

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/KIF Data.fst Tue Feb 1 12:43:15 2022

Page 1 of 6

Pavo_muticus	-----KSVVMSTAKEDDV	13
Pavo_cristatus	-----KSVVMSTAKEDDV	13
Gallus_gallus	-----MGRFSCFVRRNLGSKGREGKSVVMSTAKEDDV	32
Anas_platyrhynchos	-----MSAAREEDV	9
Chelonia_mydas	-----MSTATQEDI	9
Mus_musculus	-----MSGT-EEDL	8
Rattus_norvegicus	-----MSGT-EEDL	8
Homo_sapiens	-----MSVT-EEDL	8
Pan_troglodytes	-----MSVT-EEDL	8
Macaca_mulatta	-----MSVT-EEDL	8
Callithrix_jacchus	-----MSVT-EEDL	8
Canis_lupus_familiaris	-----MSVT-EEDL	8
Equus_caballus	-----MSVT-EENL	8
Bos_taurus	-----MSVT-EEDL	8
Heterocephalus_glaber	MRRGSEEAAGLGLNLWVRVHGRRTGPRGGRGAGFRGLGOYREFITGTRLIMSVP-KEDL	59
Xenopus_tropicalis	-----MAAS-QEDV	8
Rhinatrema_bivittatum	-----MS-TEDEV	6
	1.....10.....20.....30.....40.....50.....60	

Pavo_muticus	CSHMKVVVRVRPETQKEKDGNFAKVHVVDQHILVFDPKKEEFSFFHGKKLTHRDINKRT	73
Pavo_cristatus	CSHMKVVVRVRPETQKEKDGNFAKVHVVDQHILVFDPKKEEFSFFHGKKLTHRDINKRT	73
Gallus_gallus	CSHMKVVVRVRPETQKEKDGNFAKVHVVDQHILVFDPKKEEFSFFHGKKLTHRDINKRT	92
Anas_platyrhynchos	CSHVKVVVRVRPEsqKEKEGNFSKVHVVDQHILVFDPKKEEVSFFHRRKKLVHRDINKRV	69
Chelonia_mydas	CNHVRVVVRVRPQNQKEKDGNFNKVLHVVDKHLVFDPKKEEFSFFHGKKIAYRDINKRK	69
Mus_musculus	CHRMKVVVRVRPENTKEKAVQFCKVVHVVDKHLVFDPKQEEISFFHRRKKTTFDITKRQ	68
Rattus_norvegicus	CHHMKVVVRVRPENTKEKAVQFHKVVHVVDKHLVFDPKQEEISFFHRRKKTTFDITKRQ	68
Homo_sapiens	CHHMKVVVRVRPENTKEKAAGFHKVVHVVDKHLVFDPKQEEVSFFHGKKTTFNQVIKQ	68
Pan_troglodytes	CHHMKVVVRVRPENTKEKAAGFHKVVHVVDKHLVFDPKQEEVSFFHGKKTTFNQVIKQ	68
Macaca_mulatta	CHHMKVVVRVRPENTKEKAAGFHKVVHVVDKHLVFDPKQEEVSFFHGKKTTFNQVIKQ	68
Callithrix_jacchus	CHHMKVVVRVRPENTKEKAAGFHKVVHVVDKHLVFDPKQEEVSFFHGKKTTFNQVIKQ	68
Canis_lupus_familiaris	CHHMKVVVRVRPENTKEKATGLHKVVHVVDKHLVFDPKQEEISFFHGKKPANRDITKRQ	68
Equus_caballus	CHHMKVVVRVRPENTKEKAAGLHKVVHVVDKHLVFDPKQEEIHFFHGKKITNRDITKRQ	68
Bos_taurus	CHHMKVVVRVRPENTKEKASGFHKVVHVVDKHLVFDPKQEEISFFHGKKTMRDITKRQ	68
Heterocephalus_glaber	WHHMRVAVRVRPESTKEKATGLHKVVQVVDKHLVFDPKQEEVSFFPKKSTNFDVSKRQ	119
Xenopus_tropicalis	CSHVRVVVRVRPENEKEKQGNFSRVVQVVDNHILVFDPKVEEVGFFHGRSAANRDITKRK	68
Rhinatrema_bivittatum	CSHVRVVVRVRPENQKETEGNFNKVVQVVDKHLVFDPEVEEVVSFFHGKKLSNRDICKRK	66
70.....80.....90.....100.....110.....120	

Pavo_muticus	KKDLKFVFDVFAETSTQLEVFHTTKSVLDGFLNGYNCTVLAYGATGAGKTHTMLGSPE	133
Pavo_cristatus	KKDLKFVFDVFAETSTQLEVFHTTKSVLDGFLNGYNCTVLAYGATGAGKTHTMLGSPE	133
Gallus_gallus	KKDLKFVFDVFAETSTQLEVFHTTKSVLDGFLNGYNCTVLAYGATGAGKTHTMLGSPE	152
Anas_platyrhynchos	KKDLKFVFDVFAESSSQVEVFHTTKSVLDGFLNGYNCTVLAYGATGAGKTHTMLGSPE	129
Chelonia_mydas	NKDLNFVFDVAFDENSSQLEVFHTTKTVLDGFLNGYNCTVLAYGATGAGKTYTMLGSPK	129
Mus_musculus	NKDLKFVFDVAFDETSTQMEVFHTTKPILHSFNLNGYNCTVFAYGATGSGKTHTMLGSAA	128
Rattus_norvegicus	NKDLKFVFDVAFDETSTQMEVFHTTKPILHSFNLNGYNCTVFAYGATGSGKTHTMLGSTA	128
Homo_sapiens	NKDLKFVFDVAFDETSTQSEVFHTTKPILRSFNLNGYNCTVLAYGATGAGKTHTMLGSAD	128
Pan_troglodytes	NKDLKFVFDVAFDETSTQSEVFHTTKPILRSFNLNGYNCTVLAYGATGAGKTHTMLGSAD	128
Macaca_mulatta	NKDLKFVFDVAFDETSTQSEVFHTTKPILRSFNLNGYNCTVLAYGATGAGKTHTMLGSAD	128
Callithrix_jacchus	NKDLKFVFDVAFDETSTQSEVFHTTKPVLHSFNLNGYNCTVLAYGATGAGKTHTMLGSAD	128
Canis_lupus_familiaris	NKDLKFVFDVAFDETSTQLEVFHTTKPILRSFNLNGYNCTVLAYGATGAGKTHTMLGSAA	128
Equus_caballus	NKDLKFVFDVAFDETSTQLEVFHTTKPILQSFNLNGYNCTVLAYGATGAGKTYTMLGSAA	128
Bos_taurus	NKDLKFVFDVAFDETSTQLEVFHTTKPILRSFNLNGYNCTVLAYGATGAGKTHTMLGSAA	128
Heterocephalus_glaber	NKDLKFVFDTVFDETSTQLEVFHTTKPVLRSFNLNGYNCTVLAYGATGAGKTHTMLGSAA	179
Xenopus_tropicalis	NKDLKFVFDVCFDDSSQLEVFHTTKIVLEGVLNGYNCTVLAYGATGAGKTHTMLGSPG	128
Rhinatrema_bivittatum	NKDLKFVFDVAFNENSTQMEVFHTTKVLVDGFLNGYNCTVLAYGATGAGKTHTMLGSPG	126
130.....140.....150.....160.....170.....180	

