1457
Equus_caballus    HCAITHGYHISPTSSSPFCRNAATSLSLFYNNGARPCGCHEVGATSPTEPFGGQCPCHAH 1462
Pteropus_alecto   HCASQGYHVXXXXXXXFCRDAASLSLFYNNGARPCGCHEAGATGPTCKAFGGQCPCHAH 1463
Mus_musculus      HCATQGYHISPSSSSPFCRNAATSLSLFYNNGARPCGCHEVGAVSPTEPFGGQCPCHAH 1467
Ornithorhynchus_anatinus HCGANGFYHISPASPR-FCQDAASLSLFYNNGARPCGCHEAGAMGRQCPEPFGGQCPCHAH 1463
Pavo_muticus      SCGINSFYINPSTSSRFCDRAISLSLFYNNGAQPCQCHEAGARGSQCEPFGGQCPCKSN 1458
Pavo_cristatus    SCGINSFYINPSTSSRFCDRAISLSLFYNNGAQPCQCHEAGARGSQCEPFGGQCPCKSN 1458
Gallus_gallus     SCGINSFYINPSTSSRFCDRAISLSLFYNNGAQPCQCHEAGARGSQCEPFGGQCPCKSN 1458
Anas_platyrhynchos SCGINSFYINPSTSSRFCDRAISLSLFYNNGAQPCQCHEAGARGSQCEPFGGQCPCKSN 1466
Chelonia_mydas    SCGVNSFYINPTTASKFCRDAISLSLFYNNGAQPCRCHEAGAIRGQCELFGGQCAKSN 1468
Xenopus_tropicalis QCGANSFQSNPANS-KFCRDAISLSLFYNNGAQPCDCHEAGALGTACEPHGGQCNCRPN 1446
Latimeria_chalumnae SCGISSFYINSKAS-SFCRDAISLSVFYNNGAQPCTCHEAGALSSSCEAFGGQCSCKPN 1238
Rhinatrema_bivittatum NCGVNSFHINPLTSSFTFCASISLSLFYNNGAQPCNCHEAGTLGTSCEPFGGQCACRSN 1442
      .....1570.....1580.....1590.....1600.....1610.....1620

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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Homo_sapiens	VIGRDCSRCATGYWGFPNCRP CDCGARLCDELGTGQCICPPRTIPPDCLLCQPOTFGCHPL	1522
Pan_troglodytes	VIGRDCSRCATGYWGFPNCRP CDCGARLCDELGTGQCICPPRTIPPDCLLCQPOTFGCHPL	1522
Macaca_mulatta	VIGRDCSRCATGYWGFPNCRP CDCGARLCDELGTGQCICPPRTVPPECLLCQPOTFGCHPL	1522
Callithrix_jacchus	VIGRDCSRCATGYWGFPNCRP CDCGARLCDELGTGQCICPPRTIPPDCLLCQPOTFGCHPL	1525
Bos_taurus	VIGRDCSRCATGYWGFPNCRP CDCSGRLCDELGTGQCICPPRTIPPDCLVCPOTFGCHPL	1517
Equus_caballus	VIGRDCSRCATGYWGFPNCRP CDCSGRLCDELGTGQCTCPPRTVPPDCIICQPOTFGCHPL	1522
Pteropus_alecto	VIGRDCSRCATGYWGFPNCRP CDCSGRLCDELTSGQCICPPRTVVRPHCTVCPOTFGCHPL	1523
Mus_musculus	VIGRDCSRCATGYWGFPNCRP CDCGARLCDELGTGQCICPPRTVPPDCLVCPQSFCHPL	1527
Ornithorhynchus_anatinus	VIGRDCSRCATGYWGFPNCRP CECGPRLCDEESGQCICPPRTVEPDCVVCQAOTFGCHPL	1523
Pavo_muticus	VIGREC SRCATGYWGFPNCRP CDGTRLCDEVTGQCICPPHTLKPECVVCPEOTFGCHPL	1518
Pavo_cristatus	VIGREC SRCATGYWGFPNCRP CDGTRLCDEVTGQCICPPHTLKPECVVCPEOTFGCHPL	1518
Gallus_gallus	VIGREC SRCATGYWGFPNCRP CDGTRLCDEVTGQCICPPHTLKPECVVCPEOTFGCHPL	1518
Anas_platyrhynchos	VIGREC SRCATGYWGFPNCRP CDGTRLCDEVTGQCICPPHTLKPECIVCEPOTFGCHPL	1526
Chelonia_mydas	VIGREC SRCATGYWGFPNCRP CDGTRLCDEVTGQCICPPHTLKPECVVCPEOTFGCHAL	1528
Xenopus_tropicalis	VIGRDC SRCATGYWGFPNCRP CDGSGRLCDEVTGQCICPPRTIKPDCVVCQAQFGCHPL	1506
Latimeria_chalumnae	VIGRSC SRCATGYWGFPNCRP CNGARLCSEVTGQCICPPHTVKPECMVCEPLTFGCHPL	1298
Rhinatrema_bivittatum	VIGRDC SRCATGYWGFPNCRP CDGPRLCDELGTGRCICPPLTEKPECTVCPOTFGCHPL	1502
1630.....1640.....1650.....1660.....1670.....1680	

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Homo_sapiens	VGCEEENCSGPGIQLDPTCDTDSGQCKCRPNVTGRRCDTCSPGFHHGYPCRCPDCHEA	1582
Pan_troglodytes	VGCEEENCSGPGVQLDPTCDTDSGQCKCRPNVTGRRCDTCSPGFHHGYPCRCPDCHEA	1582
Macaca_mulatta	VGCEEENCSGPGVQLDPTCDTDSGQCKCRPNVTGRRCDTCSPGFHHGYPCRCPDCHEA	1582
Callithrix_jacchus	VGCEEENCSGPGVQLDPTCDTDSGQCKCRPNVSGRRCDTCSPGFHHGYPSCHPCDCHDA	1585
Bos_taurus	VGCEEENCSGPGVQLMDPTCDADSGQCKCRPNVAGRRCDTAPGFHHGFPSCRPDCHEA	1577
Equus_caballus	VGCEEENCSGPGVQLDPTCDTDSGQCKCRPNVAGRRCDTAPGFHHGYPACHPCDCHTA	1582
Pteropus_alecto	VGCEEENCSGPGIRELADPSCDVDSGQCKCRPNVAGRRCDTAPGFHHGYPSCHPCDCHQA	1583
Mus_musculus	VGCEEENCSGPGVQLDPTCDMDSGQCRCPNVAGRRCDTAPGFHHGYPSCHPCDCHEA	1587
Ornithorhynchus_anatinus	VGCEDCNCSRPVQDLSSPDCHLDSGQCRCKPNIVGRRCDICAPGFFGYPNCRQDCHEA	1583
Pavo_muticus	IGCEDCNCSQPGVQLTELGCVDVDSGQCKCKPNIIGRRCDLAPGYYQYPSCHRRCDCHPD	1578
Pavo_cristatus	IGCEDCNCSQPGVQLTELGCVDVDSGQCKCKPNIIGRRCDLAPGYYQYPSCHRRCDCHPD	1578
Gallus_gallus	IGCEDCNCSQPGVQLTELGCVDVDSGQCKCKPNIIGRRCDLAPGYYHYPSCHRRCDCHPD	1578
Anas_platyrhynchos	IGCEDCNCSRQVQLTEPGCDVDSGQCRCKPNVIGRRCDLAPGYYHYPNCRQDCDHPA	1586
Chelonia_mydas	IGCEDCNCSHTGVQLAEFGCDADSGQCRCKPNIIGRRCDVCSPGYYHYHPCRCDCHQA	1588
Xenopus_tropicalis	VGCEEENCSPTGLQNKTEPGCDIQIGQCTCMPNVVGRRRCERCAPGFYGYPACRCPNCHNRD	1566
Latimeria_chalumnae	IGCERCNCSRTGVQLTDPECDRENGQCKCKPNVSGRRCDQCTRGFYNYPNCKRCDCHNEA	1358
Rhinatrema_bivittatum	VGCEEENCSRVGVQEMELGCDLESQCTCKPNVVGRCERCAPGYYDFPNCHRRCDCHQE	1562
1690.....1700.....1710.....1720.....1730.....1740	

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Homo_sapiens	GTAPGVCDPLTGTGCYCKENVOGPKCDQCSLGTFSLSDAANPKGCTRCFCFGATERCRSSSY	1642
Pan_troglodytes	GTAPGVCDPLTGTGCYCKENVOGPRCDQCSLGTFSLSDAANPKGCTRCFCFGATERCRSSSY	1642
Macaca_mulatta	GTAPGVCDPLTGTGCYCKENVOGPRCDQCSLGTFSLSDAANPKGCTRCFCFGATERCRSSSY	1642
Callithrix_jacchus	GTAPGVCDPVTGTGCYCKENVOGPRCDQCSLGTFSLSDAANPKGCTRCFCFGATERCRSSAY	1645
Bos_taurus	GSAPGTC DPLTGTGCYCKENVOGPRCDQCRLGTFSLSDAANPKGCTRCFCFGATDRCRSS TY	1637
Equus_caballus	GSAPGVCDPLTGTGCYCKENVOGPRCDQCRLGTFSLSDAANPKGCTRCFCFGATERCRSSAH	1642
Pteropus_alecto	GSAPGVCDPITGTGCYCKENVOGPRCDQCRLGTFSLSDAANPKGCTRCFCFGATERCRSS TH	1643
Mus_musculus	GTMASVCDPLTGTGCHCKENVOGSRCDQCRVGTFSLSDAANPKGCTRCFCFGATERCGNSNL	1647
Ornithorhynchus_anatinus	GTVPSCDPSTGTGCHCKENVEGARCDQCRLGTFSLD PANPKGCTRCFCFGATDRCRSTER	1643
Pavo_muticus	GTEASVCDPVTGTGCHCKENVEGPRCDQCRLGTFSLDASNPKGCTKCFCFGATNRCRS AVK	1638
Pavo_cristatus	GTEASVCDPVTGTGCHCKENVEGPRCDQCRLGTFSLDASNPKGCTKCFCFGATNRCRS AVK	1638
Gallus_gallus	GTEVSVCDPVTGTGCHCKENVEGPRCDQCRLGTFSLDASNPKGCTKCFCFGATNRCRS AVK	1638
Anas_platyrhynchos	GTEASTCDPVTGTGCHCKENVEGPRCDQCRLGTFSLDASNPKGCTKCFCFGATDRCRSAEK	1646
Chelonia_mydas	GTEVSVCDPVTGTGCHCKENVEGVRCDCRLGTFSLDANNPKGCTKCFCFGATDRCHSAEK	1648
Xenopus_tropicalis	GVELSICDPVTGTGCHCKENVEGLTCDHCRLGT FYLDAANPKGCTRCFCFGATDRCHT ASK	1626
Latimeria_chalumnae	GTQADICH PVTGTGCHCKENVEGVRCDCRLGT FHLD PANPKGCTSCFCFGATDRCRS SEK	1418
Rhinatrema_bivittatum	GTEPGICDSVTGTGCHCKENVEGLKCEQCKLGT FYLDAGNPKGCTRCFCFGATDRCHT SK	1622
1750.....1760.....1770.....1780.....1790.....1800	

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Homo_sapiens	TRQEFVDMEGWVLLSTDRQVVPHERQPGTEMLRADLRHVPEAVPEAFPELYWQAPPSYLG	1702
Pan_troglodytes	TRQEFVDMEGWVLLSTDRQVVPHERQPGTEMLRADLRHVPEAVPEAFPELYWQAPPSYLG	1702
Macaca_mulatta	TRQEFVDMEGWVLLSTDRQVVPHERRPGTEMLRADLRHVPEAVPEAFPELYWQAPPSYLG	1702
Callithrix_jacchus	TRQEFMDMDGWVLLSTDRQVVPHERRPGTEVLHADLR----QVPETFPPELYWQAPPSYLG	1701
Bos_taurus	ARREFVDMEGWVLLSGDRQVVPHK-RQEA LMLRADLQ----RVPEAIPPELYWQAPPSYLG	1692
Equus_caballus	GRWEYVDMEGWVLLSTDRQVVPHELRAEAE L LHADLR----HVPEAFPELYWQAPPSYLG	1698
Pteropus_alecto	TRQELVDMQGWVLLSGDRQVVPHELRQAEAE L LHADLR----HAPDALTELYWQAPPSYLG	1699
Mus_musculus	ARHEFVDMEGWVLLSSDRQVVPHEHRPEIEL LHADLR----SVADTFSELYWQAPPSYLG	1703
Ornithorhynchus_anatinus	SRGQFIDMQGWVLLTSDRQEVPTSLHL DAGLVHADLR---NVPEAYQELYWQAPPSYLG	1699
Pavo_muticus	YRTEFMDMNGWVLLMSSDRQEVPTALNLREQL LHADLR---NLLDAYQELYWVAPSSYHG	1694
Pavo_cristatus	YRTEFMDMNGWVLLMSSDRQEVPTALNLREQL LHADLR---NLLDAYQELYWVAPSSYHG	1694
Gallus_gallus	YRAEFIDMNGWVLLMSSDRQEVPTALSRLREQL LADLR---NLLDAYQELYWVAPSSYLG	1694
Anas_platyrhynchos	YRAEFIDMNRWVLLSSDRQEVPTSLSLQEL LADRLK---NLPDAYQELYWVAPSSYLG	1702
Chelonia_mydas	YRVEFLNMKGWVLLSGDRQEVTTSLRVEEELIHADLK---NIPEAYQELYWHAPSSYLG	1704
Xenopus_tropicalis	HRAEFS DMNGWVLVGGDRQEVETSVRPEEGLVDANLE---DVPDVQEFYWHAPRPSYLG	1682
Latimeria_chalumnae	FRTEFIDMTGWVLLNGDRQEMEVSFQPEEKLVTANLK---DIFPDNQEMYWRAPRPYLG	1474
Rhinatrema_bivittatum	SRAELVDMSGWVLLSTDRQIPLSFSL E EGLVEADLR---DVPDVQELYWHAPDSYLG	1678
1810.....1820.....1830.....1840.....1850.....1860	

