File: /media/morpheus/disk1/fst/pep\_msa/DYNGatE:IT.ps Feb 1 12:01:44 2022 Page 1 of 4

_	<b>.</b>			
Xenopus tropicalis	* MAT <mark>GRTGSY</mark> S	10		
Rhinatrema bivittatum	MAVNAGRAAGS	12		
Pavo muticus	-MAAVGRAGSFG	11		
Pavo cristatus	-MAAVGRAGSFG	11		
Gallus_gallus	-MAAVGRAGSFG	11		
Anas_platyrhynchos	-MKGVVRPGDLGGGLELCRVLSGSGVAPHKVCEHPAPPKPRLKPVPPFPTGAGAASGSRT	59		
Chelonia_mydas	MAA <mark>GRAGS</mark> FG	10		
Mus_musculus	- <mark>Maavgrvgs</mark> f <mark>g</mark>	11		
Rattus_norvegicus	-MAAV <mark>GRVGS</mark> FG	11		
Homo_sapiens	-MAAVGRVGSFG	11 11		
Pan_troglodytes Macaca mulatta	-MAAVGRVGSFG	11		
Callithrix jacchus	-MAAVGRVGSFG	11		
Heterocephalus_glaber	-MAAVGRFGSFG	11		
Canis_lupus_familiaris	-MAAVGRVGSFG	11		
Felis_catus	-MAAVGRVGSFG	11		
Equus_caballus	-MAAV <mark>GR</mark> VGSFG	11		
Bos_taurus	-MAAV <mark>GRVGS</mark> F <mark>G</mark>	11		
Latimeria_chalumnae	-MAAVS <mark>RAGSS</mark> S	11		
	1405060			
Vananus tuanisalis		10		
Xenopus_tropicalis Rhinatrema bivittatum		12		
Pavo muticus		11		
Pavo_cristatus		11		
Gallus_gallus		11		
Anas_platyrhynchos	AAGPAPPADIRAPGAAAARPAAQGGGGAGRRRPQQRRWRRRRGEPLPSVPPRPAWAQTPA	119		
Chelonia_mydas	SS	12		
Mus_musculus	<mark>SS</mark>	13		
Rattus_norvegicus	<mark>ss</mark>	13		
Homo_sapiens	Ss	13		
Pan_troglodytes	SS	13 13		
Macaca_mulatta Callithrix jacchus	SS	13		
Heterocephalus_glaber	SS	13		
Canis lupus familiaris	SS	13		
Felis catus	SS	13		
Equus_caballus	<mark>ss</mark>	13		
Bos_taurus	<mark>s</mark> c	13		
Latimeria_chalumnae				
	708090100110120			
Xenopus tropicalis	spsssfnagygonosgatasededgonlwssilsevstrsrsklpsgknvll	62		
Rhinatrema bivittatum	PFSAAGPPHVARSTNARSEAADEDGONLWSSILSEVSTRSRSKLPPGKNVLL	64		
Pavo muticus	-SSSASGAANNANAELRAGGEEDDGQNLWSCILSEVSTRSRSKLPSGKSVLL	62		
Pavo_cristatus	-SS <mark>S</mark> ASGAANNANAELRAGGEEDDGQNLWSCILSEVSTRSRSKLPSGKSVLL	62		
Gallus_gallus	-SS <mark>S</mark> A <mark>SG</mark> AANNASAELRA <mark>GGEE</mark> D <mark>DGQNLWS</mark> CIL <mark>SEVSTRSRSKLP</mark> S <mark>GK</mark> SVLL	62		
Anas_platyrhynchos	FSSAAA <mark>GAG</mark> AGSA <mark>GP</mark> AELRA <mark>GGDE</mark> D <mark>DGQNLWS</mark> CIL <mark>SEVSTRSRSKLP</mark> SGKNVLL	173		
Chelonia_mydas	SSS <mark>PG</mark> LGAGGGPAAGFTASNNAELRAGGEEDDGQNLWSCILSEVSTRSRSKLPSGKNVLL	72		
Mus_musculus	PPGLASTYASGPLANELAS-GSGGPAAGDDEDGQNLWSCILSEVSTRSRSKLPTGKNVLL	72		
Rattus_norvegicus	PPGLASTYASGPLANELAS-GSGGPAAGDDEDGQNLWSCILSEVSTRSRSKLPTGKNVLL	72		
Homo_sapiens Pan_troglodytes	PPGLSSTYTGGPLGNEIAS-GNGGAAAGDDEDGQNLWSCILSEVSTRSRSKLPAGKNVLL PPGLSSTYTGGPLGNEIAS-GNGGAAAGDDEDGQNLWSCILSEVSTRSRSKLPAGKNVLL	72 72		
Macaca mulatta	PPGLSSTYTGGPLGNEIAS-GNGGAAAGDDEDGQNLWSCILSEVSTRSRSKLPAGKNVLL PPGLSATYTGGPLSNEIAS-GNGGAAAGDDEDGQNLWSCILSEVSTRSRSKLPAGKNVLL	72		
Callithrix_jacchus	PPGLGSTYTGGPLANEIAS-GNGGAAAGDDEDGQNLWSCILSEVSTRSRSKLPAGKNVLL	72		
Heterocephalus_glaber	PPGLASTYAGGPLANELGS-GNGSAAAGDDEDGQNLWSCILSEVSTSSRSKLPGGKNVLL	72		
Canis_lupus_familiaris		72		
Felis_catus	PPGLASTYAGGPLANELTS-GNGGAAAGDDEDGQNLWSCILSEVSTRSRSKLPAGKNVLL	72		
Equus_caballus	PAGLASTYTGGPLANELTS-GNGGAAAGDDEDGQNLWSCILSEVSTRSRSKLPAGKNVLL	72		
Bos_taurus	PPGLTATYTGGPLANELAS-GNGAAAAGDDEDGQNLWSCILSEVSTRSRSKLPAGKNVLL	72		
Latimeria_chalumnae	SAS <mark>PQFGG</mark> SHSS <mark>P</mark> S <mark>SGGAVEDRYGED</mark> D <mark>DGHNLWSSILSEVSTRSRSKLP</mark> SGKTVLV	67		
	$\dots \dots 130 \dots \dots 140 \dots \dots 150 \dots \dots 160 \dots \dots 170 \dots \dots 180$			

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********* ** : ********* : ********* : **** ****
                           L<mark>GEDGAGKTS</mark>LI<mark>GK</mark>LQGIEEYKKGRGMEYLYINVHDEDRDDQTRCNVWILDGDLYHKG</mark>LL
Xenopus_tropicalis
                                                                                                       122
                           LGEDGAGKTSLIGKLQGIEEYKKGRGMEYLYINVHDEDRDDQTRCNVWILDGDLYHKGLI
Rhinatrema_bivittatum
                                                                                                       124
                           L<mark>GEDGAGKTS</mark>LI<mark>GK</mark>IQGIEEYKKGRGMEYLYLNVHDEDRDDQTRCNVRILDGDLYHKGLL
Pavo muticus
                                                                                                       122
Pavo cristatus
