

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/USP17a.psa Tue Feb 1 14:51:10 2022

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	..	::		::.*.*.*.*.*.*.*.*.*.	
Pavo_muticus	-----YRLNHPRHFN--DMFWS	CROSTFAEMKKKFSQVESAAEEPRVLCIIQDTTNS	51		
Pavo_cristatus	-----YRLNHPRHFN--DMFWS	CROSTFAEMKKKFSQVESAAEEPRVLCIIQDTTNS	51		
Gallus_gallus	MKFENC	CFRLNHPSHLGN--DMFWS	CROSTLAEMKKKFAQVESAAEEPRVLCIIQDTTNS	58	
Chelonia_mydas	-----MVPSEENQLVPKEDMFWS	CRONLFDEMCKKFSQIESAADPRVLCIIQDIITNS	53		
Mus_musculus	-----MVPGEENQLVPK-	-----EIEAEEPRVLCIIQDTTNS	33		
Rattus_norvegicus	-----MVPGEENQLVPKEDVFWR	CRONIFDEMCKKFLQIENAEEPRVLCIIQDTTNS	53		
Pan_troglodytes	-----MVPGEENQLVPKEDVFWR	CRONIFDEMCKKFLQIENAEEPRVLCIIQDTTNS	53		
Macaca_mulatta	-----MVPGEENQLVPKEDVFWR	CRONIFDEMCKKFLQIENAEEPRVLCIIQDTTNS	53		
Homo_sapiens	-----MVPGEENQLVPK-	-----EIEAEEPRVLCIIQDTTNS	33		
Callithrix_jacchus	-----MVPGEENQLVPKEDVFWR	CRONIFDEMCKKFLQIENAEEPRVLCIIQDTTNS	53		
Bos_taurus	-----MVPGEENQLVPKEDVFWR	CRONIFDEMCKKFLQIENAEEPRVLCIIQDTTNS	53		
Equus_caballus	-----MVPGEENQLVPKEDVFWR	CRONIFDEMCKKFLQIENAEEPRVLCIIQDTTNS	53		
Canis_lupus_familiaris	-----MVPGEENQLVPKEDVFWR	CRONIFDEMCKKFLQIENAEEPRVLCIIQDTTNS	53		
Rhinatrema_bivittatum	-----MVPGEESHLPREGMFWS	CROSTIFDEMCKKFSQIENADELRALCIIQDTTNY	53		
Xenopus_tropicalis	-----MRPGEESHLPKEGMFWS	CROSTIFNEMCKKFSQIENADEPRVLCIVDDTSC	53		
	1.....10.....20.....30.....40.....50.....60				

	*.:**:*:*.*.*.:*:***.*.*:.***.*	. . : . : * :
Pavo_muticus	KTVNERVITLNPASTPLKKLFEDVASKVGYNVTGTFDLVWNGD-NVTEMTPIDQNSDKTI	110
Pavo_cristatus	KTVNERVITLNPASTPLKKLFEDVASKVGYNVTGTFDLVWNGD-NVTEMTPIDQNSDKTI	110
Gallus_gallus	KTVNERVITLNPASTPLKKLFEDVASKVGYNVTGTFDLVWNGD-NVTDMTPIDQNSDKTI	117
Chelonia_mydas	KTVNERIITLNLVPSTPLRRLFEDVASKVGYNVTGTFDLVWNGI-NVADMTPLDQTSDKSI	112
Mus_musculus	KTVSERITLNLPASTPVRKLFEDEVANKVGYNVTGTFDLTRENGV-TTADMAPLDHTSDKSL	92
Rattus_norvegicus	KTVNERITVNLPASTPVRKLFEDEVANKVGYNVTGTFDLTWNGI-NTADLAPLDHTSDKSL	112
Pan_troglodytes	KTVNERIITLNLPASTPVRKLFEDEVANKVGYNVTGTFDLVWNGI-NTADMAPLDHTSDKSL	112
Macaca_mulatta	KTVNERIITLNLPASTPVRKLFEDEVANKVGYNVTGTFDLVWNGI-NTADMAPLDHTSDKSL	112
Homo_sapiens	KTVNERIITLNPASTPVRKLFEDEVANKVGYNVTGTFDLVWNGI-NTADMAPLDHTSDKSL	92
Callithrix_jacchus	KTVNERIITLNLPASTPVRKLFEDEVANKVGYNVTGTFDLVWNGI-NTADMAPLDHTSDKSL	112
Bos_taurus	KTVNERIITLNLPASTPLRKLFEDEVANKVGYNVTGTFDLVWNGI-NTADMAPLDHTSDKSL	112
Equus caballus	KTVNERIITLNLPASTPLRKLFEDEVANKVGYNVTGTFDLVWNGI-NTADTAPLDHTSDKSL	112
Canis_lupus_familiaris	KTVNERIITLNLPASTPLRKLFEDEVANKVGYNVTGTFDLVWNGI-NAADMAPLDHTSDKSL	112
Rhinatrema_bivittatum	KTVNERIITLNLPVSTSVRRLEDEVASKAGYVNGTFDLVWASSV-NAADTSPLDHTSNKSL	112
Xenopus_tropicalis	KNINERITLNLPASTSVKQLYEDVSSKAGYVSGTIFSLMWNGASNMVDMAALDPIDRTL	113
70.....80.....90.....100.....110.....120	

	..** *****:** *:: :*.: *	..** *****:** *:: :*.: *	
Pavo_muticus	LDAGFEPGKKNFLHLTDKGEOPHIMQEESEGTTE----	DSAQDRFIGPLPREGSVGCTST	165
Pavo_cristatus	LDAGFEPGKKNFLHLTDKGEOPHIMQEESEGTTE----	DSAQDRFIGPLPREGSVGCTST	165
Gallus_gallus	LDAGFEPGKKNFLHLTDKGEOPHIMQEESEGTTE----	DSAQDRFIGPLPREGSVGCTST	172
Chelonia_mydas	LDAGFEVGKKNFLHLTDKGEOPHIVSE-SGMDT-----	DGNQERFIGPLPREGSVGCTST	166
Mus_musculus	LDANFEPGKKNFLHLTDKGEPPQMLLEDSSNNVD-----	DSVHDFRFIGPLPREGSVASTST	147
Rattus_norvegicus	LDANFEPGKKNFLHLTDKGEOPQMLLDDSSHVD-----	DSVHDFRFIGPLPREGSVASTST	167
Pan_troglodytes	LDANFEPGKKNFLHLTDKGEOPQILLEDSSAGE-----	DSVHDFRFIGPLPREGSVGSTST	167
Macaca_mulatta	LDANFEPGKKNFLHLTDKGEOPQILLEDSSAGE-----	DSVHDFRFIGPLPREGSVGSTST	167
Homo_sapiens	LDANFEPGKKNFLHLTDKGEOPQILLEDSSAGE-----	DSVHDFRFIGPLPRESGGSTST	147
Callithrix_jacchus	LDANFEPGKKNFLHLTDKGEOPQMLLEDSSAGE-----	DSVHDFRFIGPLPREGSVGSTST	167
Bos_taurus	LDANFEPGKKNFLHLTDKGEOPQILLEDSSAGD-----	DSVHDKFIGPLPREGSVGSTST	167
Equus_caballus	LDANFEPGKKNFLHLTDKGEOPQILLEDSSAGD-----	DSVHDFRFIGPLPREGSVGSTST	167
Canis_lupus_familiaris	LDANFEPGKKNFLHLTDKGEOPQILLEDSSAGD-----	DNVHDFRFIGPLPREGSVGSTST	167
Rhinatrema_bivittatum	LDTGFESEGKKNFLHLTDKGEOPOLMSDESGTIADSSGLDDSTQEKFIGPLPRESAIGCSS		172
Xenopus_tropicalis	QEAGFEAGKKNFLHLTDKNGEOPOLTSDESGTIADSSGLDDSTQEKFIGPLPRESEVACTST		173