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Homo_sapiens	DRVSSYGGTLLRYELHSETQRGD-VFVPMESRPDVLVQGNQMSITFLEPAYPTPGHVHRGQ	1761
Pan_troglodytes	DRVSSYGGTLLRYELHSETQRGD-VFVPMESRPDVLVQGNQMSITFLEPAYPTPGHVHRGQ	1761
Macaca_mulatta	DRVSSYGGTLLRYELHSETQRGD-VFVPTESRPDVLVQGNQMSITFLEPAYPMPGHIHRGQ	1761
Callithrix_jacchus	DRVSSYGGTLLRYELHSEQRGD-VFVPMESRPDVLVQGNQMSIAFLEPAYPMPGHAHHRQ	1760
Bos_taurus	DRVSSYGGTLLRYELHSETQRGD-VFNPMESRPDVLVQGNQMSITFLEPVYPAPGDVHHGA	1751
Equus_caballus	DRVSSYGGILRLRYEVHSETQRGD-VFIPTESRPDVLVQGNQMSITFLEPVYPAPGHVHRGQ	1757
Pteropus_alecto	DRVSSYGGTLLHYELHSESQRGD-VFVPTESRPDVLVQGNQMSIMFLEPVYPTPGHVHRRO	1758
Mus_musculus	DRVSSYGGTLLHYELHSETQRGD-IFIPYESRPDVLVQGNQMSIAFLELAYPPPQQVHRGQ	1762
Ornithorhynchus_anatinus	DRVSSYGGFLRYELHSEIQRGD-VYIPVEVRPDVILKGNQMSLSFLEGAYPAPGDVHRGQ	1758
Pavo_muticus	DRVSSYGGHLRYELHSDPRRGD-VFIPMESRPDVLVQGNQMSIMFLEGSYPSPGEVHEGQ	1753
Pavo_cristatus	DRVSSYGGHLRYELHSDPRRGD-VFIPMESRPDVLVQGNQMSIMFLEGSYPSPGEVHEGQ	1753
Gallus_gallus	DRVSSYGGHLRYELHSDPRRGD-VFIPMESRPDVLVQGNQMSIMFLESSYPSPGEIHEGQ	1753
Anas_platyrhynchos	DRVSSYGGHLRYELHSDPRRGD-VFIPMESRPDVLVQGNQMSIMFLEGSYPSPGGEVHEGQ	1761
Chelonia_mydas	DRVSSYGGYLLRYELRSDTRRGD-VFIPMDPRPDVILKGNQMSIMFLEGTYPSPGEVHEGR	1763
Xenopus_tropicalis	DRVSSYGGFLRYELHSKAIRGQDPNIPVERRPDIILKGNQMSIAHLQTRYPMSEHYHGR	1742
Latimeria_chalumnae	DRVSSYGGFLRYQLNSEAMRGDLFPVPVEARPDVILKGNQMTIMYLEKVPNVGEGQHHR	1534
Rhinatrema_bivittatum	DRVSAYGGFLRYHLHAKAIRGDAAFIPVEESRPDVLVQGNQMSIAFLESAYPTAGDHHGQ	1738
1870.....1880.....1890.....1900.....1910.....1920	

	:*:*:*:* * * * ******: *:*:* :*** :: :.:* * :* *:	
Homo_sapiens	LQLVEGNFRHTEIRNTVTSREELMMVLASLEQLQIRALFSQISSAVFLRRVALEVASP---	1818
Pan_troglodytes	LQLVEGNFRHTEIRNTVTSREELMMVLASLEQLQIRALFSQISSAVSLRRVALEVASP---	1818
Macaca_mulatta	LQLVEGNFRHTEIRNTVTSREELMMVLASLEQLQIRALFSQISSAVSLRRVALEVASP---	1818
Callithrix_jacchus	LQLVEGNFRHTEIRNTVTSREELMMVLASLEQLQIRALFSQTSSAVSLGRVALEVASP---	1817
Bos_taurus	LQLVEGNFRHMETHTSVTSREELMMVLAGLEQLHIRALFSQASSAVSLRRVALEVASE---	1808
Equus_caballus	LQLVEGNFRHAETHSAVSREELMMVLAGLEQLQIRALFSQISSAVSLRRVALEVASE---	1814
Pteropus_alecto	LQLVEGNFRHAETHSAVSREELMMVLASLEQLHIRALFSKMSAVSLRRVALEVASE---	1815
Mus_musculus	LQLVEGNFRHLETHNPVSREELMMVLAGLEQLQIRALFSQTSSSVSLRRVVLEVASE---	1819
Ornithorhynchus_anatinus	VQLVEGNFRHTEETHNPASREELMMVLAGLEQLQIRALFSQISSAVSLQQVVLELVSELA	1818
Pavo_muticus	LRLVESNFRHTEETHNPVSREELMMVLANLEQLQIRALFSQLSSSVSLRRVVLEIATD---	1810
Pavo_cristatus	LRLVESNFRHTEETHNPVSREELMMVLANLEQLQIRALFSQLSSSVSLRRVVLEIATD---	1810
Gallus_gallus	LQLVESNFRHTEETHNPVSREELMMVLANLEQLQIRALFSQLSSSVSLRRVVLEIATD---	1810
Anas_platyrhynchos	LQLVEGNFRHTEETHNPVSREELMMVLANLEQLQIRALFSQLSSSVSLRRVVLEIATD---	1818
Chelonia_mydas	LQLVEGNFRHTQTETHNPVSREELMMVLANLEQLQIRALFSQLASSVSLRRVVLEITLTE	1820
Xenopus_tropicalis	IHLVEGNFVHVQTYNPVSREELMMVLANLEQLLIRALNSQSSSSVSLRRVFLDIGHE---	1799
Latimeria_chalumnae	VQLLEGDFRHAQETHNPVSREELMMVLANLEQLQIRALHSQSAKSVSLGRVSLLEVATD---	1591
Rhinatrema_bivittatum	IQLVESNFRHTRTHNPVSREELMMVLSKLQLHIRALNAQSSSVSLRRVVLEVASE---	1795
1930.....1940.....1950.....1960.....1970.....1980	

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	..:.*:***.******:	
Homo_sapiens	--AGQGALASNVELCLCPASVYRGDSQCECAPGFYRDVKGLFGLGRCVPCQCHGHSDRCLPG	1876
Pan_troglodytes	--AGQGALASNVELCLCPASVYRGDSQCECAPGFYRDVKGLFGLGRCVPCQCHGHSDRCLPG	1876
Macaca_mulatta	--AGQGTILASNVELCLCPASVYRGDSQCECAPGFYRDVKGLFGLGRCVPCQCHGHSDRCLPG	1876
Callithrix_jacchus	--GGQGALATNVELCLCPASVYRGDSQCECAPGFYRDVKGLFGLGRCVPCQCHGHSDRCLPG	1875
Bos_taurus	--MGGGPPASNVELCMCPANYLGDSQCECAPGYRDVKGLFGLGRCVPCQCHGHSDRCLPG	1866
Equus_caballus	--LGGGPPASNVELCMCPASVYRGDSQCECAPGYRDVKGLFGLGRCVPCQCHGHSDRCLPG	1872
Pteropus_alecto	--AGGGPPASNVELCMCPANYLGDSQDCAPGYRDIKGFPLGRCVPCQCHGHSDRCLPG	1873
Mus_musculus	--AGRGPPASNVELCMCPANYRGDSQCECAPGYRDTKGLFGLGRCVPCQCHGHSDRCLPG	1877
Ornithorhynchus_anatinus	ESAGAGPQASNVELCMCPANYLGDSQCECAPGYRDTKGLFGLGKCVPCHCNGHSDRCLPG	1878
Pavo_muticus	--TATAVPASNVELCFCPANYLGDSQCECAPGYRDTKGLFGLGKCIPCHCNGHSDQCLPG	1868
Pavo_cristatus	--TATGVPASNVELCFCPANYLGDSQCECAPGYRDTKGLFGLGKCIPCHCNGHSDQCLPG	1868
Gallus_gallus	--TATGVPASNVELCFCPANYLGDSQCECAPGYRDTKGLFGLGKCIPCHCNGHSDQCLPG	1868
Anas_platyrhynchos	--TATGIQASNVELCFCPANYQGDSCQCECAPGYRDTKGLFGLGKCIPCHCNGHSDQCLPG	1876
Chelonia_mydas	--TSVGIRASNVELCLCPANYRGDSQCECAPGYRDTKGLFGLGKCVPCHCNGHSDQCLPG	1878
Xenopus_tropicalis	--SSVGVRAPLEVELCMCPANYLGDSQCECAPGYRDTKGLFGLGKCVPCNCGGHSQCLPG	1857
Latimeria_chalumnae	--TAMGVSTSYVEICMPANYRGDSQCN-----	1617
Rhinatrema_bivittatum	--TGLGHKASNMELCMCPANYRGDSQCECAPGYRDTKGLFGLGKCVPCNCSGRHSQCLPG	1853
1990.....2000.....2010.....2020.....2030.....2040	

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Homo_sapiens	SGVVCVDCQHNTTEGAHCERCQAGFVSSR-DDPSAPCVSCPCPLSVPSNNFAEGCVLRGGRT	1935
Pan_troglodytes	SGVVCVDCQHNTTEGAHCERCQAGFVSSR-EDPSAPCVSCPCPLSVPSNNFAEGCVLRGGRT	1935
Macaca_mulatta	SGICVDCQHNTTEGAQCERCQAGFVSSR-EDPSAPCVSCPCPLSVPSNNFAEGCVLRGGRT	1935
Callithrix_jacchus	SGICVGCQHNTTEGPHCEHCQAGFVSSG-EDPSAPCVSCPCPLSVPSNNFAEGCVLRGGRT	1934
Bos_taurus	SGVCIGCQHNTTEGDHCERCQAGFVRTGSEDPAAPCISCPCLAVPSNNFATGCILRGGRT	1926
Equus_caballus	SGVVCVGCQHNTTEGDHCECQAGFVRSGEDPAAPCVSCPCPLSVPSNNFAVGCILRGGRT	1932
Pteropus_alecto	SGVVCVGCQHSTTEGDHCERCQAGFVRSGEDPAAPCVSCPCPLAVPSNNFAMGCVSRGGRT	1933
Mus_musculus	SGICVGCQHNTTEGDQCERCRCFVSSDPSNPASPCVSCPCPLAVPSNNFADGCVLRNGRT	1937
Ornithorhynchus_anatinus	SGICVNCCQHNTTEGDHCERCQDGFLLNGTQDQPAHCVGCPCPLSVPSNNFAIGCVHKGST	1938
Pavo_muticus	SGICLNCCQHNTTEGDHCECCKDGYVGSHNADGSLQCVGCPCPLSVASNNFAIGCVHKGST	1928
Pavo_cristatus	SGICLNCCQHNTTEGDHCECCKDGYVGSHNADGSLQCVGCPCPLSVASNNFAIGCVHKGST	1928
Gallus_gallus	SGICLNCCQHNTTEGDHCECCKDGYVGSRNADGSLQCVGCPCPLSVASNNFAIGCVHKGST	1928
Anas_platyrhynchos	SGICLNCCQHNTTEGDHCECCKDGYVGSHS AEGSLQCVGCPCPLSVASNNFAVGCVRKGSNM	1936
Chelonia_mydas	SGICINCCQHNTTEGDHCERCCKDGYVGNFSLGGLQCMGCPCLSVASNNFAIGCVHKGSTM	1938
Xenopus_tropicalis	TGACVKCCQHNTTEGDRCCERCCKDGFVSNGTVDGSLQCVSCPCPLSVPSNNFAIGCFQRGSTF	1917
Latimeria_chalumnae	-----CQHHTAGDHCERCRCNRFVGNLIRGEPLTCSGCPCLQVASNNFALGCVDRGSTM	1671
Rhinatrema_bivittatum	SGVVCVNCQYNTTEGEHCERCRCREGFVMNATAEKLHCVGCPCPLSVASNNFAIGCVHKPLTT	1913
2050.....2060.....2070.....2080.....2090.....2100	

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Homo_sapiens	QCLCKPGYAGAS	CERCAPGFFGNPLVLGSS	QCPDCSGNGDPNLLFS	SDCDPLTGACRGCL 1995
Pan_troglodytes	QCLCKPGYAGAS	CERCAPGFFGNPLVLGSS	QCPDCSGNGDPNLLFS	SDCDPLTGACRGCL 1995
Macaca_mulatta	QCLCKPGYAGAS	CERCAPGFFGNPLVLGSS	QCPDCSGNGDPNLLFS	SDCDPLTGACRGCL 1995
Callithrix_jacchus	QCLCKPGYAGTS	CERCAPGFFGNPLVLGSS	QCPDCSGNGDPNLLFS	SDCDPLTGACRGCL 1994
Bos_taurus	QCLCKPGYAGAS	CERCAPGFFGNPLVLGSS	QCPDCSGNGDPNMLF	SDCDPLTGTCTCGCL 1986
Equus_caballus	QCLCKPGYAGAS	CERCAPGYFGNPLVLGSS	QCPDCSGNGDPNMLF	SDCDPLTGTCTCGCL 1992
Pteropus_alecto	QCLCKPGYAGTS	CERCAPGFFGNPLVLGSS	QCPDCSGNGDPNLLFK	SDCDPLTGACRGCL 1993
Mus_musculus	QCLCRPGYAGAS	CERCAPGFFGNPLVLGSS	QCPDCSGNDPNMIF	SDCDPLTGACRGCL 1997
Ornithorhynchus_anatinus	QCLCRPGYAGAS	CERCAPGYGNPMVIGSS	QPCESGNGDTNTLFO	ECDPLTGACTGCM 1998
Pavo_muticus	QCLCKPGYAGPNC	CERCAPGYGNPLVIGSS	QCPDCSGNTDPNMLF	SSCDSLTTGTCTGCM 1988
Pavo_cristatus	QCLCKPGYAGPNC	CERCAPGYGNPLVIGSS	QCPDCSGNTDPNMLF	SSCDSLTTGTCTGCM 1988
Gallus_gallus	QCLCKPGYAGPNC	CERCAPGYGNPLVIGSS	QCPDCSGNTDPNMLF	SSCDSLTTGTCTGCM 1988
Anas_platyrhynchos	QCLCKPGYAGPNC	CERCAPGYGNPLVIGSS	QCPDCSRNTDPNMLF	SSCDSLTTGACTGCM 1996
Chelonia_mydas	QCLCKPGYAGAM	CERCAPGYGNPLVIGSS	QCPDCSENTDPNMLF	SDCDSLTTGTCTGCM 1998
Xenopus_tropicalis	QCLCRLGYAGAN	CERCAPGFYNPMVIGSS	CKPCDCNGNTDSNMLF	SDCDPLFGTCSSCM 1977
Latimeria_chalumnae	QCLCKPGYAGSK	CERCAPGYGNPMVIGSS	QCPDCSNGNTDSNMLF	SHCDALTVGCIGCM 1731
Rhinatrema_bivittatum	QCLCMPGYAGR	CERCAPGYGNPMVIGSS	CRPCDCSNADPNLLF	SECDPLTGVCMGCM 1973
2110.....	2120.....	2130.....	2140.....2150.....2160