                           LGEDGAGKTSLIGKIOGIEEYKKGRGMEYLYLNVHDEDRDDOTRCNVRILDGDLYHKGLL
                                                                                                       122
Gallus gallus
                           LGEDGAGKTSLIGKIQGIEEYKKGRGMEYLYLNVHDEDRDDQTRCNVRILDGDLYHKGLL
                                                                                                       122
                           LGEDGAGKTSLIGKIÖGIEEYKKGRGMEYLYLNVHDEDRDDÖTRCNVWILDGDLYHKGLL
LGEDGAGKTSLIGRLOGIEEYKKGRGMEYLYLNVHDEDRDDOTRCNVWILDGDLYHKGLL
Anas_platyrhynchos
                                                                                                       233
Chelonia_mydas
                                                                                                       132
                           LGEDGAGKTSLIRRIQGIEEYKKGRGLEYLYLNVHDEDRDDQTRCNVWILDGDLYHKGLL
                                                                                                      132
Mus_musculus
Rattus_norvegicus
                           L<mark>GEDGAGKTS</mark>LIR<mark>RIQGIEEYKKGRG</mark>LEYLYLNVHDEDRDDQTRCNVWIL<mark>DG</mark>DLYHK<mark>G</mark>LL
                                                                                                       132
                           L<mark>GEDGAGKTS</mark>LIR<mark>KIQGIEEYKKGRGLEYLYLN</mark>VHDEDRDD<mark>QTRCN</mark>VWILD<mark>G</mark>DLYH<mark>KG</mark>LL
                                                                                                       132
Homo_sapiens
Pan_troglodytes
                           L<mark>GEDGAGKTS</mark>LIR<mark>KIQGIEEYKKGRGLEYLYLN</mark>VHDEDRDDQTRCNVWIL<mark>DG</mark>DLYHKGLI
                                                                                                       132
Macaca_mulatta
                           LGEDGAGKTSLIRKIOGIEEYKKGRGLEYLYLNVHDEDRDDOTRCNVWILDGDLYHKGLL
                                                                                                       132
                           L<mark>GEDGAGKTS</mark>LIR<mark>KIQGIEEYKKGRGLEYLYLN</mark>VHDEDRDDQTRCNVWILDGDLYHKGLL
Callithrix_jacchus
                                                                                                       132
Heterocephalus_glaber
                           LGEDGAGKTSLIRKIQGIEEYKKGRGLEYLYLNVHDEDRDDQTRCNVWILDGDLYHKGLL
                                                                                                       132
                           LGEDGAGKTSLIRKIQGIEEYKKGRGLEYLYLNVHDEDRDDQTRCNVWILDGDLYHKGLL
Canis_lupus_familiaris
                                                                                                       132
                           L<mark>GEDGAGKTS</mark>LIR<mark>KIQGIEEYKKGRGLEYLYFNVHDEDRDDQTRCN</mark>VWIL<mark>DGDLYHKG</mark>LL
                                                                                                       132
Felis_catus
Equus_caballus
                           L<mark>GEDGAGKTS</mark>LIR<mark>KIQGIEEYKKGRG</mark>LEYLYLNVHDEDRDDQTRCNIWILDGDLYHKG</mark>LL
                                                                                                       132
                           LGEDGAGKTSLIRKIQGIEEYKKGRGLEYLYLNVHDEDRDDQTRCNVWILDGDPYHKGLL
LGEDGAGKTNLIARLQGIEEYKKGRGMEFLYFNVHDEDRDDSARCNVWILDGDLYHKGLL
Bos_taurus
                                                                                                       132
Latimeria chalumnae
                                                                                                       127
                            .....190......200......210......220......230......240
                                    KFAMDPSSVRDTLIMLVVDMSRPWLALDSLQKWASVIREHVDKLKIPPEEMKEMEEKIVR
Xenopus tropicalis
                                                                                                       182
Rhinatrema_bivittatum
                           KFAMDASTVKDTLMMLVVDM<mark>SRPWT</mark>ALESL<mark>QKWAS</mark>VVREHIDKLKIPPEEVKEMEQQMVR
                                                                                                       184
Pavo muticus
                           KFAMESNSLKDTLIMLVVDMSRPWTAMDSLQKWANVVREHIDKLKI<mark>PP</mark>EEMKEMEQKLVR