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Pavo_muticus	DYVSQSYSYASVLSKSETGYVGLVNQAMTCYLNSLLQTLFMTPEFRNALYKWEFEES	225
Pavo_cristatus	DYVSQSYSYSSVLSKSETGYVGLVNQAMTCYLNSLLQTLFMTPEFRNALYKWEFEES	225
Gallus_gallus	DYVSQSYSYSSVLSKSETGYVGLVNQAMTCYLNSLLQTLFMTPEFRNALYKWEFEES	232
Chelonia_mydas	DYVCONYSYSSILSKSETGYVGLVNQAMTCYLNSLLQTLFMTPEFRNALYKWEFEES	226
Mus_musculus	DYVQNYSSYSSILNKSETGYVGLVNQAMTCYLNSLLQTLFMTPEFRNALYKWEFED	207
Rattus_norvegicus	DYVSQSYSYSSILNKSETGYVGLVNQAMTCYLNSLLQTLFMTPEFRNALYKWEFEES	227
Pan_troglodytes	DYVSQSYSYSSILNKSETGYVGLVNQAMTCYLNSLLQTLFMTPEFRNALYKWEFEES	227
Macaca_mulatta	DYVSQSYSYSSILNKSETGYVGLVNQAMTCYLNSLLQTLFMTPEFRNALYKWEFEES	227
Homo_sapiens	DYVSQSYSYSSILNKSETGYVGLVNQAMTCYLNSLLQTLFMTPEFRNALYKWEFEES	207
Callithrix_jacchus	DYVSQSYSYSSILNKSETGYVGLVNQAMTCYLNSLLQTLFMTPEFRNALYKWEFEES	227
Bos_taurus	DYVSQSYSYSSILNKSETGYVGLVNQAMTCYLNSLLQTLFMTPEFRNALYKWEFEES	227
Equus_caballus	DYVSQSYSYSSILNKSETGYVGLVNQAMTCYLNSLLQTLFMTPEFRNALYKWEFEES	227
Canis_lupus_familiaris	DYVSONYSYSSILNKSETGYVGLVNQAMTCYLNSLLQTLFMTPEFRNALYKWEFEES	227
Rhinatrema_bivittatum	DYISQNSYSSILSKSDTGYVGLVNQAMTCYLNSLLQTLFMTPEFRNALYKWEFEES	232
Xenopus_tropicalis	DYVSONYSYSSLLSKSDTGYVGLVNQAMTCYLNSLLQTLFMTPEFRNALYKWEFEES	233
190.....200.....210.....220.....230.....240	

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Pavo_muticus	PVTSIPYQLQRLFVLLQTSKKRAIETTDVTRSFGWDSSEAWQOHDVQELCRMVFDAL	285
Pavo_cristatus	PVTSIPYQLQRLFVLLQTSKKRAIETTDVTRSFGWDSSEAWQOHDVQELCRMVFDAL	285
Gallus_gallus	PVTSIPYQLQRLFVLLQTSKKRAIETTDVTRSFGWDSSEAWQOHDVQELCRMVFDAL	292
Chelonia_mydas	AVMSIPYQLQRLFVLLQTSKKRAIETTDVTRSFGWDSSEAWQOHDVQELCRMVFDAL	286
Mus_musculus	PVTSIPYQLQRLFVLLQTSKKRAIETTDVTRSFGWDSSEAWQOHDVQELCRMVFDAL	267
Rattus_norvegicus	PVTSIPYQLQRLFVLLQTSKKRAIETTDVTRSFGWDSSEAWQOHDVQELCRMVFDAL	287
Pan_troglodytes	PVTSIPYQLQRLFVLLQTSKKRAIETTDVTRSFGWDSSEAWQOHDVQELCRMVFDAL	287
Macaca_mulatta	PVTSIPYQLQRLFVLLQTSKKRAIETTDVTRSFGWDSSEAWQOHDVQELCRMVFDAL	287
Homo_sapiens	PVTSIPYQLQRLFVLLQTSKKRAIETTDVTRSFGWDSSEAWQOHDVQELCRMVFDAL	267
Callithrix_jacchus	PVTSIPYQLQRLFVLLQTSKKRAIETTDVTRSFGWDSSEAWQOHDVQELCRMVFDAL	287
Bos_taurus	PVTSIPYQLQRLFVLLQTSKKRAIETTDVTRSFGWDSSEAWQOHDVQELCRMVFDAL	287
Equus_caballus	PVTSIPYQLQRLFVLLQTSKKRAIETTDVTRSFGWDSSEAWQOHDVQELCRMVFDAL	287
Canis_lupus_familiaris	PVTSIPYQLQRLFVLLQTSKKRAIETTDVTRSFGWDSSEAWQOHDVQELCRMVFDAL	287
Rhinatrema_bivittatum	PVTSIPYQLQRLFVLLQTSKKRAIETTDVTRSFGWDSSEAWQOHDVQELCRMVFDAL	292
Xenopus_tropicalis	PVSSIPYQLQRLFVLLQTSKKRAIETTDVTRSFGWDSSEAWQOHDVQELCRMVFDAL	293
250.....260.....270.....280.....290.....300	

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Pavo_muticus	WKQTEQADLINQLYQGKCLKDYVRCLECGYEGWRIDTYLDIPLVIRPYGSNQAFASVEEAL	345
Pavo_cristatus	WKQTEQADLINQLYQGKCLKDYVRCLECGYEGWRIDTYLDIPLVIRPYGSNQAFASVEEAL	345
Gallus_gallus	WKQTEQADLINQLYQGKCLKDYVRCLECGYEGWRIDTYLDIPLVIRPYGSNQAFASVEEAL	352
Chelonia_mydas	WKQTEQADLINQLYQGKCLKDYVRCLECGYEGWRIDTYLDIPLVIRPYGSNQAFASVEEAL	346
Mus_musculus	WKQTEQADLINELYQGKCLKDYVRCLECGYEGWRIDTYLDIPLVIRPYGSSQAFASVEEAL	327
Rattus_norvegicus	WKQTEQADLINELYQGKCLKDYVRCLECGYEGWRIDTYLDIPLVIRPYGSSQAFASVEEAL	347
Pan_troglodytes	WKQTEQADLINELYQGKCLKDYVRCLECGYEGWRIDTYLDIPLVIRPYGSSQAFASVEEAL	347
Macaca_mulatta	WKQTEQADLINELYQGKCLKDYVRCLECGYEGWRIDTYLDIPLVIRPYGSSQAFASVEEAL	347
Homo_sapiens	WKQTEQADLINELYQGKCLKDYVRCLECGYEGWRIDTYLDIPLVIRPYGSSQAFASVEEAL	327
Callithrix_jacchus	WKQTEQADLINELYQGKCLKDYVRCLECGYEGWRIDTYLDIPLVIRPYGSSQAFASVEEAL	347
Bos_taurus	WKQTEQADLINELYQGKCLKDYVRCLECGYEGWRIDTYLDIPLVIRPYGSSQAFASVEEAL	347
Equus_caballus	WKQTEQADLINELYQGKCLKDYVRCLECGYEGWRIDTYLDIPLVIRPYGSSQAFASVEEAL	347
Canis_lupus_familiaris	WKQTEQADLINELYQGKCLKDYVRCLECGYEGWRIDTYLDIPLVIRPYGSSQAFASVEEAL	347
Rhinatrema_bivittatum	WKQTEQADLINQLYQGKCLKDYVRCLECGYESWRIDTYLDIPLVIRPYGSSQAFASVEEAL	352
Xenopus_tropicalis	WKQTEQADLINQLYQGKCLKDYVRCLECGYESWRIDTYLDIPLVIRPFGSNTAFGSMEAL	353
310.....320.....330.....340.....350.....360	

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Pavo_muticus	HAFTIQPEILDGPNQYFCERCKKKCDARKGLRFLHFPYLLTLQLKRFDFDYTTMHRIKLND	405
Pavo_cristatus	HAFTIQPEILDGPNQYFCERCKKKCDARKGLRFLHFPYLLTLQLKRFDFDYTTMHRIKLND	405