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/KIF Data Steps Tue Feb 1 12:43:15 2022

Page 2 of 6

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*****: *:. :.:: :* * *:***** ***** :*.*****:****:
Pavo_muticus      DPGVMYLTMMALYNCMDQIKEEKICNVAVSYLEVYNEQIRDLLVNSGPLAVREDAQKGVV 193
Pavo_cristatus    DPGVMYLTMMALYNCMDQIKEEKICNVAVSYLEVYNEQIRDLLVNSGPLAVREDAQKGVV 193
Gallus_gallus     DPGVMYLTMMALYNCMDQIKEEKICNVAVSYLEVYNEQIRDLLVNSGPLAVREDAQKGVV 212
Anas_platyrhynchos DPGVMYLTMMALYNCMDQIKEEDKICNVAVSYLEVYNEQIRDLLVNSGPLAVREDTQKGVV 189
Chelonia_mydas    EPGVMYLTMMDLYNCMDQIKEEKLCTVAVSYLEVYNEQIRDLLVNSGPLAVREDTQKGVV 189
Mus_musculus      EPGVMYLTMLDLFKCIDEIKEEKECSTAVSYLEVYNEQIRDLLTNSGPLAVREDSQKGVV 188
Rattus_norvegicus EPGVMYLTMLDLFKCMEVDEKDEKECSTAVSYLEVYNEQIRDLLTNSGPLAVREDAQKGVV 188
Homo_sapiens      EPGVMYLTMLHLYKCMDEIKEEKICSTAVSYLEVYNEQIRDLLVNSGPLAVREDTQKGVV 188
Pan_troglodytes   EPGVMYLTMLHLYKCMDEIKEEKICSTAVSYLEVYNEQIRDLLVNSGPLAVREDTQKGVV 188
Macaca_mulatta    EPGVMYLTMLHLYKCMDEIKEEKICSTAVSYLEVYNEQIRDLLVNSGPLAVREDTQKGVV 188
Callithrix_jacchus EPGVMYLTMLHLYKCMDDIKEEKICSTAVSYLEVYNEQIRDLLANSGPLAVREDTHKGVV 188
Canis_lupus_familiaris DPGVMYLTMLDLYKSMDEIKEEKVCSSTAVSYLEVYNEQIRDLLVNSGPLAVREDAQKGVV 188
Equus_caballus    EPGVMYLTMLHLYKSMDEIKEEKVCSIAVSYLEVYNEQIRDLLVNSGPLAVREDAQKGVV 188
Bos_taurus        EPGVMYLTMLDLYKSMDEIKEEKVCSSTAVSYLEVYNEQIRDLLVNSGPLAVREDAQKGVV 188
Heterocephalus_glaber EPGVMYLTMLDLYKSMDEIKEEKICSTAVSYLEVYNEQIRDLLVNSGPLAVREDAQKGVV 239
Xenopus_tropicalis EPGVMYLTMMELYNRIESVKDEKVCNVAISYLEVYIEQIRDLLSNSGLAVREDAQKGVV 188
Rhinatrema_bivittatum QPGVMYLTMMELYDHINELREEKLCEVAISYLEVYNEQIRDLLTNSGSLAVREDAQKGVV 186
.....190.....200.....210.....220.....230.....240