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Homo_sapiens      RHTTGPRCEICAPGFYGNALLPGNCTRCDCPCGTEACDPHSGHCLCKAGVTGRRCDRCQ 2055
Pan_troglodytes   RHTTGPRCEICAPGFYGNALLPGNCTRCDCAPCGTEACDPHSGHCLCKAGVTGRRCDRCQ 2055
Macaca_mulatta    RHTTGPRCEICAPGFYGNALLPGNCTRCDCAPCGTEACNPHSGQCLCKAGVTGRRCDRCQ 2055
Callithrix_jacchus RHTTGPRCELAPGFYGNALLPSNCTRCDCPCGTEACDPHSGRCLCKVGVGTGQRCDRCQ 2054
Bos_taurus        RHTTGPRCESCAPGFYGNALLPGNCTRCDCSPCGTEACDPHSGHCLCKAGVTGLRCDRCQ 2046
Equus_caballus     RHTTGPRCESCAPGFYGNALLPGNCTRCDCSPCGTEADPQSGQCLCKAGVTGQPCDRQ 2052
Pteropus_alecto   RHTAGPHCETCAPGFYGDALLPGNCSRCDCSPCGTETCDPRSGRCLCKAGVTGPRCDRCQ 2053
Mus_musculus       RHTTGPHCERCAPGFYGNALLPGNCTRCDCSPCGTETCDPQSGRCLCKAGVTGQRCDRCQ 2057
Ornithorhynchus_anatinus YHTAGPHCEICAPGYYGDALVAKNCTRCDCSTCGTESCEPQTGQCLCKAGVTGLRCDRCQ 2058
Pavo_muticus       HHTAGARCEVCAPGFYGDAAVAKNCTQCNCSPCGTDSCHPQTGQCFCKAGVTGQHCDHCE 2048
Pavo_cristatus     HHTAGARCEVCAPGFYGDAAVAKNCTQCNCSPCGTDSCHPQTGQCFCKAGVTGQHCDHCE 2048
Gallus_gallus      HHTAGVRCEVCAPGFYGDAAVAKNCTQCNCSPCGTDSCHPQTGQCFCKAGVTGQHCDHCE 2048
Anas_platyrhynchos HHTAGARCEVCAPGFYGDAAVAKNCTQCNCSPCGTDSCHPQTGQCFCKAGVTGQHCDRCQ 2056
Chelonia_mydas     HNTAGPRCEVCAPGYHGDAAVAKNCTRCNCLPCGTESCDPRTGRCLCKPGVTGQHCDCCQ 2058
Xenopus_tropicalis FNTAGTHCEVCAPGFYGDAAVAKNCTRCDCSPCGTQSCDSRTGRCSRPGVTGSRCDRC 2037
Latimeria_chalumnae HNTAGPHCEICAPGYYGDAAVAKNCSNCDSPCGTESCDHRTGLCLCKPGVTGVRCDRC 1791
Rhinatrema_bivittatum FNTAGARCEICAPGYYGDAAVAKNCTKCSGSCPGAASCDPQTGQCLCKPGVTGQRCDTCQ 2033
.....2170.....2180.....2190.....2200.....2210.....2220

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Homo_sapiens      EGHFGFDGCGGCRPCACGPAAEGSECHPQSGQCHCRPGTMGPQCRECAPGYWGLPEQGC 2115
Pan_troglodytes   EGHFGFDGCGGCRPCACGPAAEGSECHPQSGQCHCRPGTMGPQCRECAPGYWGLPEQGC 2115
Macaca_mulatta    EGHFGFEGCGGCRPCACGPAAEGSECHPQSGQCHCRPGTMGPQCRECAPGYWGLPEQGC 2115
Callithrix_jacchus EGHFGFDGCVGCRPCACGPAAEGSECHPQSGQCHCQPGTRGPQCRECAPGYWGIPEQGC 2114
Bos_taurus        EGHFGFEGCGGCRPCACGPAAEGSECHPQSGQCHCRPGTGPGPQCRECAPGHWGLPEQGC 2106
Equus_caballus     EGHFGFAGCRGCRPCACGPAAEGSECHPQSGQCHCRPGTGGLQCRECAPGHWGLPEQGC 2112
Pteropus_alecto   DGHFGFEGCGGCRPCACGPAAEGSECHPQSGQCHCRPGTAGLQCRECAPGHWGLPEQGC 2113
Mus_musculus       EGYFGEFQCGGCRPCACGPAAGSECHPQSGQCHCQPGTTGPPQCLECAPGYWGLPEKGC 2117
Ornithorhynchus_anatinus EGHFGFDSGSGCRCDGVAAGVPACHPQSGQCQCRPGVTGAQCQCAPGYWGLGVHGCA 2118
Pavo_muticus       EGYGFEGCGGCRCDGVAAGVSSCHAQTGQCHCLPGVSGSRCHQCAPGYWGFSEGRGCR 2108
Pavo_cristatus     EGYGFEGCGGCRCDGVAAGVSSCHAQTGQCHCLPGVSGSRCHQCAPGYWGFSEGRGCR 2108
Gallus_gallus      EGYGFEGCGGCRCDGVAAGVSSCHVQTGQCSCLPGSQRPQRCQCAPGYWGFSEGRGCR 2116
Anas_platyrhynchos EGYGFEGCGGCRCDGVAAGVSSCHVQTGQCSCLPGSQRPQRCQCAPGYWGFSEGRGCR 2116
Chelonia_mydas     DGYYGYHGCSCGCRKCDIGSIGTSCHAETGQCSCQPGVTGLRQCQCAPGYWGLSGHGCT 2118
Xenopus_tropicalis EGYGYNGCSGCHKCSAAGSASARCDPVSGQCLCLPGITGAQCQCAPGYWGFSPSGCT 2097
Latimeria_chalumnae DGYYGYDRCAGCKCDIAALSPTCHTONGQCLCQPGVNGARQCQCAPGYWAYGANGCT 1851
Rhinatrema_bivittatum AGYYGYDGCAGCRRCECDAAASVGTTCHPQSGQCDQHG VNGLRQCQCAPGYWGFSGASGR 2093
.....2230.....2240.....2250.....2260.....2270.....2280

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Homo_sapiens      RCQCPGGRCDPHTGRCTCPPGLSGERCDCSQQHQVVPVPGGPVGHSHHCEVCDHCVVLLL 2175
Pan_troglodytes   RCQCPGGRCDPHTGRCTCPPGLSGERCDCSQQHQVVPVPGGPVGHSHHCEVCDHCVVLLL 2175
Macaca_mulatta    RCQCPGGRCDPHTGRCTCPPGLSGERCDCSQQHQVVPVPGGPVGHSHHCEVCDHCVVLLL 2175
Callithrix_jacchus RCQCPGGRCDPHTGRCTCPPGLSGERCDCSQQHQVVPVPGGPVGHSHHCEVCDHCVVLLL 2174
Bos_taurus        RCQCPGGRCDPHTGRCTCPPGLSGERCDCSQQHQVVPVPGGPVGHSHHCEVCDHCVVLLL 2166
Equus_caballus     RCQCPGGRCDPHTGRCTCPPGLSGERCDCSQQHQVVPVPGGPVGHSHHCEVCDHCVVLLL 2172
Pteropus_alecto   RCQCPGGRCDPHTGRCTCPPGLSGERCDCSQQHQVVPVPGGPVGHSHHCEVCDHCVVLLL 2173
Mus_musculus       RCQCPGGRCDPHTGRCTCPPGLSGERCDCSQQHQVVPVPGGPVGHSHHCEVCDHCVVLLL 2177
Ornithorhynchus_anatinus RCQCPGGRCDPHTGRCTCPPGLSGERCDCSQQHQVVPVPGGPVGHSHHCEVCDHCVVLLL 2176
Pavo_muticus       KCECRGGS CDPRTGECTCSNGLTGKQCDVCMHNYEIPVANGP--DSMRCEVCDSCVLLLL 2166
Pavo_cristatus     KCECRGGS CDPRTGECTCSNGLTGKQCDVCMHNYEIPVANGP--DSMRCEVCDSCVLLLL 2166
Gallus_gallus      KCECRGGS CDPRTGECTCSNGLTGKQCDVCMHNYEIPVANGP--DSMRCEVCDSCVLLLL 2166
Anas_platyrhynchos KCECRGGS CDPRTGECTCSNGLTGKQCDVCMHNYEIPVANGP--DSMRCEVCDSCVLLLL 2174
Chelonia_mydas     KCQCKGGS CDPRTGECTCSNGLTGKQCDVCMHNYEIPVANGP--DSMRCEVCDSCVLLLL 2176
Xenopus_tropicalis KCHCKGGS CDPRTGECTCSNGLTGKQCDVCMHNYEIPVANGP--DILKCEPCDSCVVTLL 2155
Latimeria_chalumnae KCNCKGGS CDPRTGECTCSNGLTGKQCDVCMHNYEIPVANGP--DILKCEPCDSCVVTLL 1909
Rhinatrema_bivittatum KCQCKGGS CDPRTGECTCSNGLTGKQCDVCMHNYEIPVANGP--DAVRCEPCDSCVLLLL 2151
.....2290.....2300.....2310.....2320.....2330.....2340

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Homo_sapiens      DDLERAGALLPAIHEQLRGINASSMAWARLHRLNASIADLQSQLRSPLGPRHETAQOLEV 2235
Pan_troglodytes   DDLEQAGALLPAIREQLRGINASSMAWARLHRLNASIADLQSQLRSPLGPRHETAQOLEV 2235
Macaca_mulatta    DDLERAGTLLPAIREQLRGINASSVAWARLHRLNASITDLQSQLRSPLGPRHETAQOLEV 2235
Callithrix_jacchus DDLEQADVLLPAIRQQLRSINASSAAWTRLHRLNASITNLQSQLRIPLGPRHETAHRLV 2234
Bos_taurus        DDLERAGALLPAIREQLSGINASSVAWARLHRLNASITDLQNQLRSPPGPHYETTOLEA 2226
Equus_caballus    DDLERAGALLPAIREQLHGYNASSAAWARLHRLNASIADLQSQLSPLGPRHETTORLEA 2232
Pteropus_alecto   DDLERAGALLPAIRDQLRTVSSAAAWAGLHRLNASIADLKGQLRGPPGPPHEPEQQLGM 2233
Mus_musculus      DDLERAGALLPAIREQLQGINASSAAWARLHRLNASIADLQSKLRSPPGPRYQAAQQLQT 2237
Ornithorhynchus_anatinus DDLQVRDALLPAIRLQLSSLNASSVAWARLHMLNISIASLATQLRDPGPGWQDSRMKLEH 2236
Pavo_muticus      EDLQSIEMSFPSIRSOLVNLSSASSIAWARLHSLNNTMATVANQLREYHRAMNKVORADE 2226
Pavo_cristatus    EDLQSIEMSFPSIRSOLVNLSSASSIAWARLHSLNNTMATVANQLREYHRAMNKVORADE 2226
Gallus_gallus     EDLQSIEMSFPSIRSOLLNLSSASSIAWARLHSLNSTMATVANQLREYHRAMNKVORADE 2226
Anas_platyrhynchos EDLQSIEMSLPSIRNLVNLSSASSIAWARLHGLNSTLAAIANOMREYQRAVSKVORADE 2234
Chelonia_mydas    EDLQKIEASFPIIRNLINLNASSIAWARLHGLNSSVKNVSNHLLREYQRSMNVRVKQKADE 2236
Xenopus_tropicalis EDLDRNGHFLPGIGDQLANLSVSAIAWNHLSALNTSIANLTTELWLQYQGTINGIKDKADD 2215
Latimeria_chalumnae DELLR-----YQNSLDSAKONTDE 1928
Rhinatrema_bivittatum HDLERMGDLFPGIRALSNLSASSIAWARLHGLNSSIENANLLLRYSMMKGGEKAGD 2211
.....2350.....2360.....2370.....2380.....2390.....2400

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Homo_sapiens      LEQOSTSLGQDARRLGQAVGTRDQASQLLAGTEATLGHAKTLLAAIRAVDRITLSELMSSQ 2295
Pan_troglodytes   LEQOSTSLGQDARQLGGQAVGTRDQASQLLAGTEATLGHAKMLLAAIRAVDRITLSELMSSQ 2295
Macaca_mulatta    LEQOSTSLGQDAQQLDSQAAGTREQASRLLAGTEATLGRAKTLLAAIRAVDRITLSELMSSQ 2295
Callithrix_jacchus LEQQSESLRQDAQRLGGQAGTRDQAEIRLLAGTDVTLGQAKMLLATIRAVDSITLSELTSSQ 2294
Bos_taurus        LEROTSSILGQDTQHLDGQATARAQAGQLDSTEATLGRAQTLLAAIRAVDLALSELESQ 2286
Equus_caballus    LERQSSSLGQDTQRLDGQATGAQARASQLDSTEASLGRVQTLAAIRAVDSALRELESQ 2292
Pteropus_alecto   LEQQSASLGQDVQRLDGQATGARAQAGRLVDSTEATLGRAQTLLVAIRAVEQALSELALQ 2293
Mus_musculus      LEQQSIISLQODTERLGSQATGVQGGQAGQLDTESTLGRAQKLLSVRAVGRALNELASR 2297
Ornithorhynchus_anatinus LEQQSVVLDEGRLLHSKAGEARTQADNLRQSTEDIRQAETLLTSVRAMEQDLADLVSO 2296
Pavo_muticus      LEDENTDLTQDLNALQHRMMTHRKANHLEQHTKETYQORGEQLLLTIQSIQKSIGDLARQ 2286
Pavo_cristatus    LEDENTDLTQDLNALQHRMMMAHSKANHLEQHTKETYQORGEQLLLTIQSIQKNIGDLVRO 2286
Gallus_gallus     LEDENTDLTQDLNALQHKMTMTHRKANHLDENTRETYQORGEQLLLDIRSIQKSIGDLVRO 2294
Anas_platyrhynchos LEDENAELTQDLNALQHKATMTHRKANHLEQHTKETYQRAEHLPMMSIQGILDSIADLVHQ 2296
Chelonia_mydas    MEDHSISLAQDLDALQDKVNMNRTAISVQRATKNTHQRAGDLLNKVQTLQCNVTQGMVEQ 2275
Xenopus_tropicalis LENESMNLIQDLVDLEEKVTMANRKADKLGATQETFFQQAEDLLNRAMGITNSIFDIMEQ 1988
Latimeria_chalumnae LEEESRSVARDLDSLHEKVTAANRKASSVQKTEETHEEATDLLKNLTSLQSSILGLKDO 2271
Rhinatrema_bivittatum .....2410.....2420.....2430.....2440.....2450.....2460