Gallus_gallus	HAFTIQPEILDGPNQYFCERCKKKCDARKGLRFLHFPYLLTLQLKRFDFDYTTMHRIKLND	412
Chelonia_mydas	HAFTIQPEILDGPNQYFCERCKKKCDARKGLRFLHFPYLLTLQLKRFDFDYTTMHRIKLND	406
Mus_musculus	HAFTIQPEILDGPNQYFCERCKKKCDARKGLRFLHFPYLLTLQLKRFDFDYTTMHRIKLND	387
Rattus_norvegicus	HAFTIQPEILDGPNQYFCERCKKKCDARKGLRFLHFPYLLTLQLKRFDFDYTTMHRIKLND	407
Pan_troglodytes	HAFTIQPEILDGPNQYFCERCKKKCDARKGLRFLHFPYLLTLQLKRFDFDYTTMHRIKLND	407
Macaca_mulatta	HAFTIQPEILDGPNQYFCERCKKKCDARKGLRFLHFPYLLTLQLKRFDFDYTTMHRIKLND	407
Homo_sapiens	HAFTIQPEILDGPNQYFCERCKKKCDARKGLRFLHFPYLLTLQLKRFDFDYTTMHRIKLND	387
Callithrix_jacchus	HAFTIQPEILDGPNQYFCERCKKKCDARKGLRFLHFPYLLTLQLKRFDFDYTTMHRIKLND	407
Bos_taurus	HAFTIQPEILDGPNQYFCERCKKKCDARKGLRFLHFPYLLTLQLKRFDFDYTTMHRIKLND	407
Equus_caballus	HAFTIQPEILDGPNQYFCERCKKKCDARKGLRFLHFPYLLTLQLKRFDFDYTTMHRIKLND	407
Canis_lupus_familiaris	HAFTIQPEILDGPNQYFCERCKKKCDARKGLRFLHFPYLLTLQLKRFDFDYTTMHRIKLND	407
Rhinatrema_bivittatum	HAFTIQPEILDGPNQYFCERCKKKCDARKGLRFLHFPYLLTLQLKRFDFDYTTMHRIKLND	412
Xenopus_tropicalis	QAFIQPEILDGPNQYFCERCKRKCDARKGLKFLHFPYLLTLQLKRFDFDYTTMHRIKLND	413
370.....380.....390.....400.....410.....420	

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Pavo_muticus	RMTFPEELDMSIFIDVEDEKSPQTESCTDSGAENEG---	SCHSDQ-MSNDFSNDGGVDEG	461
Pavo_cristatus	RMTFPEELDMSIFIDVEDEKSPQTESCTDSGAENEG---	SCHSDQ-MSNDFSNDGGVDEG	461
Gallus_gallus	RMTFPEELDMSIFIDVEDEKSPQTESCTDSGAENEG---	SCHSDQ-MSNDFSNDGGVDEG	468
Chelonia_mydas	RMTFPEELDMSTFIDVEDEKSPQTESCTDSGAENEG---	SCHSDQ-MSNDFSNDGGVDEG	462
Mus_musculus	RMSFPEELDMSTFIDIEDEKSPQTESCTDSGAENEG---	SCHSDQ-MSNDFSNTDDAVDEG	443
Rattus_norvegicus	RMSFPEELDMSTFIDIEDEKSPQTESCTDSGAENEG---	SCHSDQ-MSNDFSNTDDAVDEG	463
Pan_troglodytes	RMTFPEELDMSTFIDVEDEKSPQTESCTDSGAENEG---	SCHSDQ-MSNDFSNDGGVDEG	463
Macaca_mulatta	RMTFPEELDMSTFIDVEDEKSPQTESCTDSGAENEG---	SCHSDQ-MSNDFSNDGGVDEG	463
Homo_sapiens	RMTFPEELDMSTFIDVEDEKSPQTESCTDSGAENEG---	SCHSDQ-MSNDFSNDGGVDEG	443
Callithrix_jacchus	RMTFPEELDMSTFIDVEDEKSPQTESCTDSGAENEG---	SCHSDQ-MSNDFSNDGGVDEG	463
Bos_taurus	RMTFPEELDMSTFIDVEDEKSPQTESCTDSGAENEG---	SCHSDQ-MSNDFSNDGGVDEG	463
Equus_caballus	RMTFPEELDMSTFIDVEDEKSPQTESCTDSGAENEG---	SCHSDQ-MSNDFSNDGGVDEG	463
Canis_lupus_familiaris	RMTFPEELDMSTFIDVEDEESTQTEIRIRSGSKRKXRAIVVHSEHRMSNDFSNDGGVDEG	467	
Rhinatrema_bivittatum	RMTFPEELDMSPFIDIEDEKSPQTESCTDSGAENEG---	SCHSDQ-MSNDFSNDGGVDEG	468
Xenopus_tropicalis	RMTFPEELDMSPFIDVEDEKSPQTESCTDSGAENEG---	SCHSDQ-MSNDFSNTDDAVDEG	469
430.....440.....450.....460.....470.....480		

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Pavo_muticus	ICLESNSAAERIAKVGSEK-----NSLLYELFVSMVHSGSAAGGH	501
Pavo_cristatus	ICLESNSAAERIAKVGSEK-----NSLLYELFVSMVHSGSAAGGH	501
Gallus_gallus	ICLESNSAAERIAKVGSEK-----NSLLYELFVSMVHSGSAAGGH	508
Chelonia_mydas	ICLESSSGAERISKVGTEK-----NSLLYELFVSMVHSGSAAGGH	502
Mus_musculus	ICLESSSGSEKISKPGLEKVEAETDORKDPIQFOLGEPNSLMYELFVSMVHSGSAAGGH	503
Rattus_norvegicus	ICLESSTGSEKISKPGLEKVEAETDORKDSIQFOLGEPNSLMYELFVSMVHSGSAAGGH	523
Pan_troglodytes	ICLETNSGTEKISKSGLEK-----NSLIYELFVSMVHSGSAAGGH	503
Macaca_mulatta	ICLETNSGTEKISKSGLEK-----NSLIYELFVSMVHSGSAAGGH	503
Homo_sapiens	ICLETNSGTEKISKSGLEK-----NSLIYELFVSMVHSGSAAGGH	483
Callithrix_jacchus	ICLETNSGTEKISKSGLEK-----NSLIYELFVSMVHSGSAAGGH	503
Bos_taurus	ICLENNSGTEKIPKPGLEK-----NSLIYELFVSMVHSGSAAGGH	503
Equus_caballus	ICLENNSGTEKISKPGLEK-----NSLIYELFVSMVHSGSAAGGH	503
Canis_lupus_familiaris	ICLESNSGTEKISKPGLEK-----NSLIYELFVSMVHSGSAAGGH	507
Rhinatrema_bivittatum	ICLESSNAERILKSGIEK-----NSPYELFVSMVHSGSAAGGH	508
Xenopus_tropicalis	ICLETNSNIEKLNKSVSEK-----NSLYELFVSMVHSGSAAGGH	508
490.....500.....510.....520.....530.....540	

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***** * *****:*****:*. *****:***
Pavo_muticus      YYACIKSFSDQWYSFNDQHVSKITQEDIKKTYGGSSGSRGYSSAFASSTNAYMLIYRL 561
Pavo_cristatus    YYACIKSFSDQWYSFNDQHVSKITQEDIKKTYGGSSGSRGYSSAFASSTNAYMLIYRL 561
Gallus_gallus     YYACIKSFSDQWYSFNDQHVSKITQEDIKKTYGGSSGSRGYSSAFASSTNAYMLIYRL 568
Chelonia_mydas    YYACIKSFNDEQWYSFNDQHVSKITQEDIKKTYGGSSGSRGYSSAFASSTNAYMLIYRL 562
Mus_musculus      YYACIKSFSDQWYSFNDQHVSRTQEDIKKTHGGSSGSRGYSSAFASSTNAYMLIYRL 563