                                                                                                       182
Pavo_cristatus
                           KFAMESNSLKDTLIMLVVDMSRPWTAMDSLQKWASVVREHIDKLKIPPEEMKEMEQKLVR
                                                                                                       182
                           KFAMEANSLKDTLIMLVVDM<mark>SRP</mark>WTAMDSL<mark>QKWASVVREHIDKLKIPPEEMKEMEOK</mark>LVR
Gallus_gallus
                                                                                                       182
Anas_platyrhynchos
                           KFAMDASSLKDTLIMLVVDMSRPWTALDSLQKWASVVREHIDKLKIPPEEMKEMEQKLVR
                                                                                                       293
                           KFAMEANSLKDTLVMLVVDM<mark>SRP</mark>WTALDSLQKWASVVREHIDKLKI<mark>PP</mark>EEIKEMEQKLVR
Chelonia mydas
                                                                                                       192
                           KFSLDALSLRDTLVMLVVDMSKPWTALDSLQKWASVVREHVDKLK1PPEEMKEMEQKLIR
                                                                                                       192
Mus_musculus
                           KFSLDALSLRDTLVMLVVDM<mark>SKP</mark>WTALDSLQKWASVVREHVDKLKIPPEEMKEMEQKLIR
                                                                                                       192
Rattus norvegicus
Homo sapiens
                           KFSLDAVSLKDTLVMLVVDMSKPWTALDSLQKWASVVREHVDKLKIPPEEMKQMEQKLIR
                                                                                                       192
                           KFSLDAVSLKOTLVMLVVDMSKPWTALDSLQKWASVVREHVDKLKIPPEEMKQMEQKLIR
KFSLDAVSLKOTLVMLVVDMSKPWTALDSLQKWASVVREHVDKLKIPPEEMKQMEQKLIR
Pan troglodytes
                                                                                                       192
                                                                                                       192
Macaca_mulatta
Callithrix jacchus
                           KFSLDVISLKDTLVMLVVDMSKPWTALDSLQKWASVVREHVDKLKIPPEEMKQMEQKLIR
                                                                                                       192
                           KF<mark>SLDAISLKDT</mark>LVMLVVDM<mark>SKP</mark>WTALDSLQKWASVVREHVDKLKI<mark>PP</mark>EEMKEMEQQLIR
Heterocephalus_glaber
                                                                                                       192
Canis_lupus_familiaris
                           KFSLDAISLKDTLVMLVVDMSKPWTALDSLQKWASVVREHIDKLKIPPEEMKEMEQKLIR
                                                                                                       192
                           KFSLDAISLKDTLVMLVVDMSKPWTALDSLQKWASVIREHIDKLKIPPEEMKEMEQKLIR
                                                                                                       192
Felis_catus
                           KFSLDAVSLKDTLVMLVVDMSKPWTALDSLQKWASVVREHIDKLKLPPEEMKEMEQKLIR
Equus caballus
                                                                                                       192
                           KFSLDAISLKDTLVMLVVDMSKPWTALDSLQKWASVVREHIDKLKIPPEEMKEMEQKLVR
Bos_taurus
                                                                                                       192
                           KFAMNSC<mark>PVKDMLVMLVVDVARPWSALETLHK</mark>WASVIREHVDKLKI<mark>PPEEMKEMEQQ</mark>LIR
                                                                                                       187
Latimeria chalumnae
                            .....250......260......270......280......290......300
                                                       :*: .:.*:*** *** ***:**:*****
                            **** ** * ******
                           NFQEYVEPGEEFPASPQKRNTSSDEQ-DDSVILPLGEDTLTHNLGIPVVVVCTKCDAISI
Xenopus_tropicalis
                                                                                                       241
                           EFQEYEEPREDFPASPQRRNTLLQEDTDDSVILPLGKDTLTHNLGMPVVVVCTKCDAISI
Rhinatrema bivittatum
                                                                                                       244
