

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/CPLANE11.ppe Feb 1 11:47:44 2022

Page 1 of 21

```

      *:: *::: *  ***::** .*. *:::***::**::: : *:. * ** . **
Pavo_muticus      MRMEVKLDVLVSTSIKQRPWTRITWIGQEKEAVFLLDDKHINEINLASGKTKKKIPQLQ 60
Pavo_cristatus    MRMEVKLDVLVSTSIKQRPWTRITWIGQEKEAVFLLDDKHINEINLASGKTKKKIPQLQ 60
Gallus_gallus     MRMEVKLDVLVSTSIKQRPWTRITWIGQEKEAVFLLDDKHINEINLASGKTKKKIPQLQ 60
Chelonia_mydas    --MEIKLDVLVSMCIKHKRPWPRISWLGOEKEAIFLLDDKCISEINLLSGKTKKKIPRLQ 58
Mus_musculus      --MEMRLEVLTTSTSIKQKKPWPRVSWLGOENEAVFLLDEKFINEINLLSGRTKKKKIPSLQ 58
Rattus_norvegicus --MEMRLEVLTTSTSIKQKKPWPRVSWLGOENEAVFLLDEKFINEINLLSGRTKKKKIPSLQ 58
Homo_sapiens      --MEIRLEILTSTGIKQKKPWPRVSWLGOEKEAVFLLDDKFINEINLLSGKIKKKIPSLQ 58
Pan_troglodytes   --MEIRLEILTSTGIKQKKPWPRVSWLGOEKEAVFLLDDKFINEINLLSGKIKKKIPSLQ 58
Macaca_mulatta    --MEIRLEILTSTSIKQKKPWPRVSWLGOEKEAVFLLDDKFINEINLLSGKIKKKIPSLQ 58
Callithrix_jacchus --MEIRLEILTSTSIKQKKPWPRVSWLGOEKEAVFLLGEKFVNEINLLSGKIKKKIPSLQ 58
Canis_lupus_familiaris --MEIRLEVLTTSTSIKQKKPWPRVSWLGOEDEAVFLLDDKFINEINLLSGRTKKKKIPSLQ 58
Felis_catus       --MEIRLEVLTTSTSIKQKKPWPRVSWLGOENEAVFLLDNKFINEINLLSGRTKKKKIPCLQ 58
Equus_caballus    --MEIRLEVLTTSTSIKQKKPWPRVSWLGOENEAVFLLDDKFINEINLLSGRTKKKKIPSLQ 58
Bos_taurus        --MEIRLEVLTTSTSIKHKKPWPRVSWLGOENEAVFLLDDKSVNEINLLSGRTKKKKIPSLQ 58
Rhinatrema_bivittatum --MEIKLEVLVSSSIKRRKPCPRFCWLGOEKESIFLLDEKWLSELSLPSGRIKKKAPRLQ 58
Rana_temporaria   MNMDVSLEVLVSTSIKRRKPCARLCWLGOEKEAVFLVDNRIRREISIRSGNVKKPLLKKS 60
1.....10.....20.....30.....40.....50.....60