Rattus_norvegicus YYACIKSFSDQWYSFNDQHVSRTQEDIKKTHGGSSGSRGYSSAFASSTNAYMLIYRL 583
Pan_troglodytes   YYACIKSFSDQWYSFNDQHVSRTQEDIKKTHGGSSGSRGYSSAFASSTNAYMLIYRL 563
Macaca_mulatta    YYACIKSFSDQWYSFNDQHVSRTQEDIKKTHGGSSGSRGYSSAFASSTNAYMLIYRL 563
Homo_sapiens      YYACIKSFSDQWYSFNDQHVSRTQEDIKKTHGGSSGSRGYSSAFASSTNAYMLIYRL 543
Callithrix_jacchus YYACIKSFSDQWYSFNDQHVSRTQEDIKKTHGGSSGSRGYSSAFASSTNAYMLIYRL 563
Bos_taurus        YYACIKSFSDQWYSFNDQHVSRTQEDIKKTHGGSSGSRGYSSAFASSTNAYMLIYRL 563
Equus_caballus    YYACIKSFSDQWYSFNDQHVSRTQEDIKKTHGGSSGSRGYSSAFASSTNAYMLIYRL 563
Canis_lupus_familiaris YYACIKSFSDQWYSFNDQHVSRTQEDIKKTHGGSSGSRGYSSAFASSTNAYMLIYRL 567
Rhinatrema_bivittatum YYACIKSFDDQWYSFNDQHVSRTQEDIKKTYGGSSGSRGYSSAFASSTNAYMLIYRL 568
Xenopus_tropicalis YYACIKSFADQWYSFNDQHVSRTQEDIKKTYGGSTGNRGYSSAFASSTNAYMLMYRL 568
.....550.....560.....570.....580.....590.....600
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*:::**** * :::*** **::* *****:*****.* *:****:*.:::***
Pavo_muticus      KDPARNAKFLESHEYPDHIKQLVKERELEEQEKREIERNTCKIKLFCMHPTKQIMME 621
Pavo_cristatus    KDPARNAKFLESHEYPDHIKQLVKERELEEQEKREIERNTCKIKLFCMHPTKQIMME 621
Gallus_gallus     KDPARNAKFLESHEYPDHIKQLVKERELEEQEKREIERNTCKIKLFCMHPTKQIMME 628
Chelonia_mydas    KDPTRNAKFLEVNEYPEHIKQLVKEKELEEQEKREIERNTCKIKLFCMHPTKQIMME 622
Mus_musculus      KDPTRNAKFLEVDEYPEHIKQLVKERELEEQEKREIERNTCKIKLFCMHPTKQIMME 623
Rattus_norvegicus KDPTRNAKFLEVDEYPEHIKQLVKERELEEQEKREIERNTCKIKLFCMHPTKQIMME 643
Pan_troglodytes   KDPARNAKFLEVDEYPEHIKQLVKERELEEQEKREIERNTCKIKLFCMHPTKQIMME 623
Macaca_mulatta    KDPARNAKFLEVDEYPEHIKQLVKERELEEQEKREIERNTCKIKLFCMHPTKQIMME 623
Homo_sapiens      KDPARNAKFLEVDEYPEHIKQLVKERELEEQEKREIERNTCKIKLFCMHPTKQIMME 603
Callithrix_jacchus KDPARNAKFLEVDEYPEHIKQLVKERELEEQEKREIERNTCKIKLFCMHPTKQIMME 623
Bos_taurus        KDPARNAKFLEVDEYPEHIKQLVKERELEEQEKREIERNTCKIKLFCMHPTKQIMME 623
Equus_caballus    KDPARNAKFLEVDEYPEHIKQLVKERELEEQEKREIERNTCKIKLFCMHPTKQIMME 623
Canis_lupus_familiaris KDPARNAKFLEVDEYPEHIKQLVKERELEEQEKREIERNTCKIKLFCMHPTKQIMME 627
Rhinatrema_bivittatum KNPARNAKFLEVSDYPDHIKQLVKEKELEEQEKREIERNTCKIKLFCMHPTKQIMME 628
Xenopus_tropicalis KNPARNAKFLEAIEFPEHIKQLVKEKELEEQEKREIERNTCKIKLFCMHPTKQIMME 628
.....610.....620.....630.....640.....650.....660
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Pavo_muticus      NKLEVHKDRTLKEAVGIAYKLMDLEEAVPLDCCRLVKYDEFHDYLSYEGEE-DTPMGL 680
Pavo_cristatus    NKLEVHKDRTLKEAVGIAYKLMDLEEAVPLDCCRLVKYDEFHDYLSYEGEE-DTPMGL 680
Gallus_gallus     NKLEVHKDRTLKEAVGIAYKLMDLEEAVPLDCCRLVKYDEFHDYLSYEGEE-DTPMGL 687
Chelonia_mydas    NKLEVHKDRTLKEAVEIAYKIMDIEEAVPLDCCRLVKYDEFHDYLSYEGEE-DTPMGL 682
Mus_musculus      NKLEVHKDRTLKEAVEMAYKMDLEDVPLDCCRLVKYDEFHDYLSYEGEE-DTPMGL 682
Rattus_norvegicus NKLEVHKDRTLKEAVEMAYKMDLEDVPLDCCRLVKYDEFHDYLSYEGEE-DTPMGL 702
Pan_troglodytes   NKLEVHKDRTLKEAVEMAYKMDLEDVPLDCCRLVKYDEFHDYLSYEGEE-DTPMGL 682
Macaca_mulatta    NKLEVHKDRTLKEAVEMAYKMDLEDVPLDCCRLVKYDEFHDYLSYEGEE-DTPMGL 682
Homo_sapiens      NKLEVHKDRTLKEAVEMAYKMDLEDVPLDCCRLVKYDEFHDYLSYEGEE-DTPMGL 662
Callithrix_jacchus NKLEVHKDRTLKEAVEMAYKMDLEDVPLDCCRLVKYDEFHDYLSYEGEE-DTPMGL 682
Bos_taurus        NKLEVHKDRTLKEAVEMAYKMDLEDVPLDCCRLVKYDEFHDYLSYEGEE-DTPMGL 682
Equus_caballus    NKLEVHKDRTLKEAVEMAYKMDLEDVPLDCCRLVKYDEFHDYLSYEGEE-DTPMGL 682
Canis_lupus_familiaris NKLEVHKDRTLKEAVEMAYKMDLEDVPLDCCRLVKYDEFHDYLSYEGEE-DTPMGL 686
Rhinatrema_bivittatum NKLEVHKDKTMKEAVEIAYKIMDIEEAVPLDCCRLVKYDEFHDYLSYEGEE-DTPMGL 687
Xenopus_tropicalis SKLEVHKDKTMKEAVEIAHKLMDLEGVISLDCCLRVKYDEFHDYLSYEGEE-DRTMGL 687
.....670.....680.....690.....700.....710.....720
```


CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/USP17a.psa Tue Feb 1 14:51:10 2022

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```
*****:*****:***:*.*****:*****:***:..*****.*:
LLGGVKSTYMFDDLLETRRPDQIFQCYKPGEVMVKVHVVDLKTESVAPPISVRAYLNQTV 740
LLGGVKSTYMFDDLLETRRPDQIFQCYKPGEVMVKVHVVDLKTESVAPPISVRAYLNQTV 740
LLGGVKSTYMFDDLLETRRPDQIFQCYKPGEVMVKVHVVDLKTESVAPPISVRAYLNQTV 747
LLGGVKSTYMFDDLLETRRPDQIFQCYKPGEVMVKVHVVDLKTESVAPSISVRAYLNQTV 742
LLGGVKSTYMFDDLLETRKPDQIFQSYKPGEVMVKVHVVDLKAETVAAPVTVRAYLNQTV 742