                           DFQEYVEPGEDFPASPQRRNTSLQEDKDDSVILPLGADTLTCNLGIPVVVVCTKCDAISV
Pavo_muticus
                                                                                                       242
                           DFQEYVEPGEDFPA<mark>SPQRRNT</mark>SL<mark>QEDKDDS</mark>VIL<mark>PLGADTLTCNLGIP</mark>VVVV<mark>CTKCDAIS</mark>V
                                                                                                       242
Pavo cristatus
                           DF<mark>QEYVEPGEDFPASPQRRNT</mark>SLQEDKDDSVIL<mark>P</mark>LGADTLTCNLGIPVVVVCTKCDAISV
Gallus_gallus
                                                                                                       242
Anas platyrhynchos
                           DFQEYVEPGEDFPASPQRRNTSLQEDKDDSVILPLGADTLTCNLGIPVVVVCTKCDAISV
                                                                                                       353
                           DFQEYIEPGEDFPASPQRRNMSIQEDKDDSVILPLGADTLTCNLGIPVVVVCTKCDAISL
                                                                                                       252
Chelonia_mydas
                           DFQEYVEPGEDFPASPQRRTTGAQEDRGDSVVLPLGADTLTHNLGLPVLVVCTKCDAISV
Mus_musculus
                                                                                                       252
                           DFQEYVEPGEDFPASPQRRATAAQEDRDDSVVLPLGADTLTHNLGLPVLVVCTKCDAISV
Rattus_norvegicus
                                                                                                       252
                           DFQEYVEPGEDFPASPQRRNTASQEDKDDSVVLPLGADTLTHNLGIPVLVVCTKCDAISV
                                                                                                       252
Homo_sapiens
                           DFQEYVEPGEDFPASPQRRNTASQEDKDDSVVLPLGADTLTHNLGIPVLVVCTKCDAISV
Pan_troglodytes
                                                                                                       252
Macaca_mulatta
                           DFQEYVEPGEDFPASPQRRNTASQEDKDDSVVLPLGADTLTHNLGIPVLVVCTKCDAISV
                                                                                                       252
                           DFQEYVE<mark>PGEDFPASPQRRNTTSQEDKDDS</mark>VVL<mark>P</mark>LGADTLTHNLGIPVLVVCTKCDAISV
Callithrix_jacchus
                                                                                                       252
Heterocephalus_glaber
                           DFQEYVEPGEEFPASPQRRSTTSQEDKDDSVVLPLGADTLTHNLGIPVLVVCTKCDAISV
                                                                                                       252
Canis_lupus_familiaris
                           DFQEYVEPGEDFPASPQRRNTGSQEDKDDSVVLPLGADTLTHNLGIPVLVVCTKCDAISV
                                                                                                       252
Felis catus
                           DFQEYVEPGEDFPASPQRRNTGSQEDKDDSVVLPLGADTLTHNLGIPVLVVCTKCDAISV
                                                                                                       252
                           DF<mark>QEYVEPGEDFPASPQRRNTVSQEDKDDS</mark>VVLPLGADTLTHNLGIPVLVVCTKCDAISV
Equus_caballus
                                                                                                       252
Bos_taurus
                           DFQEYVEPGEDFPA<mark>SPQRR</mark>STA<mark>SQEDRDDS</mark>VLL<mark>PLGADTL</mark>TQNLGV<mark>P</mark>VLVV<mark>CTKCD</mark>AISV
                                                                                                       252
                           QFQEYTEPGEAF<mark>PASPQRRNT</mark>SLQEEQDENVVLPLGEDTLTHNLGIPVVVVCTKCDTISV
Latimeria_chalumnae
                                                                                                       247
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...310......320......330......340......350......360

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*************
                            LEKEHDYRDEHFDFIQSHIRKFCLQYGAALIYTSIKENKNIDIVYKYIVQQLYGFLFNMP
Xenopus_tropicalis
                                                                                                        301