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Homo_sapiens      TGHGLGLANAS-APSGEQLLRTLAEVERLLWEMRARDLGAPQAAAAEELAAQRLRLARVQE 2354
Pan_troglodytes   TGHGLGLANAS-APSGEQLLRTLAEVERLLWEMRARDLGAPQAAAAEELAAQRLRLARVQE 2354
Macaca_mulatta    TGHGLGLANAS-ALSGEQLLRTLAEVERLLWEMRARDLGAPRAAAAEELAAQRLRLARVQE 2354
Callithrix_jacchus MGHGLGLNAS-APSGEHLRRTMAEVERLLREMQARDLGAPRLAAAEELAAVQRLRLARVQE 2353
Bos_taurus        TDRLAPANAS-VPSGEQLRRVLAEVERLLQEIQARDLGVPRAAAAEELREAQRLLDREVQE 2345
Equus_caballus    TARLSPANAS-APSGEQLRRTVAEVERLLREMRARDLGAPRAAAAEELGEAQLRLARVQE 2351
Pteropus_alecto   TDRLSPANAS-VPSGEQLRRTLAQVERLLREMRVRDLGAPRAAAAEELGEARKLLARVQE 2352
Mus_musculus      MQQSPGDAL-VPSGEQLRWLAEVERLLWDMRTRDLGAQGAAAEELAEALRLMARVQE 2356
Ornithorhynchus_anatinus MDRLSPSNAS-TASGEELRQMAAAERALEMRERDLRGORRVADGELGEAQILDRIRS 2355
Pavo_muticus      MATFGAANMS-TTSTEEFRQKMAEVERMLREMKERSLSGQEELARREHKEAQKLLHRVRS 2345
Pavo_cristatus    MATFGAANMS-TTSTEEFRQKMAEVERMLREMKERSLSGQEELARREHKEAQKLLHRVRS 2345
Gallus_gallus     MATFGAANTS-TTSTEEFRQKMAEVERMLREMKQRSLSGQEELARREHKEAQKLLHRVKN 2345
Anas_platyrhynchos MAQFGAANAS-TTSTEEFRQKMAEVERMLREMKERNLGSQEELARREHEEAQKLLHRVKH 2353
Chelonia_mydas    MDKLGTDATS-MASSEEFWQKMAEVERMLKEMKERDFLSQKGVAEREHEKAQKLLHRVKS 2355
Xenopus_tropicalis LKKIGSSSSSNVTSTEEFRIMSEVERMMRELRLARDFQHPSHLARKEYNESIKLLNRVKA 2335
Latimeria_chalumnae MNRTASANS-TPSSEEFYRQKLAIEVKMLNEMKARAFGDOTTRAKGEQQAARKLLERVKE 2047
Rhinatrema_bivittatum MGKIGTSESEGATPSEEFWQKMAEVERMLTEMKARDFSDQKGLADTELEKARTLLDQVKN 2331
.....2470.....2480.....2490.....2500.....2510.....2520

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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[illegible]

	..	:	..	*	*	..	:	:	*	*:***	****	..	:	:																																												
Homo_sapiens	RKQ	ELSR	DNAT	LQAT	LHA	ARD	T	L	A	S	V	F	R	L	L	H	S	L	D	Q	A	K	E	E	L	R	L	A	A	S	L	D	G	A	R	T	P	L	L	Q	R	M	Q	T	2474													
Pan_troglodytes	RKQ	ELSR	DNAT	LQAT	LHA	ASD	T	L	A	S	V	I	R	L	L	H	S	L	D	Q	A	K	E	E	L	R	L	A	A	S	L	D	G	A	R	T	P	L	L	Q	R	M	Q	T	2474													
Macaca_mulatta	RKQ	ELSR	DNAT	LKAT	LHA	ASD	T	L	A	S	V	F	R	L	L	H	S	L	D	Q	A	K	E	E	L	R	L	A	A	S	L	D	G	A	R	T	P	L	L	Q	R	M	Q	N	2474													
Callithrix_jacchus	RKQ	ELS	Q	DNAT	LRAT	LNA	ARD	T	L	A	S	V	F	R	L	L	H	S	L	D	Q	A	K	E	E	L	R	L	A	A	S	L	D	G	A	R	T	P	L	L	Q	R	M	Q	A	2473												
Bos_taurus	RKQ	ELS	G	DNAT	LGAT	LQ	AARD	T	L	A	R	V	S	E	L	L	R	G	M	D	Q	A	R	E	E	Y	E	H	L	A	A	S	L	D	G	A	R	T	P	L	L	E	K	M	H	A	2465											
Equus_caballus	RKQ	ELS	Q	D	SAT	LRAT	LQ	AARD	T	L	A	R	L	S	E	L	L	H	G	I	D	Q	A	K	E	E	C	H	L	A	A	G	L	D	G	A	W	T	P	L	L	E	K	M	Q	A	2471											
Pteropus_alecto	RKQ	ELS	RD	NAT	LRAT	LQ	ASD	T	L	G	L	V	S	K	F	L	D	V	D	Q	A	K	E	S	E	R	L	A	A	S	L	D	G	A	R	T	P	L	L	E	K	M	R	A	2472													
Mus_musculus	WKQ	ELS	Q	DNAT	LKAT	LQ	ASL	T	L	G	H	V	S	E	L	L	O	G	I	D	Q	A	K	E	L	H	L	A	A	S	L	D	G	A	W	T	P	L	L	K	R	M	Q	A	2476													
Ornithorhynchus_anatinus	KKQ	ELQ	R	E	N	E	T	L	R	N	A	L	K	M	A	E	A	A	L	A	R	G	S	D	F	L	O	T	I	D	K	A	K	E	E	L	R	L	A	N	L	D	G	A	R	G	P	L	T	D	K	M	Q	A	2475			
Pavo_muticus	KS	R	E	L	Q	K	Q	Y	G	L	V	Q	E	T	L	R	M	A	E	N	A	L	A	K	V	S	N	F	L	O	K	M	S	A	K	E	A	Y	E	K	L	A	A	L	D	G	A	K	L	P	L	T	E	R	V	K	2465	
Pavo_cristatus	KS	R	E	L	Q	K	Q	Y	G	L	V	Q	E	T	L	R	M	A	E	N	A	L	A	K	V	S	N	F	L	O	K	M	S	A	K	E	A	Y	E	K	L	A	A	L	D	G	A	K	L	P	L	T	E	R	V	K	2465	
Gallus_gallus	KS	R	E	L	Q	K	Q	Y	G	L	V	Q	E	T	L	R	M	A	E	S	A	L	A	K	V	S	N	F	L	O	K	M	S	A	K	E	A	Y	E	K	L	A	A	L	D	G	A	K	L	P	L	T	E	R	V	K	2465	
Anas_platyrhynchos	KS	R	E	L	Q	K	Q	Y	G	L	V	Q	E	T	L	R	M	A	E	D	S	L	A	Q	V	S	N	F	L	O	K	M	S	A	K	E	E	Y	E	K	L	A	A	L	D	G	A	K	L	P	L	T	E	R	V	K	2473	
Chelonia_mydas	K	S	E	E	L	Q	K	Q	Y	G	V	Q	D	T	L	Q	M	A	E	S	L	V	Q	V	S	D	L	L	O	I	I	E	N	A	K	E	E	Y	E	K	L	A	A	R	L	D	G	A	R	Y	P	L	T	E	R	V	K	2475
Xenopus_tropicalis	K	V	S	D	L	K	K																																																			

	* * * * : ** * * . * . . : * * . * . * * * * : * : : * : . * : * : * :	
Homo_sapiens	FSPAGSKLRLVEAAEAHAQQLGQLALNLSSIIILDVNQDRLTQRAIEASNAYSRIILQAVQA	2534
Pan_troglodytes	FSPAGSKLRLVEAAEAHAQQLGRLALNLSSIIILDVNQDRLTQRAIEASSAYSRIILQAVQA	2534
Macaca_mulatta	FSPAGSKLRLVEAAEAHAQQLDQLALNLSSIIILDINQDRLTQRAIEASSAYSRIILQAVQA	2534
Callithrix_jacchus	FSPAGSKLHLVEAAEAHAQQLGQLALNLSSIIILDINQDRLTQRAIEASSAYSRIILQAVQA	2533
Bos_taurus	FSPASSKLELVEAAEAHAWQLDQLALNLSSIIQGVNQDRFTQRAIEAANAYSSILQAVQA	2525
Equus_caballus	FSPASSKVALVEAAEAHAWQLDQLALNLSSIIIRGVNQDGFITQRAIEAANAYSSILQAVQA	2531
Pteropus_alecto	FFPASGKVDLVEAAEAHAWRLDQLAHNLSSIIIRGVNQDRFTQRAIEAANAYSSILRAVQA	2532
Mus_musculus	FSPASSKVDLVEAAEAHAQKLNQALNLSSIIILGINQDRFTQRAVEASNAYSSILQAVQA	2536
Ornithorhynchus_anatinus	FSPASSKIPIVERAEHAHALQLDQLAQNLSIIIRDNTQDRFTQRAIEASNAYASIIQAVKE	2535
Pavo_muticus	FSPASSKIPIVEQAEHARLLDELARNLSSIIQGTNQDGFITQRAIDASNVYASIIQAVRK	2525
Pavo_cristatus	FSPASSKIPIVEQAEHARLLDELARNLSSIIQGTNQDGFITQRAIDASNVYASIIQAVRK	2525
Gallus_gallus	FSPASSKIPIVEQAEHARLLDELARNLSSIIQGTNQDGFITQRAIDASNVYASIIQAVRK	2525
Anas_platyrhynchos	FSPASSKIPIVEQAEHARLLSELAKNLSSIIQGTNQDGFITQRAIDASNVYASIIQAVRK	2533
Chelonia_mydas	FSPASSKIPVVEAAEAHARLLDELARNLSSIIQGANQDGFITQRAINASNAYASIIKAVKN	2535
Xenopus_tropicalis	FSPASSKIPIVEKAEMHAKDLGQAKALFSAIGDANQDGYIQKAINASDAYSTIIDAVKQ	2515
Latimeria_chalumnae	FSPARTKTIPIVEQAEHARLLDQLAKNLSSIIEDTNQDGFITQRAINASNAYSIIQAVKS	2227
Rhinatrema_bivittatum	FSPASSKIPIVEEAEEHVRLLNQVALNLSSIIIRDNTQDGLITQRAINASNAYASIIQAVKN	2511
2650.....2660.....2670.....2680.....2690.....2700	

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**  **  *  :  .  :  *  .  *  :..  *  :  :  .  *  :  .
Homo_sapiens      AEDAAGQALQADHTWATVVRGLVDRAQQLLANSTALEEAMLEEQRLG-LVWAALQGA 2593
Pan_troglodytes   AEDAAGQALQADHTWATVVRGLVDRAQQLLANSTALEEAMLEEQRLG-LVWAALQGA 2593
Macaca_mulatta    AEDAAGQALQADHTWATVVRGLVDRAQQLLANSSALEEAVLREORRLG-LVWAALQGA 2593
Callithrix_jacchus AEDAAGEALQADHTWATVVRGLVGRARQLLANSSALEEAVLREORRLG-LVWATLRGT 2592
Bos_taurus        AEGAADQARQANHTWAMVVQRGLAPRARELLANSSALEEAILGEORRLD-LARATLQNT 2584
Equus_caballus     AEGAAGQALQSSHTWAMVVQRGLAPRAQQLRANSSALEEAVLREORRLG-RAQATLHGT 2590
Pteropus_alecto    AEGAAGQALQASHAWATVVRGLGPRARELLANSSGLGEAALREORRLD-RVRATLQDV 2591
Mus_musculus       AEDAAGQALRQASRTWEMVVQRGLAAGARQLLANSSALEETILGHQGRGLG-LAQGRLOAA 2595
Ornithorhynchus_anatinus AESAARQALLNATEVWESVVRDQLGSRAGELRENSSALEEAVQREOKKLSWVVKNTLQST 2595
Pavo_muticus       AERAADDADEAAGEALMNVMSENLGAISKELKRNSSNLEEAVRREOTKLNGAIKGTLQTA 2585
Pavo_cristatus     AERAADDADEAAGEALMNVMSENLGAISKELKRNSSNLEEAVRREOTKLNGAIKGTLQTA 2585
Gallus_gallus      AERAADDADEAAGEALMNVMSENLGAISKELKRNSSNLEEAVRREOTKLNGAIKGTLQTA 2585
Anas_platyrhynchos AERAADDADEAAGEALMNVISENLGAISKELKRNSSNLEESVMREORKLNGAIKGTLQTA 2593
Chelonia_mydas     AERAADDADEAAGEALTSVVSGLTSLKELKKNSSALEQAVKREORKLNGVIKGTLQAV 2595
Xenopus_tropicalis AEKAAKEASRVAGDAVKNILNEELGKKGKELKQKSSQLGDSARAAEDELSDQVQSKLQEA 2575
Latimeria_chalumnae AEKAAAEAAAADDALKNVREEDLAGKAERLKKKSNKLEEEAKAAQKNLTTEVKPALQEA 2287
Rhinatrema_bivittatum AEKAAAGADQGAKAALTDILSDDLAKKAKDLRKKGSALVETTEEDERKLTAVKETLKTIT 2571
.....2710.....2720.....2730.....2740.....2750.....2760