LLGGVKSTYMFDDLLETRKPDQIFQSYKPGEVMVKVHVVDLKAETVAAPVTVRAYLNQTV 762
LLGGVKSTYMFDDLLETRKPDQVFQSYKPGEVMVKVHVVDLKAESVAAPITVRAYLNQTV 742
LLGGVKSTYMFDDLLETRKPDQVFQSYKPGEVMVKVHVVDLKAESVAAPITVRAYLNQTV 742
LLGGVKSTYMFDDLLETRKPDQVFQSYKPGEVMVKVHVVDLKAESVAAPITVRAYLNQTV 722
LLGGVKSTYMFDDLLETRKPDQVFQSYKPGEVMVKVHVVDLKAESVAAPITVRAYLNQTV 742
LLGGVKSTYMFDDLLETRRPDQVFQSYKPGEVMVKVHVVDLKAESVAAPITVRAYLNQTV 742
LLGGVKSTYMFDDLLETRKPDQVFQSYKPGEVMVKVHVVDLKAESVAAPITVRAYLNQTV 742
LLGGVKSTYMFDDLLETRKPDQVFQSYKPGEVMVKVHVVDLKAESVAAPVTVRAYLNQTV 746
LLGGVKSSYMFDDLLETRRPDQVFQSYKPGEVMVRVHVVDLKSEISAPHNVRAYLNQTI 747
LLGGVKSSYMFDDLLETRKPDQVFQSYKPGEVMVKVYVVDLKTTETVAPPVSVRAYLSQTI 747
.....730.....740.....750.....760.....770.....780
```

```

***.*:**      *  .:.*:*****. .**** *****.*:***.:**
SEFKQLISK-ATHLPAETMRVVLERCYNDLRLLNVPSKTLKAEGFFRSNKVFIESSESLE 799
SEFKQLISK-ATHLPAETMRVVLERCYNDLRLLNVPSKTLKAEGFFRSNKVFIESSESLE 799
SEFKQLISK-ATHLPAETMRVVLERCYNDLRLLTVPSKTLKAEGFFRSNKVFIESSESLE 806
TEFKELISK-AVRLPAETMRVVLERCYNDLRLLSVGNKTLKAEGFFRSNKVFIESSESLE 801
TEFKQLISK-ATHLPADSMRIVLERCYNDLRLLSMPSTLKAEGFFRSNKVFIESSETVD 801
LEFKQLISK-ATHLPAEPMRIVLERCYNDLRLLSMPSTLKAEGFFRSNKVFIESSETVD 821
TEFKQLISK-AIHLPAETMRIVLERCYNDLRLLSVSSTLKAEGFFRSNKVFIESSETLD 801
TEFKQLISK-AIHLPAETMRIVLERCYNDLRLLSVSSTLKAEGFFRSNKVFIESSETLD 801
TEFKQLISK-AIHLPAETMRIVLERCYNDLRLLSVSSTLKAEGFFRSNKVFIESSETLD 781
TEFKQLISK-AIHLPAETMRIVLERCYNDLRLLSVPSTLKAEGFFRSNKVFIESSETLD 801
TEFKQLISK-AVHLPAETMRVVLERCYNDLRLLTVPSKTLKNEGFFRSNKVFIESSETLD 801
TEFKQLISKTVVHLPAETMRIVLERCYNDLRLLTAPSTLKAEGFFRSNKVFIESSETLD 802
TEFKQLISK-AIHLPAETMRIVLERCYNDLRLLTVPSKTLKAEGFFRSNKVFIESSETLD 805
MEFKQLVSK-AIDLPAETMRIVLERCYNDLRLLSVPNKTTLKAEGFFRSNKVFIESSDSLD 806
IEFKQLISK-SVDLLPDTMRVVLERCYNDLRLLNVANKTLKAEGFFRSNKVFIESSDSLD 806
.....790.....800.....810.....820.....830.....840

```

```

: . :.: :*****: * :*: : * : * . * . : * * . *
RHVAYTDSLHWKLLDRHANTIRLYVSLPEQSPGSQFRRSVYQKPSGDLGSLDEACERVKG 859
RHVAYTDSLHWKLLDRHANTIRLYVSLPEQSPGSQFRRSVYQKPSGDLGSLDEACERVKG 859
RHVAYTDSLHWKLLDRHANTIRLYVSLPEQSPGSQFRRSIYQKPSGDLGNLDEACERVKG 866
ROMAYTDSLHWKLLDRHANTIRLYVSLPEHSPGSQFKRTVNGKASGDSGNLDEACERVKG 861
HQAFTDSLHWKLLDRHANTIRLFVLLPEQSPGSYSKRTAYQKAGGDSGNVDDDCERVKG 861
HQAFTDSLHWKLLDRHANTIRLFVLLPEQSPGSYSKRTAYQKAGGDSGNVDDDCERAKG 881
YQMAFAESHLWKLLDRHANTIRLFVLLPEQSPGSYSKRTAYQKAGGDSGNVDDDCERVKG 861
YQMAFAESHLWKLLDRHANTIRLFVLLPEQSPGSYSKRTAYQKAGGDSGNVDDDCERVKG 861
YQMAFADSHLWKLLDRHANTIRLFVLLPEQSPVSYSKRTAYQKAGGDSGNVDDDCERVKG 841
YQMAFADSHLWKLLDRHANTIRLFVLLPEQSPGSYSKRTAYQKAGGDSGNVDDDCERVKG 861
YQMAFTDSLHWKLLDRHANTIRLFVLLPEQSPGSFSKRTAYQKAGGDSGNVGGDCERVKG 861
YQMAFTDSLHWKLLDRHANTIRLFVLLPEQSPGSYSKRTAYQKAGGDSGNVDDDCERVKG 862
YQMAFTDSLHWKLLDRHANTIRLFVLLPEQSPGSYSKRTACQKAGGDSGNVDDDCERVKG 865
YQMAFTDSLHWKLLDRHANTIRLYVSLPEQSPGPQYTRTVCHKAGGDSHLEEGCERVKA 866
YQLVFTDSLHWKLLDRHANTIRLYVSLPEHTP--QTARSVGPKGGGDSNLSEDYCSRVKG 864
.....850.....860.....870.....880.....890.....900

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/USP17a.psa Tue Feb 1 14:51:10 2022

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	..**::*****::*:******::*****::**..*	
Pavo_muticus	PAGDMKSV E A I L E E S T E K L K S L S L Q Q Q Q Q E G D N G D S S K S T E A S D F E N I E S P S N E I D S S A S	919
Pavo_cristatus	PAGDMKSV E A I L E E S T E K L K S L S L Q Q Q Q Q E G D N G D S S K S T E A S D F E N I E S P S N E I D S S A S	919
Gallus_gallus	PAGNMKSV E A I L E E S T E K L K S L S L Q Q Q Q Q E G D N G D S S K S T E A S D F E N I E S P S N E I D S S A S	926
Chelonia_mydas	PLGNMISV E A I L E E S T E K L K S L S L Q Q E Q - E G D N G D S S K S T E A S D F E N I E S P L N E V D S L A S	920
Mus_musculus	PAGNLKSV D A I L E E S T E K L K S L S L Q Q Q Q Q D G D N G D S S K S T E T S D F E N I E S P L N E R G S S T S	921
Rattus_norvegicus	PAGSLKSV D A I L E E S T E K L K S L S L Q Q Q Q - D G D N G D S S K S T E T S D F E N I E S P L N E R G S S T S	940
Pan_troglodytes	PVGSLKSV E A I L E E S T E K L K S L S L Q Q Q Q - D G D N G D S S K S T E T S D F E N I E S P L N E R D S S A S	920
Macaca_mulatta	PVGSLKSV E A I L E E S T E K L K S L S L Q Q Q Q - D G D N G D S S K S T E T S D F E N I E S P L N E R D S S A S	920