                            LEKEHDYRDEHFDFIQLHIRRFCLQYGAALIYTSIKENKNIDIVYKFIVQKLYGFPFNIP
                                                                                                        304
Rhinatrema_bivittatum
Pavo muticus
                            L<u>EKEHDYRDEHFD</u>FI<mark>QSHIRR</mark>FCL<mark>QYGAALIYTSVKENKN</mark>IDLVYKYIVQKLYGFPFNVP
                                                                                                        302
Pavo cristatus
                            LEKEHDYRDEHFDFIQSHIRRFCLQYGAALIYTSVKENKNIDLVYKYIVQKLYGFPFNVP
                                                                                                        302
Gallus gallus
                            LEKEHDYRDEHFDFIQSHIRRFCLQYGAALIYTSVKENKNIDLVYKYIVQKLYGFPFNVP
                                                                                                        302
                                                                                                        413
                            L<mark>EKEHDYRDEHFD</mark>FIQSHI<mark>RR</mark>FCLQYGAALIYTSVKENKNIDLVYKYIVQKLYGFP</mark>FNV<mark>P</mark>
Anas_platyrhynchos
Chelonia_mydas
                            L<mark>EKEHDYRDEHFDFIQSHIRRFCLQYG</mark>AALIY<mark>TSVKENKN</mark>IDLVYRYIV<mark>QK</mark>LYGF<mark>P</mark>FNVS
                                                                                                        312
                            LEKEHDYRDEHFDFIQSHIRKFCLQYGAALIYTSVKENKNIDLVYKYIVQKLYGFPYKIP
                                                                                                        312
Mus_musculus
Rattus_norvegicus
                            LEKEHDYRDEHFDFIQSHIRKFCLQYGAALIY<mark>TSVKENKN</mark>IDLVYKYIVQKLYGFPYKIP
                                                                                                        312
                            L<mark>EKEHDYRDEHFDFIQSHIRKFCLQYG</mark>AALIYTSV<mark>KENKN</mark>IDLVYKYIV<mark>QKLYGFP</mark>YKI<mark>P</mark>
                                                                                                        312
Homo_sapiens
Pan_troglodytes
                            L<u>EKEHDYRDEHFD</u>FIQSHI<mark>RK</mark>FCLQYGAALIYTSVKENKNIDLVYKYIVQKLYGFPYKIP
                                                                                                        312
                            LEKEHDYRDEHFDFIQSHIRKFCLQYGAALIYTSVKENKNIDLVYKYIVQKLYGFPYKIP
                                                                                                        312
Macaca_mulatta
Callithrix_jacchus
                            L<u>EKEHDYRDEHFD</u>FI<mark>QSHIRK</mark>FCL<mark>QYGAALIYTSVKENKN</mark>IDLVYKYIV<mark>QK</mark>LYGF<mark>P</mark>YKI<mark>P</mark>
                                                                                                        312
Heterocephalus_glaber
                            L<mark>EKEHDYRDEHFD</mark>FIQSHI<mark>RKFCLQYG</mark>AALIYTSVKENKNIDLVYKYIIQKLYGFP</mark>YKI<mark>P</mark>
                                                                                                        312
Canis_lupus_familiaris
                            LEKEHDYRDEHFDFIQSHIRKFCLQYGAALIYTSVKENKNIDLVYKYIVQKLYGFPYKIP
                                                                                                        312
                            L<mark>EKEHDYRDEHFD</mark>FIQSHIRKF<mark>CLQYG</mark>AALIYTSV<mark>KENKN</mark>IDLVYKYIV<mark>Q</mark>KLYGFP</mark>YKI<mark>P</mark>
                                                                                                        312
Felis_catus
Equus_caballus
                            LEKEHDYRDEHFDFIQSHIRKFCLQYGAALIYTSV<mark>KENKN</mark>IDLVYKYIV<mark>QK</mark>LYGF<mark>P</mark>YKIP
                                                                                                        312
                            L<mark>EKEHDYRDEHFD</mark>FIQSHI<mark>RKFCLQYG</mark>AALIYAS<mark>VKENKNID</mark>LVYKYIV<mark>QK</mark>LYGF<mark>P</mark>YKI<mark>P</mark>
Bos_taurus
                                                                                                        312
Latimeria chalumnae
                            LEKEHDYRDEHFDFVQSHIRRFCLHYGAALIYTSIKESKNIDLVYKYLVHRLYGFPFNTP