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****:****:****:****:****:****:****:****:****:****:****:****:
Pavo_muticus      VQGLTLHQPKSAEEILQMLDYGKNKRTQHPTDVNASSSRSHAVFQIYLRQODKIASISON 253
Pavo_cristatus    VQGLTLHQPKSAEEILQMLDYGKNKRTQHPTDVNASSSRSHAVFQIYLRQODKIASISON 253
Gallus_gallus     VQGLTLHQPKSAEEILQMLDYGKNKRTQHPTDVNASSSRSHAVFQIYLRQODKIASISON 272
Anas_platyrhynchos VQGLTLHQPKSAEEILQMLDYGKNKRTQHPTDVNASSSRSHAVFQIYLRQODKTASISON 249
Chelonia_mydas    VQGLTLHQPKSAEEILQMLDYGKNKRTQHPTDLNASSSRSHAVFQIYLRQODKTASISON 249
Mus_musculus      VQGLTLHQPKSSEIILQLLDNGKNKRTQHPTDVNAVSSSRSHAVFQIYLRQODKTASINQN 248
Rattus_norvegicus VQGLTLHQPKSSEIILQLLDNGKNKRTQHPTDMNAASSSRSHAVFQIYLRQODKTASINQN 248
Homo_sapiens      VHGLTLHQPKSSEIILHLLDNGKNKRTQHPTDMNATSSSRSHAVFQIYLRQODKTASINQN 248
Pan_troglodytes   VHGLTLHQPKSSEIILHLLDNGKNKRTQHPTDMNATSSSRSHAVFQIYLRQODKTASINQN 248
Macaca_mulatta    VHGLTFHQPKSSEIILHLLDNGKNKRTQHPTDMNATSSSRSHAVFQIYLRQODKTASINQN 248
Callithrix_jacchus IHGLTLHQPKSSEIILHLLDNGKNKRTQHPTDMNAASSSRSHAVFQIYLRQODKTASINQN 248
Canis_lupus_familiaris VQGLTLHQPKSSEIILQLLDNGKNKRTQHPTDMNATSSSRSHAVFQIYLRQODKTASISON 248
Equus_caballus    VQGLTLHQPKSSEIILQLLDNGKNKRTQHPTDMNASSSRSHAVFQIYLRQODKTASISON 248
Bos_taurus        VQGLTLHQPKSSEIILQLLDNGKNRRTQHPTDMNATSSSRSHAVFQIYLRQODKTASINQN 248
Heterocephalus_glaber VQGLSLHQPRSEIILQLLDNGKNKRTQHPTDANAASSSRSHAVFQIYLRQODKTASINQN 299
Xenopus_tropicalis VQGLTLHQPKSAEEILQMLDYGKNKRTQHPTDMNASSSRSHAVFQIYLRQODKTASINQN 248
Rhinatrema_bivittatum VQGLTLHQPRSAEEILQMLDYGNNRRTQHPTDVNATSSSRSHAVFQIYLRQODKTASICHN 246
.....250.....260.....270.....280.....290.....300

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***** *****.* : : * *: *:*****:*****:*****: * :*:***
Pavo_muticus      VRIAKMSLIDLAGSERASATNAKGARFREGTNINRSLALGNIINALADPKRKKQHPIPYR 313
Pavo_cristatus    VRIAKMSLIDLAGSERASATNAKGARFREGTNINRSLALGNIINALADPKRKKQHPIPYR 313
Gallus_gallus     VRIAKMSLIDLAGSERASATNAKGARFREGANINRSLALGNIINALADPKSKKQHPIPYR 332
Anas_platyrhynchos VRIAKMSLIDLAGSERASATKAGARFREGANINRSLALGNVINALADPKSKKQHPIPYR 309
Chelonia_mydas    VRIAKMSLIDLAGSERASATNSKGARFREGTNINRSLALGNVINALADPKSKKQHPIPYR 309
Mus_musculus      VRIAKMSLIDLAGSERASVSGAKGSRFVEGTNINKSLALGNVINALANTKRRNQHIPYR 308
Rattus_norvegicus VRIAKMSLIDLAGSERASISGKTGTRFVEGTNINKSLALGNVINALADTKRRNQHIPYR 308
Homo_sapiens      VRIAKMSLIDLAGSERASTSGAKGTRFVEGTNINRSLALGNVINALADSKRKNQHPIPYR 308
Pan_troglodytes   VRIAKMSLIDLAGSERASTSGAKGTRFVEGTNINRSLALGNVINALADSKRKNQHPIPYR 308
Macaca_mulatta    VRIAKMSLIDLAGSERASTTGAKGTRFVEGTNINRSLALGNVINALADSKRKNQHPIPYR 308
Callithrix_jacchus VRIAKMSLIDLAGSERASTTGAKGTRFVEGTNINRSLALGNVINALADSKRKNQHPIPYR 308
Canis_lupus_familiaris VRIAKMSLIDLAGSERASATSAKGTRFIEGTNINRSLALGNVINALADTKRKNQHPIPYR 308
Equus_caballus    VRIAKMSLIDLAGSERASTTSAQGIRFIEGTNINRSLALGNVINALADTKRKNQHPIPYR 308
Bos_taurus        VRIAKMTLIDLAGSERASATSAKGTRFIEGTNINRSLALGNVINALADTKKKNQHPIPYR 308
Heterocephalus_glaber VRIAKMSLIDLAGSERASSTSTTGARFVEGTNINRSLALGNVINALADGKKKNQHVPYR 359
Xenopus_tropicalis VRIAKMCLIDLAGSERASATNAKGERLREGTNINRSLALGNVINALADPKSKKQHPIPYR 308
Rhinatrema_bivittatum VRIAKMSLIDLAGSERVSNINAQGARFREGANINRSLALGNIINALADPKSKKQHPIPYR 306
.....310.....320.....330.....340.....350.....360

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/KIF Data Tue Feb 1 12:43:15 2022

Page 3 of 6

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*****.*:****:*****.* : :*****:***: :****....
Pavo_muticus      NSKLTRLKDSLGNCRTIMIAAVSPSFMFYDDTYNTLKYANRAKDIKSS-LKSNVVS 372
Pavo_cristatus    NSKLTRLKDSLGNCRTIMIAAVSPSFMFYDDTYNTLKYANRAKDIKSS-LKSNVVS 372
Gallus_gallus     NSKLTRLKDSLGNCRTIMIAAVSPSFMFYDDTYNTLKYANRAKDIKSS-LKSNVVS 391
Anas_platyrhynchos NSKLTRLKDSLGNCRTIMIAAVSPSFMFYDDTYNTLKYANRAKDIKSS-LKSNVVS 368
Chelonia_mydas    NSKLTRLKDSLGNCRTIMIAAVSPSFMFYDDTYNTLKYANRAKDIKSS-LKSNVVS 368
Mus_musculus      NSKLTRLKDSLGNCRTIMIAAVSPSFLFYDDTYNTLKYANRAKEIKSS-LKSNVNL 367
Rattus_norvegicus NSKLTRLKDSLGNCRTIMIAAVSPSFLFYDDTYNTLKYANRAKDIKSS-LKSNVNL 368
Homo_sapiens      NSKLTRLKDSLGNCRTIMIAAVSPSSVFYDDTYNTLKYANRAKDIKSS-LKSNVL 367
Pan_troglodytes   NSKLTRLKDSLGNCRTIMIAAVSPSSVFYDDTYNTLKYANRAKDIKSS-LKSNVL 367
Macaca_mulatta    NSKLTRLKDSLGNCRTIMIAAVSPSSVFYDDTYNTLKYANRAKDIKSS-LKSNVL 367
Callithrix_jacchus NSKLTRLKDSLGNCRTIMIAAVSPSSVFYDDTYNTLKYANRAKDIKSS-LKSNVL 367
Canis_lupus_familiaris NSKLTRLKDSLGNCRTIMIAAVSPSFMFYDDTYNTLKYANRAKDIKSS-LKSNVL 367
Equus_caballus    NSKLTRLKDSFGGNCRTIMIAAVSPSSVFHDDTYNTLKYANRAKNIKSS-LKSNVL 367
Bos_taurus        NSKLTRLKDSLGNCRTIMIAAVSPSSVFYDDTYNTLKYANRAKDIKSS-LKSNVL 367
Heterocephalus_glaber NSKLTRLKDSLGNCRTIMIAAVSPSSLYDDTYNTLKYANRAKDIKSS-LKSNVFN 418
Xenopus_tropicalis NSKLTRLKDSLGNCRTIMIAAVSPSSLYDDTYNTLKYANRAKDIKSA-VKSNVVS 367
Rhinatrema_bivittatum NSKLTRLKDSLGNCRTVMIAAISASSLYDDTYNTLKYANRAKDIKST-VKSNVVS 365
.....370.....380.....390.....400.....410.....420