Homo_sapiens	PVGSLKSV E A I L E E S T E K L K S L S L Q Q Q Q - D G D N G D S S K S T E T S D F E N I E S P L N E R D S S A S	900
Callithrix_jacchus	PVGSLKSV E A I L E E S T E K L K S L S L Q Q Q Q - D G D N G D S S K S T E T S D F E N I E S P L N E R D S S A S	920
Bos_taurus	PAGSLKSV E A I L E E S T E K L K S L S L Q Q Q Q - E G D N G D S S K S T E T S D F E N I E S P L N E R G S S A S	920
Equus_caballus	PVGSLKSV E A I L E E S T E K L K S L S L Q Q Q Q - D G E N G D S S K S T E T S D F E N I E S P L N E R D S S A S	921
Canis_lupus_familiaris	PVGSLKSV E A I L E E S T E K L K S L S L Q Q Q Q - D G D N G D S S K S T E T S D F E N I E S P L N E R D S S T S	924
Rhinatrema_bivittatum	PVAGNKSV E A I L E E S T E K L K S L S L Q Q Q Q - E G G N G D S S K S P D A S D F E N I D S P G N E V E C A A S	925
Xenopus_tropicalis	---NVKSV D A I L E E S T E K L K S L S L Q Q H Q - D G G N G D S S K S T E G S D F E N I D S P L N E A D S - G S	919
910.....920.....930.....940.....950.....960	

	..**:**:: :**** : ..*****.*.* :	
Pavo_muticus	VENRELENQIQISDPEN-LQSEERSDSDVNNDRSTSSVSDILSSSHSSDTLCNVDNAPI	978
Pavo_cristatus	VENRELENQIQISDPEN-LQSEERSDSDVNNDRSTSSVSDILSSSHSSDTLCNVDNAPI	978
Gallus_gallus	VENRELENQIQISDPEN-LQSEERSDSDVNNDRSTSSVSDILSSSHSSDTLCNVDNAPI	985
Chelonia_mydas	AENRELENQIQISDPEN-FQSEERSDSDVNNDRSTSSVSDILSSSHSSDTLCNVDNAPI	979
Mus_musculus	VDNRELEQHIQTSDPEN-FQSEERSDSDVNNDRSTSSVSDILSSSHSSDTLCNADSAQI	980
Rattus_norvegicus	VDNRELEQHIQTSDPEN-FQSEERSDSDVNNDRSTSSVSDILSSSHSSDTLCNADSAQI	999
Pan_troglodytes	VDNRELEQHIQTSDPEN-FQSEERSDSDVNNDRSTSSVSDILSSSHSSDTLCNADNAQI	979
Macaca_mulatta	VDNRELEQHIQTSDPEN-FQSEERSDSDVNNDRSTSSVSDILSSSHSSDTLCNADNAQI	979
Homo_sapiens	VDNRELEQHIQTSDPEN-FQSEERSDSDVNNDRSTSSVSDILSSSHSSDTLCNADNAQI	959
Callithrix_jacchus	VDNRELEQHIQTSDPEN-FQSEERSDSDVNNDRSTSSVSDILSSSHSSDTLCNADNAQI	979
Bos_taurus	VDNRELEQHMQTSDPEN-FQSEERSDSDVNNDRSTSSVSDILSSSHSSDTLCNADNAQI	979
Equus_caballus	VENRDLEQHIQTSDPEN-FQSEERSDSDVNNDRSTSSVSDILSSSHSSDTLCNADNAQI	980
Canis_lupus_familiaris	VDNRELEQHIQTSDPEN-FQSEERSDSDVNNDRSTSSVSDILSSSHSSDTLCNADNAQI	983
Rhinatrema_bivittatum	VDNRELENRIPTSDPEN-FVSEERSDSDVNNDRSTSSVSDILSSSHSSDTLCNADSAHV	984
Xenopus_tropicalis	ADNRELENRIILPADPENNFQSEERSDSDVNNDRSTSSVSDILSSSHSSDTLCNADSAPI	979
970.....980.....990.....1000.....1010.....1020	

	*****:.*:*****.*.**:*****:.*:	
Pavo_muticus	PLANGLD SHS ITSSRRSKANQ GKK ETWD TAE EDSGTDSEYDES GKSR GETQYMYFKSEPY	1038
Pavo_cristatus	PLANGLD SHS ITSSRRSKANQ GKK ETWD TAE EDSGTDSEYDES GKSR GETQYMYFKSEPY	1038
Gallus_gallus	PLANGLD SHS ITSSRRSKANQ GKK ETWD TAE EDSGTDSEYDES GKSR GETQYMYFKSEPY	1045
Chelonia_mydas	PLANGLD SHS ITSSRRSKANEG GKK ETWD TAE EDSGTDSEYDES GKSR GEAQYMYFKAEPY	1039
Mus_musculus	PLANGLD SHS ITSSRRITKANEG GKK ETWD TAE EDSGTDSEYDES GKSR GDQYMYFKADPY	1040
Rattus_norvegicus	PLANGLD SHS ITSSRRITKANEG GKK ETWD TAE EDSGTDSEYDES GKSR GEQYMYFKADPY	1059
Pan_troglodytes	PLANGLD SHS ITSSRRITKANEG GKK ETWD TAE EDSGTDSEYDES GKSR GEQYMYFKAEPY	1039
Macaca_mulatta	PLANGLD SHS ITSSRRITKANEG GKK ETWD TAE EDSGTDSEYDES GKSR GEQYMYFKAEPY	1039
Homo_sapiens	PLANGLD SHS ITSSRRITKANEG GKK ETWD TAE EDSGTDSEYDES GKSR GEQYMYFKAEPY	1019
Callithrix_jacchus	PLANGLD SHS ITSSRRITKANEG GKK ETWD TAE EDSGTDSEYDES GKSR GEQYMYFKAEPY	1039
Bos_taurus	PLANGLD SHS ITSSRRITKANEG GKK ETWD TAE EDSGTDSEYDES GKSR GEIQYMYFKAEPY	1039
Equus_caballus	PLANGLD SHS ITSSRRITKANEG GKK ETWD TAE EDSGTDSEYDES GKSR GETQYMYFKAEPY	1040
Canis_lupus_familiaris	PLANGLD SHS ITSSRRITKANEG GKK ETWD TAE EDSGTDSEYDES GKSR GEIQYMYFKAEPY	1043
Rhinatrema_bivittatum	PLANGLD SHS ITSSRRSKANEG GKK ETWD TAE EDSGTDSEYDES GKSR GETQYMYFKAEPY	1044
Xenopus_tropicalis	PLANGLD SHS ITSSRRSKAND GKK ETWD TAE EDSGTDSEYDES GKSR GEAQYMYFKAEPH	1039
1030.....1040.....1050.....1060.....1070.....1080	

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/USP174.pps Tue Feb 1 14:51:10 2022

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      .      *** * :;* *****:****:*.**** **:*****:*****:****
Pavo_muticus      AADEGSGEGQKWLMMVHVDKRIITLSAFKQOLEPFVGVPSHFKVFRVYASNQEFESVRLNE 1098