                                                                                                        307
                            \dots \dots 370 \dots 380 \dots 390 \dots 400 \dots 410 \dots 420
                            AVVVEKDAVFIPAGWDNDKK<mark>IGILHENFQTLKPEDTFEDIITKPPVRK</mark>FVHEKEIVAEDD
Xenopus tropicalis
                                                                                                        361
Rhinatrema_bivittatum
                            AVVV<mark>EKD</mark>AVFI<mark>PAG</mark>WDNEKK<mark>IGILHEN</mark>FQTL<mark>K</mark>IEDSFEDII<mark>TKPP</mark>V<mark>RK</mark>FVHEKEVVAEDD
                                                                                                        364
Pavo muticus
                            AVVVEKDAVFI<mark>PAGWDNDKKIGILHENFQTLKAEDSFEDSIRKPP</mark>VRKFVHEKEIVAEDD
                                                                                                        362
                            AVVV<mark>EKD</mark>AVFI<mark>P</mark>AGW<mark>DNDKK</mark>IGILHENF<mark>QT</mark>LKAEDSFEDSIRKPPVRKFVHEKEIVAEDD
Pavo_cristatus
                                                                                                        362
Gallus_gallus
                            AVVVEKDAVFIPAGWDNDKKIGILHENFQTLKAEDSFEDSIRKPPVRKFVHEKEIVAEDD
                                                                                                        362
                            AVVV<mark>EKD</mark>AVFI<mark>PAGWDNDKK</mark>IGILHENF<mark>QT</mark>LKAEDSFEDNIR<mark>KPP</mark>VRKFVHEKEIVAEDD
Anas_platyrhynchos
                                                                                                        473
Chelonia mydas
                            AAVVEKDAVFIPAGWDNDKKIGILHENFQTLKADDSFEDIITKPPVRKFVHEKEIVAEDD
                                                                                                        372
                            AVVVEKDAVFIPAGWDNDKKIGILHENFQTLKVEDNFEDIITKPPVRKFVHEKEIMAEDD
                                                                                                        372
Mus_musculus
Rattus_norvegicus
                            AVVVEKDAVFIPAGWDNDKKIGILHENFQTLKIEDNFEDIITKPPVRKFVHEKEIMAEDD
                                                                                                        372
                            AVVV<mark>EKD</mark>AVFI<mark>PAGWDNDKK</mark>IGILHENF<mark>QT</mark>LKAEDNFEDII<mark>TKPP</mark>VRKFVHEKEIMAEDD
Homo sapiens
                                                                                                        372
Pan troglodytes
                            AVVV<mark>EKD</mark>AVFI<mark>PAGWDNDKK</mark>IGILHENFQTL<mark>K</mark>AEDNFEDII<mark>TKPP</mark>VRKFVHEKEIMAEDD
                                                                                                        372
                            AVVVEKDAVFIPAGWDNDKK<mark>IGILHENFQTLKAEDNFEDIITKPPVRK</mark>FVHEKEIMAEDD
                                                                                                        372
Macaca_mulatta
Callithrix jacchus
                            AVVVEKDAVFIPAGWDNDKK<mark>IGILHENFQTLKAEDNFEDIITKPPVRK</mark>FVHEKEIMAEDD
                                                                                                        372
Heterocephalus_glaber
                            AVVVEKDAVFIPAGWDNDKKIGILHENFQTLKAEDNFEVIITKPPVRKFVHEKEIMAEDD
                                                                                                        372
Canis_lupus_familiaris
                            AVVVEKDAVFIPAGWDNDKKIGILHENFQTLKAEDNFEDIITKPPVRKFVHEKEIVAEDD
                                                                                                        372
                            AVVVEKDAVFIPAGWDNDKKIGILHENFQTLKAEDNFEDIITKPPVRKFVHEKEIVAEDD
                                                                                                        372
Felis_catus
                            AVVVEKDAVFIPAGWDNDKKIGILHENFOTLKAEDNFEDIITKPPVRKFVHEKEIVAEDD
Equus caballus
                                                                                                        372
Bos_taurus