```

```

      .  *** *..**::: :***: ** :* * : : .  :
Pavo_muticus      SLLKNVVVLTTSSINGAWLAGLLTTGELFLWNKDQDCLKIIPAIIEIRKVAAAAQECLMRL 120
Pavo_cristatus    SLLKNVVVLTTSSINGAWLAGLLTTGELFLWNKDQDCLKIIPAIIEIRKVAAAAQECLMRL 120
Gallus_gallus     SLLKNVVVLTTSSINGAWLAGLLTTGELFLWNKDQDCLKIIPAIIEARKVVAVAQECLMRL 120
Chelonia_mydas    SLLKNVVVLATSRNGAWLAGILTTGELFLWNKDQDYLIKIVPAVESSKVVTAAQECMRL 118
Mus_musculus      PLLKDVVFLATSTNDVWLSGVLTTGELFLWNKDQDCLKKIHVTEKPKKAIAAVASSRL 118
Rattus_norvegicus PLLKDVVFLATSTNDVWLSGVLTTGELFLWNKDQDCKVKIQTTERPKKAIAKATVASSRL 118
Homo_sapiens      PFLKDVIVLTTSSNDAWLAGVLTGELFLWNKDQDCLKTIPITEKPKEMIKATVASSRL 118
Pan_troglodytes   PFLKDVIVLTTSSNDAWLAGVLTGELFLWNKDQDCLKTIPITEKPKEMIKATVASSRL 118
Macaca_mulatta    PFLKDVIVLTTSSNDAWLAGVLTGELFLWNKDQDCLKTILITEKPKEMIKATVASSLRP 118
Callithrix_jacchus PLLKDVIVLTTSSNDAWLAGILITGELFLWNKDQDCLKTIPITEKPKEMIKATVASSLRP 118
Canis_lupus_familiaris PLLKDVIVLTTSSNDVWLAGVLTGELFLWNKDQDCLKTIPATEKPKKMIQAAVASSVRL 118
Felis_catus       PLLKDAIVLTTSSNDAWLAGVLTGELFLWNKDQDCLKTIVQAAEKPKKMIQAAVASSLRL 118
Equus_caballus    PLLKNVIVLTTSSNDAWLAGVLTGELFLWNKDQDCLKTIQATEKPKEMIKAAVASSLRL 118
Bos_taurus        PLLKDVTLTTSSNDAWLAGVLTGEVFLWNKDQDCLKTIPATEKPKDKMIKAAVASSRL 118
Rhinatrema_bivittatum PLLRNALGLATSRNGAWLAGILETGEIFLWNKDQDYLIKIPATESSKAIAALQACPGR 118
Rana_temporaria   ----SIVTLSTANGAWLAALNVSGELSLWCKDLDCLLTVPATADISQILSLAQETCLKL 116
.....70.....80.....90.....100.....110.....120

```

```

      ***: * : : : . . : *** : : . : . *::: * : : : * : :
Pavo_muticus      YLYVSGDGRRALLTPTACIFLWESTEYENTL-SYKNS--SGRWTQILPSESVTLPSTEE 177
Pavo_cristatus    YLYVSGDGRRALLTPTACIFLWESTEYENTL-SYKNS--SGRWTQILPSESVTLPSTEE 177
Gallus_gallus     YLYVSEDGRRALLTPTACVFLWESTEYENTL-SYKNF--SGRWTQILPSESVTLPSTEE 177
Chelonia_mydas    YLYVSGDGNKVLLITPTACVFLWESTECKNIS-SPKNTSLAGRWSQIVPEESVILPSAED 177
Mus_musculus      YLYVAENGKRILLITSSGCILLWEYLELKNIL-SSKSLSLVGQWSQIVPEEAVSLPSTKD 177
Rattus_norvegicus SLYVAENGKRILLITSSGCILLWEYLELKNIL-SSKSLSLVGQWSQIVPEEAILLPSTKD 177
Homo_sapiens      YLYVSGNGKRIVLITPSGCIFLWEYLELKNIL-SSKSLSLAGRWSQIVPEEAVLLPSTED 177
Pan_troglodytes   YLYVSGNGKRIVLITPSGCIFLWEYLELKNIL-SSKSLSLAGRWSQIVPEEAVLLPSTED 177
Macaca_mulatta    YLYVSGNGRRILLITP-GCIFLWEYLELKSIL-SSKSLSLVGRWSQIVPEEAVLLPSIED 176
Callithrix_jacchus YLYVSGNGKRILLITPSGCIFLWEYLELKNIL-ASKSLSLVGQWSQIVPEEAVLLPSTED 177
Canis_lupus_familiaris YLYVSGNGKRVLLITPSGCIFLWEYLEFKTIL-SSKSPSLVGQWSQIIPDEAVHLPSTED 177
Felis_catus       YMYVSGNGRRVLLITP-GCIFLWEYLEFKNIL-SSKSPSLVGQWSQIIPDEAVHLPSTED 176
Equus_caballus    YLYVSGNGKRVLLITPSGCIFLWEYLEFKNII-SSKSPSLVGQWSQIIPDEAVHLPSTKD 177
Bos_taurus        YLYVSGNGKRVLLITPSGCIFLWEHLEFKNGL-SSKSLSLVGQWSQIMPEEAVPLPSTED 177
Rhinatrema_bivittatum HLYVSGDGRRVLVATLTGSVFLWESTDGKNMP-PFRKPLSLGRWSQIMPEQSMILPSTED 177
Rana_temporaria   YLYVSGDGSRVLLANHTGCVYLWENTEEKSRPNPQKTRILSGRWTKIEPHDITVKFPSTED 176
.....130.....140.....150.....160.....170.....180