Pavo_cristatus    AADEGSGEGQKWLMMVHVDKRIITLSAFKQOLEPFVGVPSHFKVFRVYASNQEFESVRLNE 1098
Gallus_gallus     TADEGSGEGQKWLMMVHVDKRIITLSAFKQOLEPFVGVPSHFKVFRVYASNQEFESVRLNE 1105
Chelonia_mydas    AADEGSGEGQKWLMMVHVDKRIITLSAFKQOLEPFVGVLSHFKVFRVYASNQEFESVRLNE 1099
Mus_musculus      TADEGSGEGHKWLMVHVDKRIITLAAFKQHLEPFVGVLSHFKVFRVYTSNQEFETVRLNE 1100
Rattus_norvegicus TADEGSGEGHKWLMVHVDKRIITLAAFKQHLEPFVGVLSHFKVFRVYTSNQEFETVRLNE 1119
Pan_troglodytes   AADEGSGEGYKWLMMVHVDKRIITLAAFKQHLEPFVGVLSHFKVFRVYASNQEFESVRLNE 1099
Macaca_mulatta    AADEGSGEGHKWLMVHVDKRIITLAAFKQHLEPFVGVLSHFKVFRVYASNQEFESVRLNE 1099
Homo_sapiens      AADEGSGEGHKWLMVHVDKRIITLAAFKQHLEPFVGVLSHFKVFRVYASNQEFESVRLNE 1079
Callithrix_jacchus AADEGSGEGHKWMMVHVDKRIITLAAFKQHLEPFVGVLSHFKVFRVYASNQEFESVRLNE 1099
Bos_taurus        AADEGSGEGHKWLMVHVDKRIITLATFKQHLEPFVGVLSHFKVFRVYASNQEFESVRLNE 1099
Equus_caballus    AADAGSGEGHKWLMVHVDKRIITLAAFKQHLEPFVGVLSHFKVFRVYASNQEFESVRLNE 1100
Canis_lupus_familiaris AADEGSGEGHKWLMVHVDKRIITLAAFKQHLEPFVGVLSHFKVFRVYASNQEFESVRLNE 1103
Rhinatrema_bivittatum GAATGSGEGQKWLMMVHVDKRIITLAVFKQOLEPFVGVLSQFKVFRVYASNQEFESIRLNE 1104
Xenopus_tropicalis AGEGLGEGNKCLLSVDKRIITLAAFKQOLESFVGVSSQFKVFRVYASNQEFESVRLNE 1099
.....1090.....1100.....1110.....1120.....1130.....1140

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*****:***:*****:*****:
Pavo_muticus      TLSSFSDDNKITIRLGRALKKGEYRVKVYQLLVNEPEPCKFLLDAVFAKGMTVROSKEEL 1158
Pavo_cristatus    TLSSFSDDNKITIRLGRALKKGEYRVKVYQLLVNEPEPCKFLLDAVFAKGMTVROSKEEL 1158
Gallus_gallus     TLSSFSDDNKITIRLGRALKKGEYRVKVYQLLVNEPEPCKFLLDAVFAKGMTVROSKEEL 1165
Chelonia_mydas    TLSSFSDDNKITIRLGRALKKGEYRVKVYQLLVNEPEPCKFLLDAVFAKGMTVROSKEEL 1159
Mus_musculus      TLSSFSDDNKITIRLGRALKKGEYRVKVCQLLVNEPEPCKFLLDAVFAKGMTVROSKEEL 1160
Rattus_norvegicus TLSSFSDDNKITIRLGRALKKGEYRVKVCQLLVNEPEPCKFLLDAVFAKGMTVROSKEEL 1179
Pan_troglodytes   TLSSFSDDNKITIRLGRALKKGEYRVKVYQLLVNEPEPCKFLLDAVFAKGMTVROSKEEL 1159
Macaca_mulatta    TLSSFSDDNKITIRLGRALKKGEYRVKVYQLLVNEPEPCKFLLDAVFAKGMTVROSKEEL 1159
Homo_sapiens      TLSSFSDDNKITIRLGRALKKGEYRVKVYQLLVNEPEPCKFLLDAVFAKGMTVROSKEEL 1139
Callithrix_jacchus TLSSFSDDNKITIRLGRALKKGEYRVKVYQLLVNEPEPCKFLLDAVFAKGMTVROSKEEL 1159
Bos_taurus        TLSSFSDDNKITIRLGRALKKGEYRVKVYQLLVNEPEPCKFLLDAVFAKGMTVROSKEEL 1159
Equus_caballus    TLSSFSDDNKITIRLGRALKKGEYRVKVYQLLVNEPEPCKFLLDAVFAKGMTVROSKEEL 1160
Canis_lupus_familiaris TLSSFSDDNKITIRLGRALKKGEYRVKVYQLLVNEPEPCKFLLDAVFAKGMTVROSKEEL 1163
Rhinatrema_bivittatum TLSSFSDDNKITIRLGRALKKGEYRVKVFOLLNEPEPCKFLLDAVFSKGMTVROSKEEL 1164
Xenopus_tropicalis TLSSFSDDNKITIRLGRALKKGEYRVKIFOLLNEPEPCKFLLDAVFSKGMTVROSKEEL 1159
.....1150.....1160.....1170.....1180.....1190.....1200

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:* **:****:* *****:***:***:***** ** ***
Pavo_muticus      LPQLREQCGLDLTIDRFRLRKKTWKNPGTVFLDYHIYEEDINISSNWEVFLEILDGIEKM 1218
Pavo_cristatus    LPQLREQCGLDLTIDRFRLRKKTWKNPGTVFLDYHIYEEDINISSNWEVFLEILDGIEKM 1218
Gallus_gallus     LPQLREQCGLDLTIDRFRLRKKTWKNPGTVFLDYHIYEEDINISSNWEVFLEILDGVEKM 1225
Chelonia_mydas    LPQLREQCGLDLTIDRFRLRKKTWKNPGTVFLDYHVEEDINISSNWEVFLEILDGAEKM 1219
Mus_musculus      IPQLREQCGLDLSIDRFRLRKKTWKNPGTVFLDYHIYEEDINISSNWEVFLEVLDGVEKM 1220
Rattus_norvegicus IPQLREQCGLDLSIDRFRLRKKTWKNPGTVFLDYHIYEEDINISSNWEVFLEVLDGVEKM 1239
Pan_troglodytes   IPQLREQCGLDLSIDRFRLRKKTWKNPGTVFLDYHIYEEDINISSNWEVFLEVLDGVEKM 1219
Macaca_mulatta    IPQLREQCGLDLSIDRFRLRKKTWKNPGTVFLDYHIYEEDINISSNWEVFLEVLDGVEKM 1219
Homo_sapiens      IPQLREQCGLDLSIDRFRLRKKTWKNPGTVFLDYHIYEEDINISSNWEVFLEVLDGVEKM 1199
Callithrix_jacchus IPQLREQCGLDLSIDRFRLRKKTWKNPGTVFLDYHIYEEDINISSNWEVFLEVLDGVEKM 1219
Bos_taurus        IPQLREQCGLDLSIDRFRLRKKTWKNPGTVFLDYHIYEEDINISSNWEVFLEVLDGVEKM 1219
Equus_caballus    IPQLREQCGLDLSIDRFRLRKKTWKNPGTVFLDYHIYEEDINISSNWEVFLEVLDGVEKM 1220
Canis_lupus_familiaris IPQLREQCGLDLSIDRFRLRKKTWKNPGTVFLDYHIYEEDINISSNWEVFLEVLDGVEKM 1223
Rhinatrema_bivittatum LPQLREQCGLDLCIDRFRLRKKTWKNPGTVFLDYHVEEDINISSNWEVFLEVLDGVEKM 1224
Xenopus_tropicalis LPLLRDQCGLDLSIDRFRLRKKTWKNPGTVFLDYHVENES-ISSNWEVFLEALDETEKM 1218
.....1210.....1220.....1230.....1240.....1250.....1260