                            AVVVEKDAVFIPAGWDNDKKIGILHENFQTLKAEDNFEDIITKPPVRKFVHEKEIMAEDD
                                                                                                        372
                            ALVVEKDAVFIPAGWDNDKK<mark>IGILHENFQTIKADDP</mark>FEDIIVKPPIRKFVHEKEIVTEDD
                                                                                                        367
Latimeria chalumnae
                            ......430......440......450.......460......470.......480
                                                        *:*** ******* ::*** ::****
                            ***** ** ***** ****
                            QVFLMKQQSQLAKQPPAAAGR-QDASPRVPGGSPRTPSRSGSTNVASVSPVPTGTKKIDP
                                                                                                        420
Xenopus_tropicalis
                            VFLMKQQSQLAKQPPSAAGRPVDSSPRVPGGSPRTPSRSGTSNVANSTPIPAGAKKIDP
                                                                                                        424
Rhinatrema bivittatum
                            VFLMKQQSQLAKQPPTAAGRPVDASPRVPGGSPRTPNRSVTSNVASVTPIPAGSKKIDP
Pavo_muticus
                                                                                                        422
                            QVFLMKQQSQLAKQPPTAAGRPVDASPRVPGGSPRTPNRSVTSNVASVTPIPAGSKKIDP
                                                                                                        422
Pavo cristatus
                            QVFLMKQQSQLAKQPPTAAGRPVDAS<mark>PRVPGGSPRTPNRSVTSNVASVTP</mark>IPAGSKKIDP
Gallus_gallus
                                                                                                        422
Anas platyrhynchos
                            VFLMKQQSQLAKQPPTAAGRPVDASPRVPGGSPRTPNRSVTSNVASVTPIPTGSKKIDP
                                                                                                        533
                             VFLMKQQSLLAKQPPTAAGRPVDASPRVPGGSPRTPNRSVTSNVASVTPIPTGSKKIDP
                                                                                                        432
Chelonia_mydas
                             VFLMKLQSLLAKQ<mark>PPTAAGRP</mark>VDAS<mark>PRVPGGSPRTPNRS</mark>VSSNVASVS<mark>P</mark>IPAGSKKIDP
                                                                                                        432
Mus_musculus
                             VFLM<mark>KLQSLLAKQPPTAAGRPVDASPRVPGGSPRTPNRSVSSNVASVSP</mark>IPAGSKKID<mark>P</mark>
Rattus_norvegicus
                                                                                                        432
                            QVFLMKLQSLLAKQPPTAAGRPVDA<mark>SPRVPGGSPRTPNRSVSSNVAS</mark>VSPIPAGSKKIDP
Homo_sapiens
                                                                                                        432
                            VFLMKLQSLLAKQPPTAAGRPVDASPRVPGGSPRTPNRSVSSNVASVSPIPAGSKKIDP
Pan_troglodytes
                                                                                                        432
Macaca_mulatta
                             VFLMKLQSLLAKQPPTAAGRPVDA<mark>SPRVPGGSPRTPNRS</mark>VSSNVASVSPIPAGSKKIDP
                                                                                                        432
                            QVFLMKLQSLLAKQPPTAAGRPVDASPRVPGGSPRTPNRSVSSNVASVSPIPAGSKKIDP
Callithrix_jacchus
                                                                                                        432
Heterocephalus_glaber
                             VFLMKLQSLLAKQPPSAAGRPVDASPRVPGGSPRTPNRSVSSNVASVSPIPAGSKKIDP
                                                                                                        432
Canis_lupus_familiaris
                            QVFLMKLQSLLAKQPPTAAGRPVDASPRVPGGSPRTPNRSVSSNVASVSPIPAGSKKIDP
                                                                                                        432
Felis_catus
                             VFLMKLQSLLAKQPPTAAGRPVDASPRVPGGSPRTPNRSVSSNVASVSPIPAGSKKIDP
                                                                                                        432
                            QVFLMKLQSLLAK<mark>QPPTAAGRPVDASPRVPGGSPRTPNRSVSSNVASVSP</mark>IPAGSKKIDP