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.*:***:***: ** ** *****:.* :.. : :. * :*: *
Pavo_muticus      SHISQYVKICNEQKKEIMMLKEKLRTYEEKKASV-HQSQDSSVISSH-QQAEIORYKEIL 430
Pavo_cristatus    SHISQYVKICNEQKKEIMMLKEKLRTYEEKKASV-HQSQDSSVISSH-QQAEIORYKEIL 430
Gallus_gallus     SHISQYVKICNEQKKEIMMLKEKLRTYEEKKASI-HQSQDSSVISSH-QQAEIORYKEIL 449
Anas_platyrhynchos SHISQYVKICNEQKKEIIMLKEKLRAEYEEKKASV-LENSNAAVLSNH-QQEEIKRYOEIL 426
Chelonia_mydas    SHISQYVKICNEQKKEIIMLKEKLRAEYEEKKAAI-PEKHGTSVLSNQ-QQVEIORFREIL 426
Mus_musculus      SHISQYVKICNMQKAEIIMLKEKLKAYEEQKALS-DRNDCAKLVSHPEDRETERFOEIL 426
Rattus_norvegicus SHISQYVKICNMQKAEIIMLKEKLKAYEGOKALT-DRNDCAKLVSHPEDKEIERFOEIL 427
Homo_sapiens      NHITQYVKICNEQKAEIILLKEKLKAYEEQKAFN-NENDQAKLMISNPQKEIERFOEIL 426
Pan_troglodytes   NHITQYVKICNEQKAEIILLKEKLKAYEEQKAFN-NENDQAKLMISNPQKEIERFOEIL 426
Macaca_mulatta    NHITQYVKICNEQKAEIILLKEKLKVYEEQKAFN-NENDQAKLMISNPQKEIERFOEIL 426
Callithrix_jacchus NHVTQYVKICNEQKAEIILLKEKLKAYEEQKAFN-NENDQAKLMISNPQKEIERFOEIL 426
Canis_lupus_familiaris NHITQYVKICNEQKEIIMLKEKLKAYEEQKAFN-DGNKAKIMISNPQKEIERFOEIL 426
Equus_caballus    NHITQYVKICNEQKEIIMLKEKLKAYEEQKAFN-HENKAKLMISNPQKEIKRFOEIL 426
Bos_taurus        NHITQYVKICNEQKKEIIMLKEKLKAYEEQKAFN-DESS-SKVMISNPQKEIERFOEIL 424
Heterocephalus_glaber NHISQYVKICNEQKAEIIMLKEKLKAYEEQKAFN-AKSDEAKLMIPNPQKEIERFOEIL 477
Xenopus_tropicalis SHISQYVKICEQQKKEIAALKEKLKAYEDOKAIAPGKPKQNVLLPPCQNAEIKRFOEIL 427
Rhinatrema_bivittatum SHISQYVKICEQQKKEIEKLKEKLKAYEEQKVAVLKNQIQTSLSSSSQEQSEKORFRETL 425
.....430.....440.....450.....460.....470.....480

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Pavo_muticus      KNVFANREEIRREYLRLEMLKQVSTLKTYYQKQYHEQIQLMCSEERIEKATSKRDHMLAR 490
Pavo_cristatus    KNVFANREEIRREYLRLEMLKQVSTLKTYYQKQYHEQIQLMCSEERIEKATSKRDHMLAR 490
Gallus_gallus     KNVFANREEIRREYLRLEMLKQVSTLKTYYQKQYHEQIQLMCSEERVEKATCKRDHILAR 509
Anas_platyrhynchos KNVFANREEIRKEYLKLLEMLKQVSTLKTYYQKQYHEQIQLMCSEERVEKATCKRDHILAR 486
Chelonia_mydas    KSLFIKREEIRKEYLKLLEMLKQVSTLKTYYQKQYHEQIQLMCSEERVEKATCKRDHILAR 486
Mus_musculus      NCLFQNRREGIRQEYLKLEMLLKENELKSSYHQCHQIEMMCSEDKVEKATCKRDHRLAK 486
Rattus_norvegicus NCLFQNRREGIRQEYLKLEMLLKENELKSSYHQCHQIEMMCSEDKVEKATCKRDHRLAK 487
Homo_sapiens      NCLFQNRREEIRQEYLKLEMLLKENELKSSYHQCHQIEMMCSEDKVEKATCKRDHRLAM 486
Pan_troglodytes   NCLFQNRREEIRQEYLKLEMLLKENELKSSYHQCHQIEMMCSEDKVEKATCKRDHRLAM 486
Macaca_mulatta    NCLFQNRREEIRQEYLKLEMLLKENELKSSYHQCHQIEMMCSEDKVEKATCKRDHRLAM 486
Callithrix_jacchus NCLFQNRREEIRQEYLKLEMLLKENELKSSYHQCHQIEMMCSEDKVEKATCKRDHRLAM 486
Canis_lupus_familiaris NCLFQNRREEIRQEYLKLEMLLKENELKSSYHQCHQIEMMCSEDKVEKATCKRDHRLAM 486
Equus_caballus    NCLFQNRREEIRQEYLKLEMLLKENELKSSYHQCHQIEMMCSEDKVEKATCKRDHRLAM 486
Bos_taurus        NCLFQNRREEIRQEYLKLEMLLKENELKSSYHQCHQIEMMCSEDKVEKATCKRDHRLAM 484
Heterocephalus_glaber NCLFQNRREEIRQEYLKLEMLLKENELKSSYHQCHQIEMMCSEDKVEKATCKRDHRLAM 537
Xenopus_tropicalis RCLFTNREEIRAEYLRLEMLKQVSTLKTYYQKQYHEQIQLMCSEKAVKASCKRDHRLAM 487
Rhinatrema_bivittatum KSLFVNREIRREYLRLEMLKQVSTLKTYYQKQYHEQIQLMCSEKAVKASCKRDHRLAM 485
.....490.....500.....510.....520.....530.....540