```

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/CPLANE11.ppe Feb 1 11:47:44 2022

Page 2 of 21

```

** : . *::*:** ***:** * : ** :* * . : ::*:**
Pavo_muticus      KEIGVHVAFLQNEVLGDCCLCSFVFYSGECLVLTFLILRWHENGFKYASSLPYQIHWVQQ 237
Pavo_cristatus    KEIGVHVAFLQNEVLGDCCLCSFVFYSGECLVLTFLILRWHENGFKYASSLPYQIHWVQQ 237
Gallus_gallus     KEVGVAHATFLQNEVLGDCCLCSFVFYSGECLLLTFLILRWHENGFKYASSLPYQIHWVQQ 237
Chelonia_mydas    KETGMSADFIKNEILGDCCLCSFVFCSGECLMLTFLALRWHENSFKYISSLPYHIHWAQQ 237
Mus_musculus      KEAVVAAVFVKNELFGDCCLCSFTFYSGECLKLTFLDIQWYENIFTSVRSLLFRVHWAQQ 237
Rattus_norvegicus KEAVVDAVFVKNELFGDCCLCSFTFYSGECLKLTFLAIQWYENIFTSIRSLPFRVHWAQQ 237
Homo_sapiens      KEAVVNAVFIKNEFGDCCLCSFTFYSGECLKLTFLAIRWHENVFTSVRSLPYHVHWAQQ 237
Pan_troglodytes   KEAVVNAVFIKNEFGDCCLCSFTFYSGECLKLTFLAIRWHENVFTSVRSLPYHVHWAQQ 237
Macaca_mulatta    KEAVVNAVFIKNEFGDCCLCSFTFYSGECLKLTFLAIRWHENVFTSVRSLPYHVHWAQQ 236
Callithrix_jacchus KEAVVNAVFIKNEFGDCCLCSFTFYSGECLKLTFLAIRWHENVFTSVRSLPYHVHWAQQ 237
Canis_lupus_familiaris KETVVHAVFIKNEFGDCCLCSFTFYSGECLKLTFLAIRWHENVFTTMRSLPYHVHWAQQ 237
Felis_catus       KEAVVHAVFIKNEFGDCCLCSFTFYSGECLKLTFLAIRWHENVFTPVRSLPYHVHWAQQ 236
Equus_caballus    KEAVVHAVFIKNEFGDCCLCSFTFYSGECLKLTFLAIRWHENVFTPIRSLPFCVHWAQQ 237
Bos_taurus        KEAVVHAVFIKNEFGDCCLCSFTFYSGECLKLTFLAIRWHENVFTPVRSLSYHVQWAQQ 237
Rhinatrema_bivittatum KEATVHAVFVENEVMGDCCLCSFVFYSGEHLILLIFLKLKWLNTYSHLSALPYQVHWVRQ 237
Rana_temporaria   KEAKVHAMFLKSEVLGDSCLCTFVFYSGAHLRMTFLSLRWLEGQKYNVSVPFNHWAQQ 236
.....190.....200.....210.....220.....230.....240