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Homo_sapiens      RTQLRDVRAKKDQLEAHIQAAQAMLAMDTDETSKKIAHAKAVAAEAQDTATRVCSQLQAM 2653
Pan_troglodytes   GTQLRDVRAKKDQLEAHIQAAQAMLAMDTDETSKKIAHAKAVAAEAQDTATRVCSQLQAM 2653
Macaca_mulatta    GTQLRDVRAKKDQLEARIQAAQAMLAMDTDETSKKIAHAKAVAAEAQDVAARVETQLQAV 2653
Callithrix_jacchus GTQLRDIRARKDQLEAHIQDVQAMLAMDTDETSKKIAHAKAVAAEAQDMAAHVCSQLQAM 2652
Bos_taurus        GTQLRDARARKEQLAARVREVQALLAMDTDETSKKIAHAKAVAAEAQDTAARVCSQLQDM 2644
Equus_caballus     GTQLRDAQAKKEQLVAQIQEVQAMLAMDTDETSKKIANAKAVAFEQDTAARVCSRLRDM 2650
Pteropus_alecto    DSQLRDAQAKKEQLAGQIQEVQAMLAMDTDETSKKIAHAKTVAAEAQDRAARVCSRLRDM 2651
Mus_musculus       GIQLHNVWARKNQLAQIQEAQAMLAMDTSETSEKIAHAKAVAAEALSTATHVCSQLQGM 2655
Ornithorhynchus_anatinus QVKLENLAKKEVLTRRLGALKDMLAMDGDTSEKIDQAKAQAAEANAARTMAALRDM 2655
Pavo_muticus       KDKLADLRRKKEQLLSQLQSVQDMLGRDQEDTKETIQNAKAAATEANETAARVEDTLSTM 2645
Pavo_cristatus     KDKLADLRRKKEQLLSQLQSVQDMLGRDQEDTKETIQNAKAAATEANETAARVEDTLSTM 2645
Gallus_gallus      KDKLADLRRKKEQLLSQLQSVQDMLGRDQEDTKETIQNAKAAATEANETAARVEDTLSTM 2645
Anas_platyrhynchos KDKLADLRRKKEQLLSQLQSVQDMLGRDQEDTKETIQNAKAAATEANETAARVEDTLSTM 2653
Chelonia_mydas     KDKLTDLREKKEQLLNQLRSINMLDKDQDNTTAIIQNAKAAAAAANDTARVEDALSNM 2655
Xenopus_tropicalis KTKLQKNKANKEKVKADLQSIMDKISMTDRNVDDITSAKFKAAEANDTANRVEDSLIDI 2635
Latimeria_chalumnae KKNLRDVKSKEELFTGLRSVQNKLMRDVLDNINNAKMTAQEANTTASDVEETVTM 2347
Rhinatrema_bivittatum KDRLTDAMKKERLLQDLRAVDKLNARNDQAVTIQAAKLAAMEANSTASRLNTLYEM 2631
.....2770.....2780.....2790.....2800.....2810.....2820

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Homo_sapiens      QENVERWQGYEGLRGQDLGQAVLDAGHSVSTLEKTLPLLAKLSILENRGVHNASLALS 2713
Pan_troglodytes   QESVERWQGYEGLRGQDLGQAVLDAGRSVSTLEKTLPLLAKLSILENRGAHNASLALS 2713
Macaca_mulatta    QESVERWQGYEGLRGQDLGQAVLDAGRSVSSLEKTLPLLAKLSVLENRGAHNASLVLS 2713
Callithrix_jacchus QESVERWQGYEGLRGQDLGQAVLDAGRSASTLEKTLPLLAKLSILENRGTHNASLALS 2712
Bos_taurus        HRNVEQWQGYKGLQSDLGQAVLDAGRSVSTLEKTLPLLAKLNLLQDRGAHNASLALS 2704
Equus_caballus     QOTLEQWQGYFGLQSDLGQAVLDAGRSVSTLEKTLPLLAKLSLLENRGTHNASLALS 2710
Pteropus_alecto    QRNLERWQGYGGLQSDLGQAVLDAGRSVSTLEKTLPLLAKLSLLENRGAHNASLALS 2711
Mus_musculus       QKNVERWQYLGGLQGDLSQVERDASSVSTLEKTLPLLAKLSRLNRRGVHNASLALS 2715
Ornithorhynchus_anatinus QEQLLELWQRYGGLRGPDLDRAVEEAGRSVSSLEKTLPLLAKLNRNRRSRNAS--LS 2713
Pavo_muticus       KKNLDEWKDKYGGLRNEDLNQAVQDARKSVSSLESTIPLLLGKLSSLENRRNKNT--VS 2703
Pavo_cristatus     KKNLDEWKDKYGGLRNEDLNQAVQDARKSVSSLESTIPLLLGKLSSLENRRNKNT--VS 2703
Gallus_gallus      KKNLDEWKDKYGGLRNEDLNQAVQDARKSVSSLESTIPLLLGKLSSLENRRNKNT--VS 2703
Anas_platyrhynchos RRNLDEWKDKYGGLRNEDLNRAVDAKKSVSSLESTIPLLLGTLSSLENRRNKNT--VS 2711
Chelonia_mydas     KKNLDEWKDYGGLKNEELNQAVQDAKKSVDNLESTIPLLLLEKLSLENRRNKNST--VS 2713
Xenopus_tropicalis KKNLESWKEKYGNLQNEVDSEAEAEAKTSVSDLVNTIPLLLDKVNQLENRQTQNS--IS 2693
Latimeria_chalumnae KKNLDEWKEKYGGTPEDFTKVFQEAKTSTALEKTIPELLEKLNKIESQTSQSSN--IS 2405
Rhinatrema_bivittatum KRNLDOWKKEYGDIQSEDMDQAVQEAKTSTVSNLESTIPLLEKLSLENHRSQNAS--VS 2689
.....2830.....2840.....2850.....2860.....2870.....2880

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	ASIGRVRELIAQARGAASKVKVPMKFNGRS	SGVQLRTPRDLADLAAYTALKFYI	LGPEPEP	2773
Homo_sapiens	ASIGRVRELIAQARGAASKVKVPMKFNGRS	SGVQLRTPRDLADLAAYTALKFYI	LGPEPEP	2773
Pan_troglodytes	ASIGRVRELIAQARGAASKVKVPMKFNGRS	SGVQLRTPRDLADLAAYTALKFYI	LGPEPEP	2773
Macaca_mulatta	ASIGRVRLIAQARGAASKVKVPMKFNGRS	SGVQLRTPRDLADLAAYTALKFYI	LGPEPEP	2773
Callithrix_jacchus	ASISRVRLIAQARGAASKVKVPMKFNGRS	SWVQLRTPRDLADLAAYTALKFYI	LDPEPAP	2772
Bos_taurus	ASIGRVRELIAQARGAASKVKVPMKFNGSS	SGVQLRTPRDLTNLASSTALKFYI	LSPEPTA	2764
Equus_caballus	ASIGRVRELIAQARGAASKVKVSMKFNGRS	SGVQLRTPRDLSDLAAYTSLKFYI	LSPEPAR	2770
Pteropus_alecto	ASISRVRELIAEARGAASKVKVSMKFNGRS	SGVQLRAPRDLSDLAAYTALKFYI	LSPNAA	2771
Mus_musculus	ANIGRVRLKIAQARSAAASKVKVSMKFNGRS	SGVRLRTPRDLADLAAYTALKFHIT	QSPVPAP	2775
Ornithorhynchus_anatinus	ESILRVRLITQARNTASKVKVPMKFNGQS	SGVQLRPPLDLQDLAAYTALKFYI	QNPOPPR	2773
Pavo_muticus	ENIVRIROLITQARNAASKVKVPMKFNGSS	SGVQVRMPNSNLQDLAAYTSLKFYI	QNPEPRS	2763
Pavo_cristatus	ENIVRIROLITQARNAASKVKVPMKFNGSS	SGVQVRMPNSNLQDLAAYTSLKFYI	QNPEPRS	2763
Gallus_gallus	ENIVRIROLITQARNAASKVKVPMKFNGSS	SGVQVRMPNSNLQDLAAYTSLKFYI	QNPEPRS	2763
Anas_platyrhynchos	ENIVRIROLITQARNAASKVKVPMKFNGSS	SGVQVRMPNSNLQDLAAYTSLKFYI	QNPEPRS	2771
Chelonia_mydas	ENIVRIROLITQARNAASKVKVPMKFNGT	SGIQVRTPSDLQDLAAYTSLKFYI	QNPEPKP	2773
Xenopus_tropicalis	DSISRIRELISQARDAASKVKVPMKFNGSS	SGVQMRTPSNVPDLAAYTSLKLIH	QNPEP-T	2752
Latimeria_chalumnae	NNILRIROLISQARNAASKVKVPMKFNGNS	SGVQLRNPRLNQLAAYTSLKFHIRT	VGGA-T	2464
Rhinatrema_bivittatum	NNILRIROLISQARNAASKVKVPMRFNGT	SGVRLRTPSNVRDLAAYTSLKFHI	QNPEPKS	2749

			:*:~::~	
Homo_sapiens	-----GQGTEDRFVYMGSRQATGDYMGVSLRDKKVHVWVYLGEAGPAVL	SID	2821	
Pan_troglodytes	-----GQGTEDRFVYMGSRQATGDYMGVSLRDKKVHVWVYLGEAGPAVL	SID	2821	
Macaca_mulatta	-----GQGTEHDHFVYMGSRQATGDYMGVSLRDKKVHVWVYRLGEAGPAVL	SID	2821	
Callithrix_jacchus	-----GQQAGDHFVYMGSRQATGDYMGVSLRDKKVHVWVYRLGNADPAVL	SIE	2820	
Bos_taurus	-----GQVTGDQFVLYMGGROATGDYMGVALRGQRVHVWVYRLGGAGPATL	SID	2812	
Equus_caballus	-----GQAAGDHFVLYMGSRQAAGDYMGVALRDQKVHVWVYRLGGAGPAAL	SID	2818	
Pteropus_alecto	-----SEVTGDQFVLYMGSRQATGDYMGVALRDQKVHVWVYRLGGAGPATL	SID	2819	
Mus_musculus	EP-----GKNTGDHFVLYMGSRQATGDYMGVSLRNQKVHVWVYRLKGAPTTL	SID	2825	
Ornithorhynchus_anatinus	KPPQRPPQPPPDLQLPEAQFVLYLGSRREATGDYMGVLLRRRVQVWVYRLGE	PPTVTVTVD	2833	
Pavo_muticus	QQ-----DGAEGRFVLYLGSRREATGYDLGLIVLKDRKVQVWVKLGNEEPASLTVD		2813	
Pavo_cristatus	QQ-----DGAEGRFVLYLGSRREATGYDLGLIVLKDRKVQVWVKLGNEEPASLTVD		2813	
Gallus_gallus	QQ-----DGAEGRFVLYLGSRREATGYDLGLIVLKDRKVQVWVKLGNEEPASLTVD		2813	
Anas_platyrhynchos	RQQR-----QDGAEEGRFVLYLGSRREATGYDLGLIVLKDHKVQVWVKLGNEEPASLTVD		2824	
Chelonia_mydas	RQRR-----QDGADAGQFVLYLGNKEAKGDYMGIVLKDRKVQWIYKLGDEEPTYLTVD		2826	
Xenopus_tropicalis	KKKR-----CADTEQGRFVLF LGHKDGTGDYDLGLVLKG NKLCVCYKLGDEEPTFLSAN		2805	
Latimeria_chalumnae	KKKR-----QVAADAKRFVLYLGNQD-----		2485	
Rhinatrema_bivittatum	KQKR-----CAAKTAGHFVLYLGPDALGDYMGVV MKDAKVQVWVKLGEEPTILLTVD		2802	
2950.....2960.....2970.....2980.....2990.....3000			

Homo sapiens	EDIGEQFAAVSLDRITLQFGHMSVTVERQMIQETKGDTPAPGAEGLLNLRPDDFVFYVGGY	2881
Pan troglodytes	EDIGEQFAAVSLDRITLQFGHMSVTVERQMIQETKGDTPAPGAEGLLNLRPDDFVFYVGGY	2881
Macaca mulatta	EDIGEQFAAVSLDRITLQFGHMSVTVERQMIQETKGDTPAPGAEGLLNLRPDDFVFYVGGY	2881
Callithrix jacchus	EDVGEQFAAVSLDRITLQFGHMSVTVERQMIQETKGDTPAPGAEGLLSLQPDFFVFYVGGY	2880
Bos taurus	EDIGEQFAAVSIDRILQFGHMSVTVENRMVQETKGDTPAPGAEGLLNVQPDFFVFYVGGY	2872
Equus caballus	EDIGEQFAAVSIDRILQFGHMSVTVENQMVHETKGDTPAPGAEGLLSLQPDFFVFYVGGY	2878
Pteropus alecto	EDIGEQFAAVSIDRITLQFGHMSVTVEKQMIHETKGDTPAPGAEGLLNLPDNDFVFYVGCY	2879
Mus musculus	ENIGEQFAAVSIDRITLQFGHMSVTVEKQMVHEIKGDTPAPGSEGLLNLPDDFVFYVGGY	2885
Ornithorhynchus anatinus	EDIGEQFAMINIDRITLQFGHMSVTVEKQTVHETKADGVSPGDQGLLNLFHPHNVFVFYVGGY	2893
Pavo muticus	EEIGEQFAAININRILQYQMSVIVERQTVHETKGDVAKGEQGLLNLPDHPNVVFYVGGY	2873
Pavo cristatus	EEIGEQFAAININRILQYQMSVIVERQTVHETKGDVAKGEQGLLNLPDHPNVVFYVGGY	2873
Gallus gallus	EEIGEQFAAININRILQYQMSVIVERQTVHETKGDNVAKGEQGLLNLPDHPNVVFYVGGY	2873
Anas platyrhynchos	EEIGEQFATISINRILQYQMSVIVERQTVHETKGDVAKGEQGLLNLPDHPNVVFYVGGY	2884
Chelonia mydas	EEIGEQFAAISINRILQYGHMSVTVEKQTLHETKGDIAKGEQGLLNLEPHNVVFYVGGY	2886
Xenopus tropicalis	EDIREEFVTVAVERILQYQMSIFVTKDTLHEIKGDSTASGEQGLLNLPNQVVFYVGGY	2865
Latimeria chalumnae	-----	2485
Rhinatrema bivittatum	EDIDEQFAAISIERILQYGHMSVTVEKKTLLHETKGDSTRARGQGLLNLEPNRVVFYVGGY	2862
3010.....3020.....3030.....3040.....3050.....3060	