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/KIF Data.fst Tue Feb 1 12:43:15 2022

Page 4 of 6

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*.:*::: :::* ** :.* *.:* :*: ** *:
Pavo_muticus      LRTYCAHVQKKKEEKIEHFEENTNWLHRVENEMRLLGODGCI PKELCEDLQCCHLNLEVK 550
Pavo_cristatus    LRTYCAHVQKKKEEKIEHFEENTNWLHRVENEMHLLGODGCI PKELCEDLQCCHLNLEVK 550
Gallus_gallus     LRTYCAHIQKKKEEKIEHFEENS NWLHRVENEMRLLNODGCI PKELREDLQCCHLNLEVK 569
Anas_platyrhynchos LKTYCAHMOKKKEEEMERFEENC NWLHRVENEMRLLGODGSIPKELSKDLQCCHLNLEAK 546
Chelonia_mydas    LKTRRLHVQKKKEEEMKHFEENTNWLHRVENEMRLLGODGHI PQVLHKDLHCYHLKLEVK 546
Mus_musculus      LKTNSCFLEKKKKEEVSKQFDENTNWLHRVENEMRLLGONGDIPEALNKLHCHHLHLQNK 546
Rattus_norvegicus LKSNRCVLEKKKKEEMLKQFDENTNWLHRVSEMRLLGONGDIPEGLNKDLHCHHLHLQNK 547
Homo_sapiens      LKTRRSYLEKRREEELKQFDENTNWLHRVEKEMGLLSQNGHIPKELKKDLHCHHLHLQNK 546
Pan_troglodytes   LKTRRSYLEKRREEELKQFDENTNWLHRVEKEMGLLSQNGHIPKELKKDLHCHHLHLQNK 546
Macaca_mulatta    LKTRRCYLEKRREEELKQFDENTNWLHRVEKEMGHLGQNGHIPKELKKDLHCHHLHLQNK 546
Callithrix_jacchus LKTRRCYLEKRREEELKQFNENTDWLHRVEKEMGHLGPSGHISKEKDLHCHHLHLQNK 546
Canis_lupus_familiaris LKTRRFYLEKKKKEELKQFDENTNWLHRVKTMEMLLGQNGHIPKELNKDLHCHHLHLQNK 546
Equus_caballus    LKTRRCYLEKKRQEELKRLDENTNWLNYVETEMGLLGQNGHIPKELNGDLQSHHLHLQNK 546
Bos_taurus        LKTRRCYLEKKKREEELKQFDENTNWLHRVQTEMGLLGPNGHIPKELSKELHCHHLHLQNK 544
Heterocephalus_glaber LKTRRCYLEKKKREEELKQFDENTNWLHYVENEMRLLGQNGHIPKELSKDLRFHHLHLQNE 597
Xenopus_tropicalis LKNQNVLLQKKKEDELKRL EENTTWLHRLESEMKLNNDGKMP EELGKDLQCHHITLLEVT 547
Rhinatrema_bivittatum LNAQHVHILKRKEEEMKRFEENTNWLHRL ENEMRLLGODGKIPQDLCTDLHSCHLQLDVK 545
.....550.....560.....570.....580.....590.....600

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*:*: *: *: * **::. * :*: ** ***:** * : ** : :*: *:
Pavo_muticus      DLKQIEHMLSLSFSLQDQHYKQMEKVLNALLPLL RKQYLILKEAGLTNTLTETEFGEVEQ 610
Pavo_cristatus    DLKQIEHMLSLSFSLQDQHYKQMEKVLNALLPLL RKQYLILKEAGLTNTLTETEFGEVEQ 610
Gallus_gallus     DLKQIEHMLSLSLQDQHYKQMEKVLNALLPVL RKQYLILKEAGLTNTLTETEFGEVEQ 629
Anas_platyrhynchos DLKQIEHMLSLSVSLQDQHYKQTEKVLNALLPVL RKQYLILKEAGLSNALIETEFGEVEQ 606
Chelonia_mydas    DLKMQIEHMLSLSVSLQEQYKQTEKVLNALLPVL RKQYFTLKEAGLANAVTEANFKEVEQ 606
Mus_musculus      ELKTQMAHMTALACLQEQQHKTQTEAVLNALLPVL RKQYWKLETGLSNAAFDSDFKDIEH 606
Rattus_norvegicus DLKTQMGHMTLAALQEQHQTEAVLNALLPVL RKQYWRLETGLSNAAFDSDFKDIEH 607
Homo_sapiens      DLKQIRHMDLACLQEQQHRTQTEAVLNALLPVL RKQYCTLKEAGLSNAAFESDFKEIEH 606
Pan_troglodytes   DLKQIRHMDLACLQEQQHRTQTEAVLNALLPVL RKQYCTLKEAGLSNAAFESDFKEIEH 606
Macaca_mulatta    DLKQIRHMDLACLQEQQHRTQTEAVLNALLPVL RKQYCTLKDALGSLNAAFESDFKEIEH 606
Callithrix_jacchus DLKQIRHMIDLACLQEQQHRTQTEAVLNALLPVL RKQYCTLKEAGLSNAAFESDFKEIEH 606
Canis_lupus_familiaris DLKQIKHMDLACLQEQQHRTQTEAVLNALLPVL RKQYCALKEAGLTNTAFESDFKEIEH 606
Equus_caballus    DLKQIKHMDLACLQEQQHRTQTEAVLNALLPVL RKQYCALKEAGLSNTAFESDFTEIEH 606
Bos_taurus        DLKQIKHIMDLASLQEQQHRTQTEAVLNALLPVL RKQYCALKEAGLSGLNATFEADIEIEH 604
Heterocephalus_glaber DLKQIRHMIDLACLQEQQHRTQTEAVLNALLPVL RKQYCTLKEAGLSNAFESDFKEIEH 657
Xenopus_tropicalis DLKTQIKHMTIRLVALQERENRYNEKVLNALLPVL RKQYLLLSQVLADTCVEADFKKIEH 607
Rhinatrema_bivittatum DLKTQIEHMIRLVFLQEQESKQNEKLLHLLPALRQYFTLREAGLATSNT EADFQILEH 605
.....610.....620.....630.....640.....650.....660