```

```

* : . * :*****:** * :*:** ***:** :*:***:** :* :
Pavo_muticus      TCSLVNLVLPQCVSVKSRGALLSAFARDGLFLAVAVNQIDPKATQILFINTLNFVTVSGSI 297
Pavo_cristatus    TCSLVNLVLPQCVSVKSRGALLSAFARDGLFLAVAVNQIDPKATQILFINTLNFVTVSGSI 297
Gallus_gallus     TCSLVNLVLPQCVSIKSRGALLSAFARDGLFLAVAVNQIDPKATQILFINTLNFVTVSGSV 297
Chelonia_mydas    ACSLPTLVVPVCSVKSARGALLTAFSRDGLLLAVAVNQSDPKATQILFINTLNFVTVSGSL 297
Mus_musculus      ECPLCSLIPRCASVKSARGALISAFSRDGLALAVTLNQKDPATQVLFINTLNFVTVLCCGSL 297
Rattus_norvegicus ECRLCNLIPKCAVKSARGALISAFSRDGLALAVTLNQKDPATQVLFINTLNFVTVLCCGSL 297
Homo_sapiens      DCHLCSLIPKCESVKSARGALISAFSRDGLTLAVTLNQKDPKATQVLFINTLNFVTVLCCGSL 297
Pan_troglodytes   DCHLCSLIPKCESVKSARGALISAFSRDGLTLAVTLNQKDPKATQVLFINTLNFVTVLCCGSL 297
Macaca_mulatta    DCHLCSLIPKCESVKSARGALLSAFSDRGLTLAVTLNQKDPKATQVLFINTLNFVTVLCCGSL 296
Callithrix_jacchus DCHLSSLIPKCESVKSARGSLISAFSRDGLTLAVTLNQKDPKATQVLFINTLNFVTVLCCGSL 297
Canis_lupus_familiaris NCHLCNLIPKCAVKSARGALISAFSRDGLTLAVTLNQKDPKATQVLFINTLNFVTVLCCGSL 297
Felis_catus       DCLLCHLIPKCESVKSARGALISAFSRDGLTLAVTLNQKDPKATQVLFINTLNFVTVLCCGSL 296
Equus_caballus    DCLLSSLIPKCESVKSARGALISAFSRDGLTLAVTLNQKDPKATQVLFINTLNFVTVLYGSL 297
Bos_taurus        DCLLCSLIPKCESVKSARGALISAFSRDGLTLAVTLNQKDPKATQVLFINTLNFVTVLYGSL 297
Rhinatrema_bivittatum EYSLASLIPQCESVKSARGALISAFAGDGLVLAVTINQRDPKATQILFISTINFTVIGSL 297
Rana_temporaria   DCPLDITTYTTCPEVKSARGALVTAFAKDGQVQALAINQKDPKATCVVFINTMNFVTVCCGSL 296
.....250.....260.....270.....280.....290.....300

```

```

:****. :* :*****:** :*:***:***:***:** :* :* :* :
Pavo_muticus      KGCSKSSSTVPSKFIRSYWVGDMSWTSDSLFLACMLKRGSLILLTGMGELLTLITSGCSV 357
Pavo_cristatus    KGCSKSSSTVPSKFIRSYWVGDMSWTSDSLFLACMLKRGSLILLTGMGELLTLITSGCSV 357
Gallus_gallus     KGCSKSSSTVPSKFIRSYWVGDMSWTPDLSLFLACMLKRGSLILLTGMGELLTLITSGCSV 357
Chelonia_mydas    KGCSKNHVVPSKFVRSYWVGDMSWTPDLSLFLACMLKRGSLILLTGMGELLTLVTSGCSI 357
Mus_musculus      KGCSNKNPVVPATLIRSYWVGDISWTHDSLFLACMLKRGSLVLLTCLGELLTLVTFGCSI 357
Rattus_norvegicus KGCSNKNPVVPATLIRSYWVGDISWTHDSLFLACMLKRGSLVLLTCLGELLTLVTFGCSI 357
Homo_sapiens      KGCSNKNPVVPATLIRSYWVGDISWTHDSLFLACMLKRGSLVLLTCLGELLTLITFGCSI 357
Pan_troglodytes   KGCSNKNPVVPATLIRSYWVGDISWTHDSLFLACMLKRGSLVLLTCLGELLTLITFGCSI 357
Macaca_mulatta    KGCSNKNPVVPAALIRSYWVGDISWTHDSLFLACILKRGSLVLLTCLGELLTLITFGCSI 356
Callithrix_jacchus KGCSNKNPVVPAALIRSYWVGDISWTHDSLFLACILKRGSLVLLTCLGELLTLITFGCSI 357
Canis_lupus_familiaris RGCSNKNPVVPATLIRSYWVGDISWTHDSLFLACMLKRGSLVLLTCLGELLTLITFGCSI 357
Felis_catus       RGCSNKNPVVPATLIRSYWVGDISWTHDSLFLACMLKRGSLVLLTCLGELLTLITFGCSI 356
Equus_caballus    KGCSNKNPVVPATLIRSYWVGDISWTHDSLFLACVLRKRGSLVLLTCLGELLTLVTFGCSI 357
Bos_taurus        KGCSNKNPVVPATLIRSYWVGDISWTHDSLFLACVLRKRGSLVLLTCLGELLTLITFGCSI 357
Rhinatrema_bivittatum KGCSNKNQMIPIRSYWVGDMSWTLDLSLFLACMLKRGALILITRLGELQSLVTFGCSV 357
Rana_temporaria   KGCSKNQKIPIRYSYWVADLSWTADSLFLACVLRKRGSLVLLTCLGELLTLITFGCSV 356
.....310.....320.....330.....340.....350.....360