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/USP/pep_msa Tue Feb 14:51:10 2022

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*****:::***:***:***:***:***:***:***:***:***:***:***:***:***:***:***:***:*****
Pavo_muticus      KSMSQLAVLSRRWRPSEMKLDSFQEVVLESSSVVEELKEKLSSELSGIPLENIEFAKGRGTF 1278
Pavo_cristatus    KSMSQLAVLSRRWRPSEMKLDSFQEVVLESSSVVEELKEKLSSELSGIPLENIEFAKGRGTF 1278
Gallus_gallus     KSMSQLAVLSRRWRPSEMKLDSFQEVVLESSSVVEELKEKLSSELSGIPLENIEFAKGRGTF 1285
Chelonia_mydas    KSMSQLAVLSRRWRPSEMKLDSFQEVVLESSSVDELKEKLSSELSGIPLEYIEFAKGRGTF 1279
Mus_musculus      KSMSQLAILTRRRWRPSEMKLDPFQELVLESNSVDELREKLSSELSGIPLEDIEFAKGRGTF 1280
Rattus_norvegicus KSMSQLAILTRRRWRPSEMKLDPFQELVLESNSVDELREKLSSELSGIPLEDIEFAKGRGTF 1299
Pan_troglodytes   KSMSQLAVLSRRWKPSSEMKLDPFQEVVLESSSVDELREKLSSELSGIPLEDIEFAKGRGTF 1279
Macaca_mulatta    KSMSQLAVLSRRWKPSSEMKLDPFQEVVLESSSVDELREKLSSELSGIPLEDIEFAKGRGTF 1279
Homo_sapiens      KSMSQLAVLSRRWKPSSEMKLDPFQEVVLESSSVDELREKLSSELSGIPLEDIEFAKGRGTF 1259
Callithrix_jacchus KSMSQLAVLSRRWKPSSEMKLDPFQEVVLESSSVDELREKLSSELSGIPLEDIEFAKGRGTF 1279
Bos_taurus        KSMSQLAVLSRRWRPSEMKLDPFQEVVLESSSVDELREKLSSELSGIPVEDIEFAKGRGTF 1279
Equus_caballus    KSMSQLAVLSRRWRPSEMKLDPFQEVVLESSSVDELREKLSSELSGIPLEDIEFVKGRGTF 1280
Canis_lupus_familiaris KSMSQLAVLSRRWRPSEMKLDPFQEVVLESSSVDELREKLSSELSGIPLEDIEFAKGRGTF 1283
Rhinatrema_bivittatum KSMSQLAVLSRRWRPSEMKLDPFQEVVLESSADELKEKLSSELSGIALENIEFAKGRGTF 1284
Xenopus_tropicalis KSMSQLSLFTKRWRPSELKLDPFKEIVMESNSVDELREKLSSELSGIPLEDIEFAKGRGTF 1278
.....1270.....1280.....1290.....1300.....1310.....1320

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*****:*****:***:*****:*****:***:*****:***:*****:***:***
Pavo_muticus      PCDISVLEIHQDLDWNPVKVSTLNVWPLYICDDGAVIFYRDKTEELMELTDEQRNELMKKE 1338
Pavo_cristatus    PCDISVLEIHQDLDWNPVKVSTLNVWPLYICDDGAVIFYRDKTEELMELTDEQRNELMKKE 1338
Gallus_gallus     PCDISVLEIHQDLDWNPVKVSTLNVWPLYICDDGAVIFYRDKTEELMELTDEQRNELMKKE 1345
Chelonia_mydas    PCDISVLEIHQDLDWNPVKVSTLNVWPLYICDDGAVIFYRDKTEELIELTDEQRNELMKKE 1339
Mus_musculus      PCDISVLDIHQDLDWNPVKVSTLNVWPLYICDDGAVIFYRDRTEEVMEELTDEQRNELMKKE 1340
Rattus_norvegicus PCDISVLDIHQDLDWNPVKVSTLNVWPLYICDDGAVIFYRDRTEEVMEELTDEQRNELMKKE 1359
Pan_troglodytes   PCDISVLDIHQDLDWNPVKVSTLNVWPLYICDDGAVIFYRDKTEELMELTDEQRNELMKKE 1339
Macaca_mulatta    PCDISVLDIHQDLDWNPVKVSTLNVWPLYICDDGAVIFYRDKTEELMELTDEQRNELMKKE 1339
Homo_sapiens      PCDISVLDIHQDLDWNPVKVSTLNVWPLYICDDGAVIFYRDKTEELMELTDEQRNELMKKE 1319
Callithrix_jacchus PCDISVLDIHQDLDWNPVKVSTLNVWPLYICDDGAVIFYRDKTEELMELTDEQRNELMKKE 1339
Bos_taurus        PCDISVLDIHQDLDWNPVKVSTLNVWPLYICDDGAVIFYRDRREELMELTDEQRNELMKKE 1339
Equus_caballus    PCDISVLDIHQDLDWNPVKVSTLNVWPLYICDDGAVIFYRDKTEELMELTDEQRNELMKKE 1340
Canis_lupus_familiaris PCDISVLDIHQDLDWNPVKVSTLNVWPLYICDDGAVIFYRDKTEELMELTDEQRNELMKKE 1343
Rhinatrema_bivittatum PCDISVLEIHQDLDWNPKVSTLNVWPLYICDDGAVIFYRDRSEELTELDEQRNELMKKE 1344
Xenopus_tropicalis PCDISVLEIHQDLDWNPVKVSTLNAWPLYISDDGAVIFYRDKMEELVELTDEQRNDLAKKE 1338
.....1330.....1340.....1350.....1360.....1370.....1380

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*****:*****:***:***
Pavo_muticus      SSRLQKTGHRVTYSPRKEKALKIYLDGAPNKDLTQD 1374
Pavo_cristatus    SSRLQKTGHRVTYSPRKEKALKIYLDGAPNKDLTQD 1374
Gallus_gallus     SSRLQKTGHRVTYSPRKEKALKIYLDGAPNKDLTQD 1381
Chelonia_mydas    SSRLQKTGHRITYSPRKEKALKIYLDGAPNKESTQD 1375
Mus_musculus      SSRLQKTGHRVTYSPRKEKALKIYLDGAPNKDVAQD 1376
Rattus_norvegicus SSRLQKTGHRVTYSPRKEKALKIYLDGAPNKDVAQD 1395
Pan_troglodytes   SSRLQKTGHRVTYSPRKEKALKIYLDGAPNKDLTQD 1375
Macaca_mulatta    SSRLQKTGHRVTYSPRKEKALKIYLDGAPNKDLTQD 1375
Homo_sapiens      SSRLQKTGHRVTYSPRKEKALKIYLDGAPNKDLTQD 1355
Callithrix_jacchus SSRLQKTGHRVTYSPRKEKALKIYLDGAPNKDLTQD 1375
Bos_taurus        SSRLQKTGHRVTYSPRKEKALKIYLDGAPNKDLTQD 1375
Equus_caballus    SSRLQKTGHRVTYSPRKEKALKIYLDGAPNKDLAQD 1376
Canis_lupus_familiaris SSRLQKTGHRVTYSPRKEKALKIYLDGAPNKDLTQD 1379
Rhinatrema_bivittatum SSRLQKTGHRVTYSPRKEKALKIYLDGAPNKDLSQD 1380
Xenopus_tropicalis SSRLQKTGHRVTYSPRKEKALKIYLDGPSNKDSSQD 1374
.....1390.....1400.....1410.....

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