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Homo_sapiens	PSTFTPPPLLRFPGYRGCIEMDTLNEEVVSLYNFERTFOLDTAVDRPCARSKSTGDPWLT	2941
Pan_troglodytes	PSTFTPPPLLRFPGYRGCIEMDTLNEEVVSLYNFERTFOLDTAVDRPCARSKSTGDPWLT	2941
Macaca_mulatta	PSTFTPPPLLRFPGYRGCIEMDTLNEEVVSLYNFERTFOLDTAVDRPCARSKSTGDPWLT	2941
Callithrix_jacchus	PSNFTPPPLLRFPGYRGCIEMDTLNEEVVSLYNFERTFOLDTAVDRPCARSKSTGDPWLT	2940
Bos_taurus	PSNFTPPEPLRFPGYRGCIEMDTLNEEVVSLYNFEKTFOLDTAVDKPCARSKSTGDPWLT	2932
Equus_caballus	PSNFTPPGPLRLPGYRGCIEMDTLNEEVVSLYNFEKTFRLDTAVDKPCARSKSTGDPWLT	2938
Pteropus_alecto	PSNFTPPEPLRFPYRGCIEMDTLNEEVISLYNFKEITFLLNTAVDKPCARSKSTGDPWLT	2939
Mus_musculus	PSNFTPPEPLRFPGLGCIEMETLNEEVVSLYNFEQTFMLDTAVDKPCARSKATGDPWLT	2945
Ornithorhynchus_anatinus	PSSFTPPEPLRFPGYRGCIEMDTLNEEVISLYNFNTFOLDTAAADKPCARSKSTGDPWLT	2953
Pavo_muticus	PPSFMPPPTLRYPNYRGCIEMDTLNEEVVSLYNFOHTFOLDTTAEKPCARSKSTGDPWLT	2933
Pavo_cristatus	PPSFMPPPTLRYPNYRGCIEMDTLNEEVVSLYNFOHTFOLDTTAEKPCARSKSTGDPWLT	2933
Gallus_gallus	PPSFMPPPTLRYPNYRGCIEMDTLNEEVVSLYNFOHTFOLDTTAEKPCARSKSTGDPWLT	2933
Anas_platyrhynchos	PASFTPPPTLRYPNYRGCIEMDTLNEEVVSLYNFOHTFOLDTTSEKPCARSKSTGDPWLT	2944
Chelonia_mydas	PAGFTPPVTLRYPNYRGCIEMDTLNEEVVSLYNFQHTFOLDTAAADKPCARSKSTGDPWLT	2946
Xenopus_tropicalis	PADFTPPAPLNYPYRGCIEMDTLNEKPLISLYDFEQIFELDTKKEKPCARSKSTGDPWLT	2925
Latimeria_chalumnae	-----	2485
Rhinatrema_bivittatum	PSSFTPPDLLDYPNYRGCIEMDTLNEEVISLYNFKEITFQVDTIKDKPCARSKSTGDPWLT	2922
3070.....3080.....3090.....3100.....3110.....3120	

Homo_sapiens	DGSYLDGTGFARISFDSQISTTKRFEQELRLVSYSGVLFFLKQSSQFLCLAVQEGSLVLL	3001
Pan_troglodytes	DGSYLDGTGFARISFDSQISTTKRFEQELRLVSYSGVLFFLKQSSQFLCLAVQEGSLVLL	3001
Macaca_mulatta	DGSYLDGTGFARISFDSQISTTKRFEQELRLVSYSGVLFFLKQSSQFLCLAVREGSLVLL	3001
Callithrix_jacchus	DGSYLDGTGFARISFDSQISTTKRFEQELRLVSYSGVLFFLKQSSQFLCLAVREGSLVLL	3000
Bos_taurus	DGSYLDGSGFARISFDSQISTTKRFEQELRLVSYSGIIFFLQHDQFLCLAVREGSLVLL	2992
Equus_caballus	DGSYLDGSGFARISVESQISHTKRFDQELRLVSSSGIIFFLQHDQFLCLAVREGSLVLL	2998
Pteropus_alecto	DGSYLDGSGFARISVERQMGTTKRFELEMLRVSSHGIIFFLOHEDQFLCLAVLEGSLVLL	2999
Mus_musculus	DGSYLDGSGFARISFEKQFSNTKRFDQELRLVSYNGIIFFLKQSSQFLCLAVQEGTLVLF	3005
Ornithorhynchus_anatinus	DGSYLDGTGYARIGFESQSLTKRFEQELRLVSSDGIIFFLKHQDQFLCLAVRGVLVLY	3013
Pavo_muticus	DGSYFDGTGYAEIKFESQFGTTKRFEQEIIRIISYNGILFFLENQGFCLCLAIRDGKLVLY	2993
Pavo_cristatus	DGSYFDGTGYAEIKFESQFGTTKRFEQEIIRIISYNGILFFLENQGFCLCLAIRDGKLVLY	2993
Gallus_gallus	DGSYFDGTGYAEIKFESQFGTTKRFEQEIIRIISYNGILFFLENQGFCLCLAIRDGKLVLY	2993
Anas_platyrhynchos	DGSYFDGTGYAEIKFESQFGTTKRFEQEIIRIISYNGILFFLENQGFCLCLAIRDGKLVLY	3004
Chelonia_mydas	DGSYFDGTGYAEIKFESQIGSTKRFEQEIIRVVSNGILFFLEHQGFCLCLAIRDGKLVLY	3006
Xenopus_tropicalis	EGSYFDGTGYAEVKLETLPSSSKRFELDARLVSYNGILFYLDQEDQFLSLAVQDGKLVLY	2985
Latimeria_chalumnae	-----	2485
Rhinatrema_bivittatum	DGSYFDGTGYAEIKLESQISSTTKRFEQEIIRVVSNGIIFFLLENQGFCLCLAIRDGKLVLY	2982
3130.....3140.....3150.....3160.....3170.....3180	

		:*:*:	: : : : : *	: :	:	
Homo_sapiens	YDFGAGLKKAVPLQ---PPPPLTSASKAIQVFLLGGS-RKRVLVRVERATVVSVEQDND-	3056				
Pan_troglodytes	YDFGAGLKKAVPLQ---PPPPLTSASKAIQVFLLGGS-RKRVLVRVERATVVSVEQDND-	3056				
Macaca_mulatta	YDFGAGLREAVPLQ---TPPPLTSASKAIQVFLLGGS-RKRVLVRVERATVVSVEQDNV-	3056				
Callithrix_jacchus	YDFGAGLKEAVPLQ---PPPPLTAASKAIQVFLLGGS-RKRVLVRVERATVVSVEQDSA-	3055				
Bos_taurus	YDFGAGLKEAGPLQ---PPPPLTASASKAIQVFLLGGS-RKRVLVRVERTTVVSVEQENV-	3048				
Equus_caballus	YDFGTGLKEAVPLQ---PPPPLTASASKAIQVFLLGGS-RKRVLVRVERATVVSVEQENV-	3053				
Pteropus_alecto	YDFGAGLEKAVPLQ---TPPPLTAAASKAIQVFLLGGS-RKRVLVRVERATVVSKEQENV-	3054				
Mus_musculus	YDFGSGLKKADPLQ---PPQALTAASKAIQVFLLAGN-RKRVLVRVERATVVSVDQDNM-	3060				
Ornithorhynchus_anatinus	YDFNTGLQARPSH---EPPLLTANKAIQIFLLGMTGKKRILVRLERATVFTVEQENS-	3069				
Pavo_muticus	YDFNTGLEMAKPSNSS--SISSATNKAIQIFLLKMNNKKRILVRLERLTIFMVEQENS-	3050				
Pavo_cristatus	YDFNTGLEMAKPSNSS--SISSATNKAIQIFLLKMNNKKRILVRLERLTIFMVEQENS-	3050				
Gallus_gallus	YDFNTGLEMAKPSNSAS--SISSATNKAIQIFLLKMNNKKRILVRLERLTIFVVEQENS-	3050				
Anas_platyrhynchos	YDFSTGLEVAKPSNSSSLTVSSTTNKAIQIFLLKMNNKKRILVRLERLTIFMVEQENS-	3063				
Chelonia_mydas	YDFKEGLEMAAASSSDPMSLTVSSTTNKAIQIFLLTMSKKRILVRLERLTIFMVEHENS-	3065				
Xenopus_tropicalis	YDIGDGLQVSKPM-EPNKLQISSSTPKVQVILAVVGGKKKIIVRLERVNVVNDYDKG-	3043				
Latimeria_chalumnae	-----IQFILLYQKDKVRIFIRLDRVTVFTEVTQDK-	2516				
Rhinatrema_bivittatum	YDFDEGIQMAKSAGDSASLAVSSAAHKVIQIILLSISGKKRFFIRLERMTMFTVDHAGN	3042				
3190.....3200.....3210.....3220.....3230.....3240					

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* . :**** * * ** :** *.....:****:**** *.*:* *
Homo_sapiens      --LELADAYYLGGVPPDQLPPSLRRLFPFTGGSVRGCVKGKIKALGKYVDLKRNLNTTGVSA 3114
Pan_troglodytes   --LELADAYYLGGVPPDQLPPSLRRLFPFTGGSVRGCVKGKIKALGKYVDLKRNLNTTGVSA 3114
Macaca_mulatta    --LELADAYYLGGAPPDQLPPSLRRLFPFMGGSVRGCVKGKIKALGKYVDLKRNLNTTGVSA 3114
Callithrix_jacchus --LEQADSYFLGGAPPDQLPPSLRQLFPFTGGSVRGCIKGKIKALGKYVDLKRNLNTTGVSA 3113
Bos_taurus        --LELADAYYLGGVPPSPLPASLRQLFPSSGGSVRGCIKGKIKALGKYVDLKRNLNTTGVSA 3106
Equus_caballus    --LELADAYYLGGVPPDQLPPSLQLLFPSSGGSVRGCVKGKIKALGKYVDLKRNLNTTGVSSG 3111
Pteropus_alecto   --LELADAYYLGGVPPDQLPLSLRRLFPSSGGSVRGCVKGKIKALGKYVDLKRNLNTTGVISA 3112
Mus_musculus      --LEMADAYYLGGVPPEQLPLSLRQLFPSSGGSVRGCIKGKIKALGKYVDLKRNLNTTGVISF 3118
Ornithorhynchus_anatinus --LEQATAYYLGGGPAGPAPPSLQALFPFTGGSVRGCVKGLKALGKYVDLKRNLNTTGVISG 3127
Pavo_muticus      --LENAVSYLGGVPPAVLPPSLKALFPFTGGPIRGCMKGLKALGKYVDLKRMTNVGVSYG 3108
Pavo_cristatus    --LENAVSYLGGVPPAVLPPSLKALFPFTGGPIRGCMKGLKALGKYVDLKRMTNVGVSYG 3108
Gallus_gallus     --LENAVSYLGGVPPAVLPPSLKALFPFTGGPIRGCMKGLKALGKYVDLKRMTNVGVSYG 3108
Anas_platyrhynchos --LENAVSYLGGVPPALLPPSLKALFPFTGGPIRGCMKGLKALGKYVDLKRMTNVGVSYG 3121
Chelonia_mydas    --LENAVSYLGGMPVLLLPESLKALFPFTGGPIRGCMKGLKALGKYVDLKRMTNVGVSYG 3123
Xenopus_tropicalis --SLETAQYFFLGGPLSSKMPESLVALFPGGGSIRGCMKGKIKALGKYVDLKRMTTGVSYG 3102
Latimeria_chalumnae --RLLSPS-YYLGGPLADKMPASLRKLFNNGGSLKGCMRNIKALDKYIDLKRANTTGVSYG 2574
Rhinatrema_bivittatum FKLDSATSYLGGAPESRLPSLKKIFPHGASVRGCMKGLKALGKYVDLKRNTAGVSYG 3102
.....3250.....3260.....3270.....3280.....3290.....3300

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*: ***: *:: :* *:* : . . : .****:* : . :*: :
Homo_sapiens      CTADLLVGRAMTFHGHGFLRLALS-NVAPLTGNVYSGFGFHSQAQDSALLYRASPDGLCQ 3173
Pan_troglodytes   CTADLLVGRAMTFHGHGFLRLALS-NVAPLTGNVYSGFGFHSQAQDSALLYRASPDGLCQ 3173
Macaca_mulatta    CTADLLVGRAMTFHGHGFLHLALS-NVAPLTGDNVYSGFGFHSQAQDSALLYRASPDGPCQ 3173
Callithrix_jacchus CTADLLVGRAMTFHGHGFLLLAFP-NVAPLTGDIYSGFGFHSTQDSALLYRASPDGPCQ 3172
Bos_taurus        CTADLLVGRAMTFHGHGFLRLALPSDAVPLTGDVYSGFGFRSSQDSALLYRASPDGPCQ 3166
Equus_caballus    CTADLLVERAVTLHGHGFLPLALP-DVSPLTGDVYSGFGFRSTRDSGLLYHRASPDGPCQ 3170
Pteropus_alecto   CTADLLVGRMTTFHGHGFLLELS-DVPLGNIYSGFGFRSTQDSGLLYRWSSPDGPCQ 3171
Mus_musculus      CTADLLVGRMTTFHGHGFLPLALP-DVAPITEVVYSGFGFRGTQDNLLYYRTSPDGPYQ 3177
Ornithorhynchus_anatinus CTSDLLITRSMFHHGHGYLTLGLR-DIPSLSGNFYTGFGFRSSQEDGLLYYHAAPEGTCC 3186
Pavo_muticus      CTSDLLVARSITVHGYYLTLALK-DVPGLR-DFYSGFSFQTSQREGLLYHHSTQEGTCQ 3166
Pavo_cristatus    CTSDLLVARSITVHGYYLTLALK-DVPGLR-DFYSGFSFQTSQREGLLYHHSTQEGTCQ 3166
Gallus_gallus     CTSDLLVARSISVHGYYLTLALK-DVPGLR-DFYSGFSFQTSQREGLLYHHSTQEGTCQ 3166
Anas_platyrhynchos CTSDLLVARSISVHGYYLTLALK-DVPGLR-DFYSGFSFQTSQHEGLLYHHATQEGMCC 3179
Chelonia_mydas    CTSDLLVARSVKFHGHGYLTLALK-NVPSLQ-DFYTGFSFRSTSQSNGLLYSHSTAEGNCQ 3181
Xenopus_tropicalis CTSDLLIARSVQFYGHGYLNLMAVK-NVPSLN-NFYTGFGFRSTSQPNNGFLYQHTTEEGSCQ 3160
Latimeria_chalumnae CSADLLVARSVRFHGDGYLRLPVE-NVPSLDNDFYSGFGFRINQKSGLLFHYSAT----- 2628
Rhinatrema_bivittatum CTLDLLIARSVMFHGHGFLTMSLK-SVPSLQENFYTGFGFRSTSQNNGLLYHRTTEEGTCQ 3161
.....3310.....3320.....3330.....3340.....3350.....3360