```

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/CPLANE11.ppe Feb 1 11:47:44 2022

Page 3 of 21

```

*****:***** *      :      ::.. :.* **: * :*****: .*:.* **:.*
Pavo_muticus      EFGPAEFIPHPLITCRQHNSLCQ--DSQTLGSSASESDLMRQRFVASHSRLPYLIVS 415
Pavo_cristatus    EFGPAEFIPHPLITCRQHNSLCQ--DSQTLGSSASESDLMRQRFVASHSRLPYLIVS 415
Gallus_gallus     EFGPAEFIPHPLITYRQHNSLCQ--DSQTLGSSASESDLMRQRFVASHSRLPYLIVS 415
Chelonia_mydas    EFGPAEFIPFHLITYRPOQSVSQ--DSHSLGSSASESDLMRQRFVTSHSRLPYLVVS 415
Mus_musculus      EFGPAEFIPHLPLITYRPOQLPFC--DSNNCVDSSASESDPLRQRFSEIKAHSRLPYLIIS 415
Rattus_norvegicus EFGPAEFIPHLPLITYRPOQLPFC--DSNNAVDSSASESDPLRQRFSEIKAHSRLPYLIIS 415
Homo_sapiens      EFGPAEFIPHLPLITYRPOQFTFC--DSNNSVDSSASDSDPMRQRFSEIKAHSRLPYLVIS 415
Pan_troglodytes   EFGPAEFIPHLPLITYRPOQFTFC--DSNNSVDSSASDSDPMRQRFSEIKAHSRLPYLVIS 415
Macaca_mulatta    EFGPAEFIPHLPLITYRPOQFTFC--DSNNSVDSSASDSDPMRQRFSEIKAHSRLPYLVIS 415
Callithrix_jacchus EFGPAEFIPHLPLITYRPOQFTFC--DSNNSVDSSASDSDPMRQRFSEIKAHSRLPYLVIS 415
Canis_lupus_familiaris EFGPAEFIPFHLITYRPOQFTFC--DSNNSVDSSASDSDPMRQRFSEIKAHSRLPYLIIS 415
Felis_catus       EFGPAEFIPFHLITYRPOQLTFC--DSNNSVDSTASDSDPMRQRFSEIKAHSRLPYLIIS 414
Equus_caballus    EFGPAEFIPHLPLITYRPOQFTFC--DSNNSVDSSASDSDPMRQRFSEIKAHSRLPYLIIS 415
Bos_taurus        EFGPAEFIPHLPLITYRPOQFTFC--DSNNSVDSSASDSDPMRQRFSEIKAHSRLPYLIIS 415
Rhinatrema_bivittatum EFGPAEFIPHLPLITYRPOQVFKSSDNNCLGSSASEMDALRQRFSEIKAHSRLPYLVIS 417
Rana_temporaria   EFGPAEFIPHLPLITYRPPVPLESHNANDSLGVSASQDLMRQRFSEIKAHSRLPYLVIS 416
.....370.....380.....390.....400.....410.....420