Equus_caballus
                                                                                                        432
Bos_taurus
                            QVFLMKLQSLLAKQPPTAAGRPVDASPRVPGGSPRTPNRSVSSNVASVSPIPAGSKKIDP
                                                                                                        432
Latimeria_chalumnae
                            QVFLMKLQSQLAKQPP<mark>IAAGRPVDASPRPPGGSPRTP</mark>SRSGSANVASVT<mark>P</mark>IPAGTKKIDP
                                                                                                        427
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 $\dots 490 \dots 500 \dots 510 \dots 520 \dots 530 \dots 540$ 

# File: /media/morpheus/disk1/fst/pep\_msa/DYNGatE:IT.ps Feb 1 12:01:44 2022 Page 4 of 4

	***************	* . * * * * * *	
Xenopus_tropicalis	NMKAGTTSEGVLANFFNSLLSKKTGSPGAGG	-T <mark>GIP</mark> AGNST <mark>G</mark> NSL <mark>PASAKKTGQKP</mark>	475
Rhinatrema_bivittatum	NMKAGTTSEGVLANFFNSLLSKKTGSPGGGG	NTGISNSPSVG <mark>SGLPVSAKKSGQKP</mark>	480
Pavo_muticus	NMKAGATSEGVLANFFNSLLSKKTGSPGGPGGVGG	SPGGGSAGGTG <mark>S</mark> NLPPSAKK <mark>S</mark> GQKP	482
Pavo_cristatus	NMKAGATSEGVLANFFNSLLSKKTGSPGGPGGVGG	S <mark>PGGGSAGGTGS</mark> NLPP <mark>S</mark> AKKSGQKP	482
Gallus_gallus	NMKAGATSEGVLANFFNSLLSKKTGSPGGPGGVGG	S <mark>SPGGGSAGGTGS</mark> NLPP <mark>S</mark> AKK <mark>S</mark> GQKP	482
Anas_platyrhynchos	NMKAGATSEGVLANFFNSLLSKKTGSPGGPGGVGG	S <mark>PGGGSTGGAGS</mark> NLPP <mark>SAKKSGQKP</mark>	593
Chelonia_mydas	NMKAGATSEGVLANFFNSLLSKKTGSPGGPGVGGG	S <mark>PGGVGSGGGGS</mark> NL <mark>PPS</mark> AKK <mark>SGQKP</mark>	492
Mus_musculus	NMKAGATSEGVLANFFNSLLSKKTGSPGGPGVG-G	S <mark>PGG-GAAGASP</mark> SLPP <mark>S</mark> AKK <mark>SGQKP</mark>	490
Rattus_norvegicus	NMKAGATSEGVLANFFNSLLSKKTGSPGGPGVG-G	S <mark>PGG-GAAGAST</mark> SL <mark>PPSAKKSGQKP</mark>	490
Homo_sapiens	NMKAGATSEGVLANFFNSLLSKKTGSPGGPGVSGG	S <mark>PAG-GAGGGSSGLPPS</mark> TKKSGQKP	491
Pan_troglodytes	NMKAGATSEGVLANFFNSLLSKKTGSPGGPGVSGG	S <mark>SP</mark> AG-G <mark>A</mark> GGG <mark>SS</mark> GL <mark>PPS</mark> TKK <mark>SGQKP</mark>	491
Macaca_mulatta	NMKAGATSEGVLANFFNSLLSKKTGSPGGPGVSGG	S <mark>PAG-GAGGGSSGLPPSAKKSGQKP</mark>	491
Callithrix_jacchus	NMKAGATSEGVLANFFNSLLSKKTGSPGGPGVSGG	S <mark>PAG-GAGGGSS</mark> CL <mark>PPS</mark> AKKSGQKP	491
<pre>Heterocephalus_glaber</pre>	NMKAGATSEGVLANFFNSLLSKKTGSPGGPGVGGG	S <mark>PGV-GAGGGSSGLPPS</mark> AKK <mark>SGQKP</mark>	491
Canis_lupus_familiaris	NMKAGATSEGVLANFFNSLLSKKTGSPGGPGVGSG	S <mark>PGG-GAGSGSSGLPPS</mark> AKK <mark>SGQKP</mark>	491
Felis_catus	NMKAGATSEGVLANFFNSLLSKKTGSPGGPGVGSG	SPGG-GAGGGSSGLPPSAKKSGQKP	491
Equus_caballus	NMKAGATSEGVLANFFNSLLSKKTGSPGGPGVGGG	SPGS-GAAGGSSVLSPSAKKSGQKP	491
Bos_taurus	NMKAGATSEGVLANFFNSLLSKKTGSPGGPGVGGG	S <mark>PGG-GAAGGGGGLPPS</mark> AKK <mark>SGQ</mark> KP	491
Latimeria_chalumnae	NMKAGTTSEGVLANFFNSLLSKKTGTAG		470
	550560570	580590600	
	** **: **: **: : : : : : : : : : : : :		
Xenopus_tropicalis	VLTDVQAELERISRKPDIVSPTTPTSPTENDTS	508	
Rhinatrema_bivittatum	VLTDVQAELERISRKSDSLSPLSPISPMEEEAS	513	
Pavo muticus	VLTDVOAELDRISRKPEMVSPTSPTSPTEGEAS	515	

VL<mark>TD</mark>VQAELDRISRKPEMVSPTSPTSPTEGEAS Pavo\_cristatus 515 VLTDVQAELDRISRKPEMVSPTSPTSPTEGEAS Gallus\_gallus 515 Anas\_platyrhynchos VLTDVQAELDRISRKPDMVSPTTPTSPTEGEAS 626 VL<mark>TD</mark>VQAELDRISRKPEMVSPTTPTSPTEGEAS Chelonia\_mydas 525 VL<mark>SD</mark>VHA<mark>ELDRITRKPAS</mark>VSPTTPTSPTEGEAS 523 Mus\_musculus VLSDVHAELDRITRKPASVSPTTPPSPTEGEAS Rattus\_norvegicus 523 VL-DVHAELDRITRKPVTVSPTTPTSPTEGEAS Homo\_sapiens 523 VL-DVHA<mark>E</mark>LDRI<mark>TRKP</mark>VTV<mark>SPTTPTSP</mark>TEGEAS Pan troglodytes 523 VL-DVHAELDRITRKPVTVSPTTPTSPTEGEAS Macaca\_mulatta 523 Callithrix\_jacchus VL-DVHAELDRITRKPVTVSPTTPTSPTEGEAS 523 Heterocephalus\_glaber VL<mark>SD</mark>VHAELDRITRKPVSVSPTTPTSPTEGEAS 524 Canis\_lupus\_familiaris VLSDVHAELDRIARKPVTVSPAAPTSPTEGEAS 524 VL<mark>SDVHAELDRIARKP</mark>VTVSPTTPTSPTEGEAS 524 Felis\_catus VLSDVHAELDRIARKPVTVSSTTSTSPTEGEAS Equus\_caballus 524 VL<mark>SD</mark>VHAELDRIARKP<mark>VTVSTTTPTSP</mark>AEGEAS Bos\_taurus 524 VLTDVQAELNRISRKPEAVSPTSPTSPID-EAS 502 Latimeria chalumnae ......610......620.......630...