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* ::
Homo_sapiens      VSLQQGRVSLQLLRTEVKTQAGFADGAPHYVAFYSNATGVWLYVDDQLQMKP--HRGPP 3231
Pan_troglodytes   VSLQQGRVSLQFLRTEVKTQAGFADGAPHYVAFYSNATGVWLYVDDQLQMKP--HRGPP 3231
Macaca_mulatta    VSLRQGHVTLQLLRTEVIAEGAFADGAPHYVAFYSNATGVWLYVDDQLQMKP--HRGPR 3231
Callithrix_jacchus VSLQQGHVTLRLRLRTEVKTQGGFADGAPHYVAFYSNATGVWLYVDDQLQMKP--HRGLP 3230
Bos_taurus        VTLQQGHVTLRLARTELKTQERFDDGAPHYVTFYSNSTGVWLYVDDQLQEMKP--YRG-- 3222
Equus_caballus    VSLQQGHVTLRLMRTEVKTQGRFADGAPHYVAFYSNTTGVWLYVDDQLQMKP--HRGPL 3228
Pteropus_alecto   VFLQQGHVTLRFVRTEVKSLSKSLADGAPHYVTFYSNATGVWLYVDDQFQHMKA--HQGPR 3229
Mus_musculus      VSLREGHVTLRFMNQEVETQRFVADGAPHYVAFYSNVTGVWLYVDDQLQVKSS--HERTT 3235
Ornithorhynchus_anatinus VALQRGRVALQCLKKTTLTKAVLADAAGHYVAVYSDPTGIRLYVDDQLQGAGEPGSRERG 3246
Pavo_muticus      VSLQRQLALNLLTKVTTENTYADDRTHYVAFYSDAQGVRLYVDDELQDTAA--GARAS 3224
Pavo_cristatus    VSLQRQLALNLLTKVTTENTYADDRTHYVAFYSDAQGVRLYVDDELQDTAA--GARAS 3224
Gallus_gallus     VSLQRQLALNLLTKVTTENTYADDRTHYVAFYSDAQGVRLYVDDELQDTAA--GARAS 3224
Anas_platyrhynchos VSLQRQLALNLLDTKITTENAYADGRAHYVAFYSDSRGVRLYVDDELQDTAA--GARPS 3237
Chelonia_mydas    VSLKNGRVAVTVLKTTELTKHAYADDASHYVAIYSDATGVRLYIDDQLQGPQKQ--GAHHY 3239
Xenopus_tropicalis VAVQHGRLSVKILNAEMRSKTQFADGAGHYLTLYSNDAVRFYVDDKLQETRT--LAA-- 3216
Latimeria_chalumnae VCLQF----- 2633
Rhinatrema_bivittatum VSIRNGRIAVKILKTELSSKDPYADDVSHYVAIYSNEREVQLYVDDQLQARQA--ASRK- 3218
.....3370.....3380.....3390.....3400.....3410.....3420

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      : *                               * . * * . * : : . * * :
Homo_sapiens      PELQPPPEGPPRLLLGGLPES-GTIYNFSGCISNVFVQRLGPPORVFDLQONLGSVNVST 3290
Pan_troglodytes   PELQPPPEGPPRLLLGGLPES-GTIYNFSGCISNVFVQRLGPPORVFDLQONLGSVNVST 3290
Macaca_mulatta    PEPQPPPEGPPSLLLGLLPEP-DTFH-FSGCISNIFVRRLLGPPORVFDLQONLGSVNVST 3289
Callithrix_jacchus PELQPPPEGPPRLLLGGLPES-GTFHNFSGCISNVFVRRLLGPPORVFDLQONMGSVNVST 3289
Bos_taurus        PRPQPPPEGPPQLLLGGSPKS-SDIRNFSGCISNVFVRLLLGPPORVFDLQENLGSFNVSS 3281
Equus_caballus     PRPHQPPPEGPPRLLLGGLPES-DTIQNFSGCISNVFVQRLGPPORVFDLQENMGGVNVSS 3287
Pteropus_alecto    PRPQPPPEP---TLLLGLLPEP-DTLRNLSCGISNVFVQRLGPPORVLDLMDVGSVNVSS 3285
Mus_musculus       PMLQLQPEEPsRLLLGLLPVS-GTFHNFSGCISNVFVQRLRGPORVFDLHONMGSVNVSV 3294
Ornithorhynchus_anatinus GPAQPQTDNLHHFHLGGLPEGGALLRNLRCGISNVFVRRRETAPORVVDLQONIESVNVIT 3306
Pavo_muticus       WRQRRQDGRALFQLGG-PEP-GALSNTLGCIGNVFVKRRSEPMVVVDLQONVESINVTM 3282
Pavo_cristatus     RRQRRQDGRALFQLGG-PEP-GALSNTLGCIGNVFVKRRSEPMVVVDLQONVESINVTM 3282
Gallus_gallus      RRQRRQDGRALFQLGGSPEP-GALSNTLGCIGNVFVKRRSEPMVVVDLQONVESINVTM 3283
Anas_platyrhynchos RRQRRQ-DAQMLFQLGGSPEP-GALSNTLGCIGNVFVKRRSEPMVVVDLQONVESINVTM 3295
Chelonia_mydas      RRHRRQ-EEQMLFQLGGLPGA-GALSNTLGCIGNVFVKRKLDPOMVVVDLQONTESFNVITM 3297
Xenopus_tropicalis --GTGRPDLTSTLLGGFQDG-GEIHNLTCGISNVFVKRKDGPQAVLDLQONQESLNVITM 3273
Latimeria_chalumnae -----STLFLT-----PRTVAPOMVVVDLQONVENYNVTL 2662
Rhinatrema_bivittatum -RRHRRQDDLSLITLGGFPPEP-GAIASLSCGISNVFVRRKAEAAQTVVDLQONTQSANVTM 3276
.....3430.....3440.....3450.....3460.....3470.....3480

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      . *                               :
Homo_sapiens      GCAPA--LQAQTPGLGPRGLQATARKA-----SR 3317
Pan_troglodytes   GCAPA--LQAQTPGLGPRGLQATARKVG-----TPGASR 3322
Macaca_mulatta    GCAPT--LQAQTLDDLGPRLRTATARKA-----SR 3316
Callithrix_jacchus GCAPA--LPAQTPHLGPRGLQASGGKA-----SR 3316
Bos_taurus        GCAPA--PRTOLLEQVPGQLRATVSRKVGVRGVGGGAGVGRKPPPHVPAPPSPDPQAAR 3339
Equus_caballus     GCAPA--PHTQTWRQAPRGLRAAAAR-----KASR 3315
Pteropus_alecto    GCALV--PSTOMPAQVPRGLRAAAAR-----KASR 3313
Mus_musculus       GCTPA--QLIETS-----RATAQKV-----SR 3314
Ornithorhynchus_anatinus GCLSR--DQPHQVRAAPRKAORRPKGPS-----RAAL 3336
Pavo_muticus       SCPWG--ERPQQLRVALKKDRRKPKVPS-----RPS 3312
Pavo_cristatus     SCPWG--ERPQQLRVALKKDRRKPKVPS-----RPS 3312
Gallus_gallus      SCPWG--ERPQQLRVALKKDRRKPKVPS-----RPS 3313
Anas_platyrhynchos SCPWG--EQPQQLRAALKKDRRKPKVSG-----KPLS 3325
Chelonia_mydas      SCPWD--RQPQQLRASLKKEDRRKLKVP-----KAAL 3327
Xenopus_tropicalis SCQASMEEQPQEIERSPSRKGLKQKLR-----QRKL 3304
Latimeria_chalumnae SCSN--EKGPQOMRALPKRDRKSKLLP-----KAAL 2692
Rhinatrema_bivittatum SCQS--SEQPORIRVQEKTERTS-----KAR 3300
.....3490.....3500.....3510.....3520.....3530.....3540

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      : :                               * : : : * * * : : : : :
Homo_sapiens      RSRQPAPRHPACMLPPHLRTTRDSYQFGGSLSSHLEFVGILARHRNWPSSLMSHVLPRSS-R 3376
Pan_troglodytes   RSRQPTRHPACMLPPHLRTTRDSYQFGGSLSSHLEFVGILARHRNWPSSLMSHVLPRSS-R 3381
Macaca_mulatta    RSRQPTQDPACMLPPYLRTTQDTYQFGGSLSSHLEFVGILAPHRNWPSSLMSRVLPSP-R 3375
Callithrix_jacchus RSRQPSQDPACMLPPYLRTTQDTYQFGGSLSSHLEFVGILAPHRNWPSSLHLVLPRRP-Q 3375
Bos_taurus        RSRQPAQDSACLPPGSLRTMRDQYQFGGPLTSYLEFAHVPASPSDWSQLSMLVRPHAP-R 3398
Equus_caballus     RSRQPTQDLACMPGPFRTIRDAYQFGGPLLSYLEFAHVPAPPGDWSHLRMLVRPHTP-Q 3374
Pteropus_alecto    HSRQSTQDPACTLPGLRTIRDAYQFGGPVSSFLFAGLPAPPGDGSRLSMLVRPRTP-R 3372
Mus_musculus       RSRQPSQDLACTTPWLPGTIQDAYQFGGPLPSYLOFVGISPSSHRNRLHLSMLVRPHASQ 3374
Ornithorhynchus_anatinus HTRRSPQDSACRLP---KTVHGAFQWGSFASHLEFGPIPDITTRQVRVHLSMDVRLSAP-S 3392
Pavo_muticus       KDRRHDQAGLCQP--EPHAARGTFRFGGSPSSRWEFEIIPASFSQSRSHFSLEVRLNSS-N 3369
Pavo_cristatus     KDRRHDQAGLCQP--EPHAARGTFRFGGSPSSRWEFEIIPASFSQSRSHFSLEVRLNSS-N 3369
Gallus_gallus      KDRRHNDQAGLCQP--QPRTTTRGSRFGGSPSSRWEFEIIPASFSQSRSHFSLEVRLNSS-N 3370
Anas_platyrhynchos KDRRHNREGLCQ---LPHADEGTFRFGGTPSSRWEFEIIPASFSQSRSHFSLEVRLNSS-N 3381
Chelonia_mydas      KDRRHYQDRTICQLPRHPKAAKGAFCFGGSSSTSHVEFDDIPASFRERSLFSMDVRLNSS-S 3386
Xenopus_tropicalis ADHKHLEETSC---VHPKAVRGALRFGGSSSSSHLEFTRLPPIFRDRFHSLEIRLNAS-N 3360
Latimeria_chalumnae MGRRRRVERSCLFNQPKAFNGAYQFGGFSSSHLEYESVPESLKERSHFSMEVQLNSS-N 2751
Rhinatrema_bivittatum KGRRQRSRDKSCHVGKHPKAIQGAFCFGGSPASHLOFG-IPASFQERSRFSMDVRLNSS-N 3358
.....3550.....3560.....3570.....3580.....3590.....3600

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Homo_sapiens      GLLLFTARLRPGSPSLALFLSNGHFVAQMEGLGTRLRAQSRQRSRPGRWHKVSVRWEKNR 3436
Pan_troglodytes  GLLLFTARLRPGSPSLALFLSNGHFVAQMEGLGTRLRAQSRQRSRPGRWHKVSVRWEKNR 3441
Macaca_mulatta   GLLLFAASLRPSSPSLALFLSNGHFIAQMEGLGTRLRAQSRQRSWPGHWHKVSVRWEKNR 3435
Callithrix_jacchus GLLLFAAPAKPGSPSLALFLSNGHFVAQMEGLGPQLRVQSHQRSRLGHWHTVSVRWEKNR 3435
Bos_taurus       GLLLLAVPQTASSPSLVLFNLHRRFVAQTEGPGPQLQVQSRQRSRTGQWHTVSVRWEKSR 3458
Equus_caballus   GLLLFAAPLTASSPSLALFLSNGHFVAQTEGPGPRLRVQSRQRSRAGRWHKVSVRWEKTR 3434
Pteropus_alecto  GLLLLAVPLTADSPSLALFLSHRHIVVQTEGPGPQLRVQSHQRLRAGQWHEVAVVWGKTQ 3432
Mus_musculus     GLLLSTAPMSGRSPSLVLFLNHGHFVAQTEGPGPRLQVQSRQHSRAGQWHRVSVRWGMQQ 3434
Ornithorhynchus_anatinus GLLVYVPPTEGGRASLVLGVSRGHFLLLAGHPQQLRIRSRKRFFKTGHWHTVFFSRERNR 3452
Pavo_muticus     GLLFYVAGK--RGTFMALFVSNGRFIFLVNIGRRRLRIRSKEKYHDQQWHTVFFSRDQSR 3427
Pavo_cristatus   GLLFYVAGK--RGTFMALFVSNGRFIFLVNIGRRRLRIRSKEKYHDQQWHTVFFSRDQSR 3427
Gallus_gallus    GLLFYVAGE--RGTFMALFVSNGRFIFLVNIGRRRLRIRSKEKYHDRRWHTVFFSRDQSR 3428
Anas_platyrhynchos GLLFYVAGK--RGTFMALFVSNGRFVFVAVGRQRLRIRSKDKYRDRRWHTVFFGRDQHR 3439
Chelonia_mydas   GLLFYVASKL-QGSFMALFVSSGRFVFLADLNGNKLIRSKDKYHDGRWHTVFFGRDQSR 3445
Xenopus_tropicalis GLIFYGRDER-SSSSLSLVSNGRFVLQLVVLGKSLRLRSKEKYNDGLWHTVFFGKEKNK 3419
Latimeria_chalumnae GLLFYVSDDL-EKSYMALFVANGRFIFLIHINGAKLKLVRREKYNDSQWHTIFFSRDQNK 2810
Rhinatrema_bivittatum GLLFYVASEQ-ETSYMALFVTSGRFVLLVDSQGDKVQVRSKDRWNDGWHSVFFSRERDK 3417
.....3610.....3620.....3630.....3640.....3650.....3660