```

```

**:*:*.*** . *      :***** :***: . :      ::.. :.* **: * :*****: .*:.* **:.*
Pavo_muticus      DGFMITVLRFHNNVSPVGFLRSLLLDSMORLENIRRNLMNSQSKGRHLCRLSLLSLKDSL 475
Pavo_cristatus    DGFMITVLRFHNNVSPVGFLRSLLLDSMORLENIRRNLMNSQSKGRHLCRLSLLSLKDSL 475
Gallus_gallus     DGFMITVLRFHNNVSPVGFLRSLLLDSMORLENIRRNLMNSQSKGRHLCRLSLLSLKDSL 475
Chelonia_mydas    DGYMVTVLRFDNLSPSVHMRSLLLDSQORLEKIHSQSLVLPKSKGKRLQLRSLSSILKASL 475
Mus_musculus      DGYMVTTLRFLDNQSPTMLMRSLLLDSQORLEKAYQSMMLSEPKDKGLNFRSLDSLRSLL 475
Rattus_norvegicus DGYMVTTLRFLDNQSPTMLVRALLDSQORLEKAYQSMMLSKPKKGLNFRSLDSLRSLL 475
Homo_sapiens      DGYMVTTLRFLDSLSPSVHMRSLLLDSQORLEKIYQSVILSKPKGKGLNFRSLDSLRSLL 475
Pan_troglodytes   DGYMVTTLRFLDSLSPSVHMRSLLLDSQORLEKIYQSVILSKPKGKGLNFRSLDSLRSLL 475
Macaca_mulatta    DGYMVTTLRFLDSLSPSVHMRSLLLDSQORLEKIYQSVILSKPKGKGLNFRSLDSLRSLL 474
Callithrix_jacchus DGYMVTTLRFLDNLSPSVHMRSLLLDSQORLEKIYQSVILSKPKGKGLNFRSLDSLRSLL 475
Canis_lupus_familiaris DGYMVTTLRFVDNLSPSVLMRSLLLDSQORLEKTYQSMILSKPKGKGLNFRSLDSLRSLL 475
Felis_catus       DGYMVTTLRFLDNLSPSVLMRSLLLDSQORLEKMYQSMVLSPKPKGKGLNFRSLDSLRSLL 474
Equus_caballus    DGYMVTTLRFLGNLSPSVLMRSLLLDSQORLEKTYQSVVMSKPKGKGLNFRSLDSLRSLL 475
Bos_taurus        DGYMVTTLRFLDNLSPSVLMRSLLLDSQORLEKTYQSVVMSKPKGKGLNFRSLDSLRSLL 475
Rhinatrema_bivittatum DGYMVTALRFLDNFSPVLYMKSLLLDSDORLEKVSQILPVSKPKGKGLNFRSLDSLRSLL 477
Rana_temporaria   DGYMVTALRFAQNMSPYHFMKSLLLDSDORLEHLRQSLQLGKSKKNGIKLRSLLSLKATL 476
.....430.....440.....450.....460.....470.....480

```

```

:      :      :.* **      :      :      :.* **      :
Pavo_muticus      LKHTQNHTSTFFNVPKFL-EADTTEMNQKTTDLLDYE-DESDHEKLFHNSSSSLFSQKVL 533
Pavo_cristatus    LKHTQNHTSTFFNVPKFL-EADTTEMNQKTTDLLDYE-DESDHEKLFHNSSSSLFSQKVL 533
Gallus_gallus     LKHTQNHTSTFFNVPKFL-EEDTTEINQKTTDLLDYE-DESDHEKLFHNSSSSLFSQKVL 533
Chelonia_mydas    LKQNRNQNSTLSTIPKFLQEEETAELSERAADLQDYE-EESDDDKQFQNNSSSTFCQGN 534
Mus_musculus      LKHQGNKSSVHCTVPRFLQAEETMKLNETTD-FQDFEGEETNEVEQFVNNSSSFCNOKKD 534
Rattus_norvegicus LKRHGKSSVQCTVPRFLQAEETVKLSETTD-FQDFEGEETNEVEQFVNNSSSFCNOKKD 534
Homo_sapiens      LEHQGNNESSADFTVPKFLQAEETIN--ENAAFDQDFEAEETNEGRHFPDNLCPFWNKRDD 533
Pan_troglodytes   LEHQGNNESSADFTVPKFLQAEETIN--ENAAFDQDFEAEETNEGRHFPDNLCPFWNKRDD 533
Macaca_mulatta    LKHQGNNESSADFTVPKFLQAEETINLNTADFDQDFEAEETNKDRHFPDNLCPFWNKRDD 534
Callithrix_jacchus LKHQGNNESSADFTVPKFLQAEETINLNTADFDQDFEAEETNKDRHFPDNLCPFWNKRDD 535
Canis_lupus_familiaris LKHQGNQSLADSTVPRFLQAEETMKLSEKTDADFDQDFEAEETNEGRHFPDNLCPFWNKRDD 535
Felis_catus       LKHQGNKSVADSTVPRFLQAEETMKLSEKTDADFDQDFEAEETNEGRHFPDNLCPFWNKRDD 534
Equus_caballus    LKHQGNNESSADSTLPRFLQAEETMKLSEKTDADFDQDFEAEETNEGRHFPDNLCPFWNKRDD 535
Bos_taurus        LKHQGNNESSADSTLPRFLQAEETMKLSEKTDADFDQDFEAEETNEGRHFPDNLCPFWNKRDD 535
Rhinatrema_bivittatum LKDHNRQSAHSTPLPRFLQAEETMKLSEKTDADFDQDFEAEETNEGRHFPDNLCPFWNKRDD 536
Rana_temporaria   SKDADKPPSVPTVPSFLQDEQICG--HLERILQDDDEESDDQELK-----YMAPSD 528
.....490.....500.....510.....520.....530.....540