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*:*: * *.****. . . :.: ***:
Pavo_muticus      LIQRQKSVVWADQTGDEEQKENRELDVSAIFAFPOLV-NKONTLCCS-----TSGTPS 662
Pavo_cristatus    LIQRQKSVVWADQTGDEEQKENRELDVSAIFAFPOLV-NKONTLCCS-----TSGTPS 662
Gallus_gallus     LIQRQKSVVWADQTGDEEQKENRELDVSAIFAFPOLV-NKONTPCRS-----TSGTPS 681
Anas_platyrhynchos LIQRQKSVVWADQTGEEERSNQELEVSTIFEFPOLV-NKPNTPCCT-----TSGTPS 658
Chelonia_mydas    LIQRPKTVVWADQVVEEPKQNDQPEMSVILAFPOLA-SNPNTPCRS-----PSGVPS 658
Mus_musculus      LVERKKVVAWADQTNEHSN-RNDLPGISLLMTFPLG-PIQSISCCI-----SVSDPN 657
Rattus_norvegicus LVERKKVVAWADQTAHSN-QSDVPGTSLMTFPLG-PIQSIPCCS-----SMSDPS 658
Homo_sapiens      LVERKKVVVWADQTAEQPK-QNDLPGISVLMTFPLG-PVQPIPCCS-----SSGGTN 657
Pan_troglodytes   LVERKKVVVWADQTAEQPK-QNDLPGISVLMTFPLG-PVQPIPCCS-----SSGGSN 657
Macaca_mulatta    LVERKKVVVWADQTAEQPK-QNDPPGISVLMTFPLG-PVQPIPCCS-----SSGGSN 657
Callithrix_jacchus LVERKKVVVWADQTTEQPN-QNDLPAISVLMTFPLG-PVQPISCCI-----SSSESN 657
Canis_lupus_familiaris LVERKKVVVWADQTTEHTIKQNDLPGVSVLMTFPLGSPVQSAPCCI-----SSSESN 659
Equus_caballus    LVERKKVVVWADQTAHTK-QNDLPGISVLMAFPOLG-PVQAPYCT-----SSSESN 657
Bos_taurus        LVERKKVVVWADQTEPAK-QNNLPEVSILMTFPLG-PVHSSPCCI-----SPGESN 655
Heterocephalus_glaber LVERKKVVVWADQTTEPPN-QKDLPGISVLMTFPLA-PVQSIPCCI-----SSGDPN 708
Xenopus_tropicalis LVQREKAVVWADQAESDEANKCDDSEIAAVVTFPHLK-YSQTPCKEEKCAQLIQSAEKM 666
Rhinatrema_bivittatum LIQREKVVVWADQATEKEPKQNDQPDLSVLMVFPHIK-YSQSTPCG-----KAS 653
.....670.....680.....690.....700.....710.....720

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/KIF Data.fst Tue Feb 1 12:43:15 2022

Page 5 of 6

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      . . . * . . . * . . .
Pavo_muticus      QEMKRD TQLV-EFAVPPQKPTRRKLMDSPVKTPSPAAS-----KHYSLCHLED 709
Pavo_cristatus    QEMKRD TQLV-EFAVPPQKPTRRKLMDSPVKTPSPAAS-----KHYSLCHLED 709
Gallus_gallus     QEMKRN TQLV-EYVVPQKPTRRKLMDFPVKTPSPAAS-----KHFSLCHLED 728
Anas_platyrhynchos QEMKKN TQLV-ELEVPPQKPTRRKLMDSPVTTTPSPAAS-----KHYSLPHLED 705
Chelonia_mydas    EEVKKNVQHVSQCAVPPQKPTRRKLMDSPATAQSPKAS-----EQSSLSCLLED 706
Mus_musculus      -----VLKLT PQRRTRRKIIIPSLKVQHTQKS-----ALSESTQLND 694
Rattus_norvegicus -----ILKIT PQRRTRRKLIIPSLKVKHTQKS-----ALSESTQLND 695
Homo_sapiens      -----LVKIPT EKRRTRRKLMPSPKLGQHTLKS-----PPSQSVQLND 694
Pan_troglodytes   -----LVKIPT EKRRTRRKLMPSPKLGQHALKS-----PPSQSVQLND 694
Macaca_mulatta    -----LVKIT PQKRRTRRKLMPSPKLGQHTLKS-----PPSQSVQLND 694
Callithrix_jacchus -----LLKIPT QKRRTRRKLMPSPKLGQHTVKS-----PLSESQVLND 694
Canis_lupus_familiaris -----LLKIPT PHKRRTRRKLMPSPKAAHPQKS-----ALSESLELND 696
Equus_caballus    -----LLKIPT QKRRTRRKLMPSPKAKHTQKS-----TLSESMQLND 694
Bos_taurus        -----LLKIPS QKRRTRRKLMPSPLNKHTQTS-----VESENTQLND 692
Heterocephalus_glaber -----LFKIPL HKRRTRRKLMPSPLVKHPEKP-----TLAESVPLND 745
Xenopus_tropicalis AQKENPLAIVRHFTGAQNSQTEEFKENVPQKAINVPPRKRTRRKLMDSPMSTESHQOND 726
Rhinatrema_bivittatum ESKDIPQOGSREAALPPQKQTKRRLMESPFGRNPKHP-----DPLS--NNQLDE 701
      .....730.....740.....750.....760.....770.....780