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* * : . : ** : * * :
Homo_sapiens      ILLVTDGARAWSQEGPHRQHQAEHPQPHTLFVGGLPASSHSSKLPVTVG---FSGCVKR 3493
Pan_troglodytes  ILLVMDGARAWSQEGPHRQHQAEHPQPHTLFVGGLPASSHSSKLPVTVG---FSGCVKR 3498
Macaca_mulatta   ILLVTDGARAWSQEGPRWQHQAEHPQPHTLFVGGLPASSHSSKLPVTVG---FSGCVKR 3492
Callithrix_jacchus ILLLVDGTRAWSQEGLSQHQAEHSQPHTLFVGGLPQASRHSSKLPVTVG---FSGCVKR 3492
Bos_taurus       IQLVTDGVWAHSQEEPGRQHQRQGPRPHTLFVGGLPAGGHSPRLPVAISSFFRGCVKR 3518
Equus_caballus   IQLVTDVRRAQQQEGPSQHQAEGVEGRPHTLFVGGLPDGGRSRKLPVAIISSRFSGCVKG 3494
Pteropus_alecto  VQLQLDGVRALQGEPPHRGAEGPRPHTLFVGGLPISSHRPKLPVAVSSSWFSGCVKG 3492
Mus_musculus     IQLVVDGSQTWSQKALHHRVPRAERPPYTLSVGGLPASSYSSKLPVSVG---FSGCLKK 3491
Ornithorhynchus_anatinus VQLVLDGLQAQSSSGESGGPLG----PGPFYVGGIPRGQVSSLLPKGFS-PTFSGCLKK 3506
Pavo_muticus     AQLVIDGLRAQSATVATAELFIAWTP----LYIGGVDPGRAKAHMLGTSV-SSFDGCLRN 3482
Pavo_cristatus   AQLVIDGLRAQSATVATAELFIAWTP----LYIGGVDPGRAKAHMLGTSV-SSFDGCLRN 3482
Gallus_gallus    AQLVIDGLRAQSAAVATAELFVAWTP----LYVGGVPDGRAKAHMLGTSV-SSFDGCLRN 3483
Anas_platyrhynchos AQLVIDGLRAQDAAVATTGLFMAQSP----FYVGGVPAGKAKVHVPDTSA-SSFDGCLRN 3494
Chelonia_mydas   AQLVIDGLRAQNGVVATAGDFLVQSP----FYVGGAPAAKAKAHVPDTSV-PSFSGCLKN 3500
Xenopus_tropicalis LHLVIDGIKAQSSSVVYPAVTSSLTGP----VFIGGLPPLIRRPDIPDASL-NSFHGCLKN 3474
Latimeria_chalumnae ASLVIDGLKAQTGTLLKTDDFIARNP----FYVGGVPADKAKSHIPDASL-RSFRGCMKN 2865
Rhinatrema_bivittatum IHLVVDGLRAQSKTMTFTRNFTAQSP----FYVGGVPAGIAKARVPEASR-SSFNVCMKK 3472
.....3670.....3680.....3690.....3700.....3710.....3720

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.. . : * ** * : * : * : * :
Homo_sapiens      LRLHGRPLGAPTRMAGVTPCILGPEAGLFFPGSGGVITLDLPGATLP-DVGLELEVRPL 3552
Pan_troglodytes  LRLHGRPLGAPTRMAGVTPCILGPEAGLFFPGSGGVITLDLPGATLP-DVGLELEVRPL 3557
Macaca_mulatta   LRLHGRPLGAPTRMAGVTPCISGPEAGLFFPGSGGLITLDLPGATLP-DVGLELEVRPL 3551
Callithrix_jacchus LRLHRRPLGAPTRLAGVTPCISGPELEGLFFLGSGGVVTL--AATLP-DMSLELEVRPL 3548
Bos_taurus       LRLDGRLLRAPTRMVGVTPCFSGPELEKGLFFTGSGGTVTLDTLGATLP-DVALELEVRPQ 3577
Equus_caballus   LKLDGQPLGAPTQMVGVTPCFSGPELEKGLFFAGSGGVVTLDTLGATLP-NVGLELEVRPQ 3553
Pteropus_alecto  LELDGQPLRVPTRVGVTPCLSGPVERGLFFTGSGGAITIDTLGATLP-NVSLELEVRPR 3551
Mus_musculus     LQLDKRPLRTPTQMVGVTPCVSGPLEDGLFFPGSGGVVTLELPKAKMP-YVSLELEMRPL 3550
Ornithorhynchus_anatinus LKVNGRPLGAPKRVAGVTPCYTRALERGLFFASDGGVVSVELPQAQGPPDLELELELRPQ 3566
Pavo_muticus     PQLDGKPLGTPSHTSGVTPCYEGALESGIFFAADGGSVTLADALATEQ-DLEVTLEVRPH 3541
Pavo_cristatus   PQLDGKPLGTPSHTSGVTPCYEGALESGIFFAADGGSVTLADALATEQ-DLEVTLEVRPH 3541
Gallus_gallus    PQLDGKPLGTPSHTFGVTPCYEGALESGVFFAADGGSVTLADALATEQ-DLEVTLEVRPH 3542
Anas_platyrhynchos PQLDGKPLGAPSYSFGVTPCYEGALESGVFFAEGGSISLADAVATGQ-DLEVSLEVRPH 3553
Chelonia_mydas   LKLDGKPLDSPSRVFGVTPCYEGALESGIFFAEGGYMTLADSVAMGQ-DLELRLDIRPR 3559
Xenopus_tropicalis LKLDGKAFNPPNKIMGVAQCYEGITEQGFFFSE-GGFLKLDHEVDIGQ-SLEVKLEIRPI 3532
Latimeria_chalumnae LKLDGEPLEPTRVYGVIPCFQSLEPGVYFSANGGYVTQDNSFVIGR-DFELMLEVPRPQ 2924
Rhinatrema_bivittatum LQINGQPLNSPDRVFGVTPCYEGVLQDGVYFAADGGYLMLENSVAIGD-IFQLMLEVPRPQ 3531
.....3730.....3740.....3750.....3760.....3770.....3780

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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      .. ::: .      : :      . : . * : . : :      : *** : **
Homo_sapiens      AVTGLIFHLGQARTPPYLQVTEKOVLLRADDGAGEFSTSVTRPSVLCDGQWHR----- 3607
Pan_troglodytes   AVTGLIFHLGQARTPPYLQVTEKOVLLRADDGAGEFSTSVTRPSVLCDGQWHR----- 3612
Macaca_mulatta    AVTGLIFHLGQARTPPYLQVTEKOVLLRADDGAGEFSTSVTRPSVLCDGQWHR----- 3606
Callithrix_jacchus AVASLILHLGQAQAPPYLQLEVTEKOVLLRADDGAGEFSTSVTRPSVLCDGQWHR----- 3603
Bos_taurus        TATGLVLFHLGRGQTPPYLEQLVLEKOVLLWANDGAGEFSTLVTHPAALCDGRWHR----- 3632
Equus_caballus     AASGLVLFHLGQVQAPPYLQVLEKOVLLRADDGAGEFSTVVTHPAVVCDDGQWHR----- 3608
Pteropus_alecto    TATGLIFHLGRLHAPPYLRQLQVLEKOVLLWADDGAGKFSSTLVTLISKALCDGRWHQ----- 3606
Mus_musculus       AAAGLIFHLGQALATPYMQLKVLTEOVLLQANDGAGEFSTWVTYP-KLCDGRWHR----- 3604
Ornithorhynchus_anatinus AMTGSVFYLG-SSAQSFLSLSIDHNLVTVRANDGAGEFSTSVSGP-LLCDGHWMDTQVS 3624
Pavo_muticus       SASGLIFHIGTRRSHH-LTLYMEETKVTMRAYTGADDELSTSVTCP-SLCDGQWHT----- 3594
Pavo_cristatus     SASGLIFHIGTRRSHH-LMLYMEETKVTMRAYTGADDELSTSVTCP-SLCDGQWHT----- 3594
Gallus_gallus      SASGLIFHIGTRRSHHRLVLYMEETKVTMRANTGADDEFSTSVTCP-SLCDGQWHT----- 3596
Anas_platyrhynchos SASGLIFHIGTRRSHH-LLLYMEEMKVTVRANTGSDEFQTLPCP-SLCDGQWHT----- 3606
Chelonia_mydas     SASALIFHLGTQRKHY-LTLYADDTKVTVKANTGAGEFSTSVARP-SLCDGQWHS----- 3612
Xenopus_tropicalis HHSGLLFHVG-SEGGHSVTLMAEGKVSVMAGASEYSTSVKFPQPLCDGQWHT----- 3586
Latimeria_chalumnae SPSGLVFHAG-RKG-HYVTLYTENGKATVKVNTGAGGISASVTPRQSLCDGQWHA----- 2977
Rhinatrema_bivittatum TSSGLVFHVA-GKTGPYLTVHADNREVTNVNIGAGEFSTSVTLQQSLCDGQWHS----- 3585
.....3790.....3800.....3810.....3820.....3830.....3840

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      ..      : : *      . : *
Homo_sapiens      -----LAVMKSGNVLRLVEVDAQSNHTVGP- 3631
Pan_troglodytes   -----LAVMKGGNVLRLVEVDAQSNHTVGP- 3636
Macaca_mulatta    -----LAVMKGGNVLRLVEVDAQSNHTVGP- 3630
Callithrix_jacchus -----LAVMKGGNMLRLVEVDSWSNHTEGP- 3627
Bos_taurus        -----LAVTKGGNVLRLVEVDQSNHTQGP- 3656
Equus_caballus     -----LAVTKDGNMLRLVEVDQSNHTLGP- 3632
Pteropus_alecto    -----LAVTKSGNVLRLVEVDSQSSQTVGP- 3630
Mus_musculus       -----VAVIMGRDTLRLVEVDQSNHTTGR- 3628
Ornithorhynchus_anatinus RSGTLQLGTGSIPQVHLLPGGASQGSAAPHRGPAFS-SVIRERTVVRGLVDQGNWTVGPS 3684
Pavo_muticus       -----ITATKRKKVIQVEVDAERNYAVGP- 3618
Pavo_cristatus     -----ITATKRKKVIQVEVDAERNYAVGP- 3618
Gallus_gallus      -----ITATKRKNIIQVEVDRERNYAVGP- 3620
Anas_platyrhynchos -----ITVTKWKNVLQLNVDTERNYTMGP- 3630
Chelonia_mydas     -----IAVIKGNVQLDQVDTDRNYTVGP- 3636
Xenopus_tropicalis -----VAVTKVSNVQLDQVDTGEGNHVGA- 3610
Latimeria_chalumnae -----IAVIKRNVIQLDQVDTGEGNYTVGP- 3001
Rhinatrema_bivittatum -----IAVIKGNMVIQLDQVDTQGNQTVGP- 3609
.....3850.....3860.....3870.....3880.....3890.....3900

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      : : : :      * * : : : :      .
Homo_sapiens      LLAAAAGAPAPLYLGGGLPEPMAVQP-----WPPAYCGCMRRLAVNRSPVAMTRSVEV 3683
Pan_troglodytes   LLAAAAGAPAPLYLGGGLPEPMAVQP-----WPPAYRGCMRRLAVNRSPVAMTRSVEV 3688
Macaca_mulatta    SLAAAAGAPAPLHLGGGLPEPTAMQP-----WPPAYRGCMRRLTVNRAPVTMTRSAEV 3682
Callithrix_jacchus SLAAMASATVPLYLGGGLPEPMAAKP-----WPPPYRGCMRRLVNVNQSPTVMAGSAEV 3679
Bos_taurus        APATWANTLVPLHLGGGLPEPWKR-----PHYNGCMRNLVLNQSVTWPRTAGV 3704
Equus_caballus     MLATSADALAPLHLGGGLPEPMDAHAGL-----PAYRGCMRNLVNVNRPVTLPHSAGV 3684
Pteropus_alecto    MPVISAYTLVPLHLGGGLPEPTDTQPGRPPTPHPWSPVYLGCMRSLVVNWSPTVLPSPAGM 3690
Mus_musculus       LPESLAGSPQALLHLGSLPKSSTARP-----ELPAYRGCLRLKLLINGAPVNVTAQVQI 3680
Ornithorhynchus_anatinus LQPSSASPPQGLHLGGGLPEAAETSGGPAAP---SPRPYRGCMRNLNLRQHVVDLSLSPGI 3741
Pavo_muticus       SRPPGPSARALFHLGG-LLEADEASTVS-ALP-PLPHYVGCIRNLLVNRSHVNLHTRTV 3675
Pavo_cristatus     SRPPGPSARALFHLGG-LLEADEASTVS-ALP-PLPHYVGCIRNLLVNRSHVNLHTRTV 3675
Gallus_gallus      SWPPAPSARAMFYLGGLQEADEASPV-ALP-PLPHYVGCIRNLLVNGSVYVNLQTRTV 3677
Anas_platyrhynchos SQPPAPSTKATFYLGGLQPAATEQASTAP-SLP-PLPHYVGCIRNLLINRSHMNLQQTGTI 3688
Chelonia_mydas     SQTIRSVDTKETLHLGGVPGTARLGDVLP-SLLTPLPHYVGCIRNLLVINRNPVDLQAGTV 3695
Xenopus_tropicalis SQSQPTASTGTLYVGGVPGNIHS-----PRKP-HTPYQGCIRNLLVINRKAQVDVSKPGTF 3663
Latimeria_chalumnae SHAHSAGNEELLYVGGVDPDTEI-----PVVPPSSYIGCIRNVIINQNPDLFRITKSV 3055
Rhinatrema_bivittatum GHSHSSRAKATLYVAGTPDPTYTAAVLPASSSPHPFFYVGCIRNLLIDRNPIDMSRTGSA 3669
.....3910.....3920.....3930.....3940.....3950.....3960

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

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      *  ..  **
Homo_sapiens      HGAVGASGCPAA----- 3695
Pan_troglodytes   HGAVGASGCPAA----- 3700
Macaca_mulatta    HGAVGASGCPAA----- 3694
Callithrix_jacchus HGAVGAGGCPAT----- 3691
Bos_taurus        QGAVGASGCPAT----- 3716
Equus_caballus    QGVVGASGCPAT----- 3696
Pteropus_alecto   QGAVGASGCPAT----- 3702
Mus_musculus      QGAVGMRGCPSGTLLALSKQKALTQROAKPVSPLLWH 3718
Ornithorhynchus_anatinus RGAVGVNGCPAV----- 3753
Pavo_muticus      RGSVGLKGCPVL----- 3687
Pavo_cristatus    RGSVGLKGCPVL----- 3687
Gallus_gallus     RGSVGLKGCPVL----- 3689
Anas_platyrhynchos RGSVGLRGCPVL----- 3700
Chelonia_mydas    GGSVGLTGCPVI----- 3707
Xenopus_tropicalis IGSASTNVCPAL----- 3675
Latimeria_chalumnae HGAVGLQGCPVI----- 3067
Rhinatrema_bivittatum GGFVGVNGCPAL----- 3681
.....3970.....3980.....3990.....

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