```


CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/CPLANE11.ppe Feb 1 11:47:44 2022

Page 4 of 21

```

      .  .*: :*****: **      *  ::: ** ** *:  .: *
Pavo_muticus      SFV GKADQGRIEFASMFDTIHAKDNT EEKEKLPVELSSVQRSLLTAWQIGISK-NIEERD 592
Pavo_cristatus    SFV GKADQGRIEFASMFDTIHAKDNT EEKEKLPVELSSVQRSLLTAWQIGISK-NIEERD 592
Gallus_gallus     SFV DKADQGHIEFASMFDTIHAKDNT EEKDKLPVELSSVQRSLLTAWQIGISK-NIEERD 592
Chelonia_mydas    SFFSRADQGLEFASMFDTIVHAKDDTD AKDDL SMELNSIQKNLLAAWIGIGISK-NVQEKD 593
Mus_musculus      LPFDIVKEGRLEFASMFDTIVHAKDASKETDRNTAELHRIQKTLAAWTIGISK-NVTEKK 593
Rattus_norvegicus ILFN TAKEGRLEFASMFDTIHAKDDSKETDRITIAELHCTIQKLLAAWTIGVSK-NVAEKK 593
Homo_sapiens      VLCSSMKEGRLEFASMFDTIHAKDDSEETDRITITELHSIQKSLAAWTIGISK-TVTEKN 592
Pan_troglodytes   VLCSSMKEGRLEFASMFDTIHAKDDSEETDRITITELHSIQKSLAAWTIGISK-TVTEKN 592
Macaca_mulatta    GLCSTMKEGRLEFASMFDTIHAKDASEETDRITITELHSIQKSLAAWTIGISK-TVTEKN 593
Callithrix_jacchus LLCS SIKEGRLEFASMFDTIHAKDANEETDRITITVLHSIQKNLLAAWTIGISK-TVTEKN 594
Canis_lupus_familiaris PLFSSVKEGRLEFASMFDTIHAKDNVKETDKTITELHSVQKNLLAAWTIGISK-NVMEKN 594
Felis_catus       PLFSSNVKEGRLEFASMFDTIHAEDNTEETDRITITELHSVQKNLLAAWSIGISK-NVTEKN 593
Equus_caballus    PLFSSAKEGRLEFASMFDTIHAKGNNEETDRITIAELQSVQKNLLAAWAIGISK-NVTEKN 594
Bos_taurus        LLFSSVEEGRLEFASMFDTIVHAKDNT EETDKTVIELHSVQKNLLAAWTIGISK-NVAEKN 594
Rhinatrema_bivittatum CSYGGAEQGRLEFASMFDTIHA IQDVEGKEDDLTELNCIQKNLLMAWAIGILLGNIEEKR 596
Rana_temporaria   STFGRAEQGRLEFASMFDTIHASDHSMVKGDM LHELLHTRKTLTAWTIGVTMRNIAELD 588
      .....550.....560.....570.....580.....590.....600