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      *:  * . *: :**** . .
Pavo_muticus      SLSKEIQPIVYTPESCRKTIQSSCSQTVVKQALHLAGLQETNECNIGIQ--LRKPTITDS 767
Pavo_cristatus    SLSKEIQPIVYTPESCRKTIQSSCSQTVVKQALHLAGLQETNECNIGIQ--LRKPTITDS 767
Gallus_gallus     SLSKEVQPIVYTPESCRKTIQSSCSQTVVKQALHLAGLQETNECNIGIQ--LRKPSITDS 786
Anas_platyrhynchos SLSKEFCPIIYTPESCRKPVQSCSMRTAVKQDLRLSGPQAANECNANMQ--LKKASVTDL 763
Chelonia_mydas    SLSKEVRPIVYTPPEVCRKSMPIFCTQTVVKQPLQVASLPEVNNCNVDIHFPLKEECDMDF 766
Mus_musculus      SFSKELQPIVYTPEDCKK-AQDLFPS-----LRTSSQSANVMNDN-SQKALCRIES 744
Rattus_norvegicus SFSKELQPIVYTPEDSRRTVQDLSP-----LARASSHSANGMNDN-SLKALCRITES 746
Homo_sapiens      SLSKELQPIVYTPEDCRKAFONPSTVILMKPSSFTTSFQAISSNINSDN-CLKMLCEVAI 753
Pan_troglodytes   SLSKELQPIVYTPEDCRKAFONPSTVILMKPSSFTTSFQAISSNINSDN-CLKMLCEVAI 753
Macaca_mulatta    SLSKELQPIVYTPEDCRKTFONPSTVILIKPSSFTTSFQAISSNINSDN-SQK-MCEVAI 752
Callithrix_jacchus SLCKELQPIVYTPEDCRKTFONPSTVILIKPSSFTTSFQAISSNINSDN-SLKMLCEVAI 753
Canis_lupus_familiaris SLSKELQPIVYTPEDCRKTAQNSSIVTSSKPLSQATRFOTISSNVNGEN-SLKTLCIDIT 755
Equus_caballus    SLSKELQPIVYTPEDCRKTSQNPCTVTFKLPSLHTTSFQAN-SNINSNN-SSKMLCEVDIT 752
Bos_taurus        SLSKELQPIVYTPENCRTKYQNPSTGTSLKPS-HTTSFQTISSNINSDN-SLKMLCEVDI 750
Heterocephalus_glaber SLTRELOPLLTPENCRCVPVPCASPRPWPVRPPSHPAGIQALGPCGNSGD-SLQMLGRVDS 804
Xenopus_tropicalis SISDELSPIVYTPETSNNVT--LLKQVAK----IPCVRGKRENNPGLPDYAG---HAGF 777
Rhinatrema_bivittatum SFSEEVFPILYTPEICRGTEKPDLCSEIVT----KQNILANSFDNWDNLNIPVEGKRKTDI 757
      .....790.....800.....810.....820.....830.....840

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      . . . * . . .
Pavo_muticus      MCDVILECDEDRMDSTVILSEGAGETNGISIDSSAKESQPCSN-SILRRRLGLASLKNKNP 826
Pavo_cristatus    MCDVILECDEDRMDSTVILSEGAGETNGISIDSSAKESQPCSN-SILRRRLGLASLKNKNP 826
Gallus_gallus     MCDVVLECDEDRMDSTVILSEGTGETNGISIDLAKKSQPCSN-SILQRLGLSSSKNKNP 845
Anas_platyrhynchos TCDVIPECDEGDMDSTVILYERTGEANEASVDSSVEQSPCSS-SILQRLGLPSLKSNT 822
Chelonia_mydas    TYNVIPOCEQTDNMSTVTLYEGTSNTNDPSADLSEKESHLCSNSSVLQRLGLPSLLNKNP 826
Mus_musculus      PLS-RTECKQG-LYSTSTLCDSIRGLKN---KWPEQEPLASSKS-SVHRIESSSFSTKDS 798
Rattus_norvegicus PLS-RTECKEG-LYSTSAICDGIKSLKN---NLP--EPLPSSKS-TLHRVESSSFPTKDS 798
Homo_sapiens      PHNRRKECGQEDLDSTFTICEDIKSSKC---KLPEQESLPNDNKDILQRLDPSSFSTKHS 810
Pan_troglodytes   PHNRRKECGQEDLDSTFTICEDIKSSKC---KLPEQESLPNDNKDILQRLDPSSFSTKHS 810
Macaca_mulatta    PHNRRKECGQEDLDSTFTICEDIKSLKC---KLPKQESLPNDNKDILQRLDPSSFSTKHS 809
Callithrix_jacchus PHNRRKECGQEDLDSTFTICEDTKSLQC---KLPEQESLNDNKNILQRLDP-SFSSKQS 809
Canis_lupus_familiaris PHNRRKECGQEDLDSTFTICEDIKSLKS---KSPEQESLPNNNN-ILQRLASSSFSTKHP 811
Equus_caballus    PLSRRKECGQEDLDPTFIREDTRSLKS---TLPEQESLSNNN-ILQRLDPSSFSTKHS 807
Bos_taurus        PLSMRKEHGEDLKSTFLICEDTRSLKS---ELPEQESLPNNN-ILQRLAPSSSVSTKQP 805
Heterocephalus_glaber PAVCRAAHGRSATEP-LTACEDTRALKR---KLPEQDSLTKN--SLERLGPSSLSGTHP 858
Xenopus_tropicalis SFPMTSESKDITDMNSTVILSHGDGDKSS-----ENTADAKSGTSMQLQRLGLSSLLSKPS 832
Rhinatrema_bivittatum NSNVTTGCNQINLNSTIILCPGPSAANF-----DSSDLYPQARSSVFQRCDSLFPNKNP 812
      .....850.....860.....870.....880.....890.....900

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CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/KIF Data Date: Tue Feb 1 12:43:15 2022

Page 6 of 6

	*****:::.* *	. . .	***:::	.
Pavo_muticus	-ASVIEKPSYAMMTSAAERKRKILSSTS	NAGLGNLKDPV-SPKRVROEILLNNNRVLRVP	884	
Pavo_cristatus	-ASVIEKPSYAMMTSAAERKRKILSSTS	NAGLGNLKDPV-SPKRVROEILLNNNRVLRVP	884	
Gallus_gallus	-ASVLQKPSYAMMTSAAERKRKILSSTS	NT--GNLQDPV-SPKRVRODILLSN-RVLRVP	900	
Anas_platyrhynchos	TTTSVPEKPSYAMMTSAAERKRKVLSS	NTDLSLREEV-SAKRVROEIVLSN-RVLRVP	880	
Chelonia_mydas	-GPMHEQPSYAMMTSAAERKRKLLSS	VPSGLSLQNPV-SAKRIRODILLSH-KPLRVP	883	
Mus_musculus	MPESAGVPSYAMMTTAAKRKWKQMS	STSNASIKSDESCG-FAKRIRRDNSSVKPMQENRL	857	
Rattus_norvegicus	RSVSTSVPSYAMMTTAAKRKWKFMS	STSASLKSDESCG-LAKRIRODNSSVKLIRENRL	857	
Homo_sapiens	MPVPSMVPSYAMMTTAAKRKRKLT	STSNSSLTADVNSG-FAKRVRODNSS	EKHLOENKP 869	
Pan_troglodytes	MPVPSMVPSYAMMTTAAKRKRKLT	STSNSSLTADVNSG-FAKRVRODNSS	DKHLOENKP 869	
Macaca_mulatta	MPIPSMPVPSYAMMTTAAKRKRKLT	STSNTSLTADVNSG-FAKRVRODNSS	DKHLOENKP 868	
Callithrix_jacchus	MPIRSMVPSYAMMTAAAKRKRKL	SSNTSLTADVNSG-FAKRVROENSS	-KHLOENRP 867	
Canis_lupus_familiaris	LPIPSIEPSYAMMTAAARRKRKLT	SSASNTSLTAEVMPG-FAKRVRODDA	EKVLQENRP 870	
Equus_caballus	LPTPSVVPSYAMMTATARRKRKL	SSASNTSLTAEVNSG-FAKRVRODNSS	SHELLOENRP 866	
Bos_taurus	LPIPSTVPSYAMMTAAAKRKRKL	SSAANTSLTAEVNSG-SAKRVHODNSS	DKHLOENKP 864	
Heterocephalus_glaber	VPVSSTMPSYAMMTAAAKKRKL	SSNTSLTAEVNHG-FAKRVROENSS	NNLLOENRP 917	
Xenopus_tropicalis	SKPLSEKPSYAMMTSAAERKRKLL	SLAGNSAVKEDSVLPTAKRVRODIS	LDC-KALRVQ 891	
Rhinatrema_bivittatum	TKPKSEKPSYAMMTSAQHKRKL	LLCSAGSGVGENHPD	SKAARVRRDNVNG-KALRVQ 871	
910.....920.....930.....940.....950.....960			

Pavo_muticus	KTSGIKTKSLNREQDVPRLVRSFSEGNVAVGVKSR	TSKSLLLHVCKKRNR	936
Pavo_cristatus	KTSGIKTKSLNREQDVPRLVRSFSEGNVAVGVKSR	TSKSLLLHVCKKRNR	936
Gallus_gallus	KMSGIKTKSLKQEQDVPRLVRSFSEGNVAMGVKSC	TSKSLLLHVCKKKKR	952
Anas_platyrhynchos	KIAGIGRRSWKEERDVSRNLARSLSSEGNVALGAKSR	TSKNLLLVHCKKKNR	932
Chelonia_mydas	KKAGIGTRSRKQEPNMQRNFVRSLSSEGNVTLLGLKSR	TSTNLLIRLSKKK	932
Mus_musculus	KVGYKRN-TNKTNNSMLRKFRNTSKENVQ		886
Rattus_norvegicus	RVGYKKT-TNKTNNSMLRKFRNTSKENVQ		886
Homo_sapiens	TMEHKRN-ICKINPSMVRKFGRNISKGNLR		898
Pan_troglodytes	TMEHKRN-ICKINPSMVRKFGRNISKGNLR		898
Macaca_mulatta	TMEHKRN-ICKVNPISLVRKFGRNISKGNLR		897
Callithrix_jacchus	TMEHKRN-ICKIDPSMVRKFGRNISKGNLR		896
Canis_lupus_familiaris	TVDYKRN-VHKVNPNMVRKFGRSISKGNLR		899
Equus_caballus	TMEYKRN-IHKVKPNMVRKFGRNISKGNLR		895
Bos_taurus	TMDYKRN-IHKIRPNMVRKFGRSISKGNLR		893
Heterocephalus_glaber	AIAQNKT-IHKINSNMVRKFGRNISKGNLR		946
Xenopus_tropicalis	RVAAGTT--RNKDNCAARRRLPKSVSESALGVKGKPF	SFOASAQLLFQGGKKRTAPKDS	947
Rhinatrema_bivittatum	R-APGKS--KNADWNSQKAFQKAT		892

.....970.....980.....990.....1000.....1010.....