```

```

      :*: * : : * : :*: . . . . * . . . :. : : ** :*.
Pavo_muticus      TFLNYTVSCITHFFNILQFVECSSLNQDAFLNKS VKNSHWIHCVLKYFQQLSVLHWHSR 652
Pavo_cristatus    TFLNYTVSCITHFFNILQFVECSSLNQDAFLNKS VKNSHWIHCVLKYFQQLSVLHWHSR 652
Gallus_gallus     TFLNYTISCITHYFNILQFVECSSLNQDAFLNKS VKNSHWIHCVLKYFQLSVLHWHSR 652
Chelonia_mydas    MLLNYTVGCITHLFNILQFSKSSLLNHD AFLNQSEKYNLWMHCILKHFQQLTVLYWDVR 653
Mus_musculus      LMLNYTILCITHFFYILQFIKCPVPKFDLFLNKS LKRN AWVLCV FQLFHQCLSVHYWDMR 653
Rattus_norvegicus LMLNYTVLCITHFFYILQFIKCPPKFDLFLNKS LKHN TWVLCIFQLFHQCLSTHYWDMR 653
Homo_sapiens      LMLNYIVVCITHFFYILQFIKCPFPKLDLVL SKSSRHNAWILCIFQLFHQCLSIHYWDIR 652
Pan_troglodytes   LMLNYIVVCITHFFYILQFIKCPFPKLDLVL SKSSRHNAWILCIFQLFHQCLSIHYWDIR 652
Macaca_mulatta    LMLNYIVVCITHFFYILQFIKCPFPKLDLFLN KS SRHNAWILCIFQLFHQCLSIHYWDIR 653
Callithrix_jacchus LMLNYIVVCITHFFYILQFIKCPFPKFDLFLN ESSRHNAWIFCIFQLFHQCLSIHYWDIR 654
Canis_lupus_familiaris VMLNYTVVCITHFFYILQFIKCPFPKLDIFLNKSTGQNAWVLCIFQLFHQCLSIQYWDMR 654
Felis_catus       LMLNYAVVCITHFFYILQFIRCFFPKLDPFSSKSTRHNAWVLCIFQLFHQCLSIQYWDMR 653
Equus_caballus    LMLNYTVVCITHFFYILQFIKCPFPKLGLFLNKS PRHNAWILCIFE LFHQCLSIQYWDMR 654
Bos_taurus        LMLNYTVVCITHFFYILQFIKCPFPKLDLFLN KS SKHNTWVLCIFQLFHQCLSIQYWDMR 654
Rhinatrema_bivittatum ALLNYTIGYFMHLIYILQFTRHHLRKQDRLLKTS -YSSPWVQRIFQLFQCLWLHWDVT 655
Rana_temporaria   SLLQYTVGCLTHFLSLLQSPKCPMLKS NKPSKASGRGDALWASYFDVLQCLTALYWDVL 648
      .....610.....620.....630.....640.....650.....660

```

```

      *:: :*: .:***: * . . :*. * : * *: *
Pavo_muticus      AG-MTGHVAKLT LQTLKLM LVQKD-QLFSKNLLACFCLLKMVSHTLSSSCIPQHENLFA 710
Pavo_cristatus    AG-MTGHVAKLT LQTLKLM LVQKD-QLFSKNLLACFCLLKMVSHTLSSSCIPQHENLFA 710
Gallus_gallus     AG-MTGHVAKLT LQTLKLM LVQKD-QLFSKNLLACFCLLKMVSHTLSSSTCIPQYENLFA 710
Chelonia_mydas    DRQTVGHLVKLT SQTVKLM LIQLQD-QLFSEYLLGCFCLLMVAHSLNGKFTPCYEIMSA 712
Mus_musculus      YRQNMGHLIRLTANTVKLLLTQRQEHGSF SERLLACL SLLRTVTVHLNGTCSLOPEAVPA 713
Rattus_norvegicus YRQNVGHLKLTANTVKLLLTQQRKHGLFSEKLLACL SLLRTVTDCLNGTCSLOPEAAPA 713
Homo_sapiens      YKQDVGHLIKLT SNTVKLLLTQQQKGOLFSEKLLACFYLLKMVADNLNGVYILOPEVISA 712
Pan_troglodytes   YKQDVGHLIKLT SNTIKLLLTQQQKGOLFSEKLLACFYLLKMVADNLNGVYILOPEVISA 712
Macaca_mulatta    YKQDVGHLIKLT SNTIKLLLTQQQKGOLFSEKLLACFYLLRMVADNLNGVYSLOPEVISA 713
Callithrix_jacchus YKQDVGHLIKLT SNTIKLLLTQQQKGOLFSEKLLACFYLLRMVADNLNGVYNLOPEVISA 714
Canis_lupus_familiaris YKQDVGHLVKLT SNTIKLLLTQQQQGOLFSEKLLASFHLLKMVADNLNAIYGLQPEVISA 714
Felis_catus       YKQDVGHLVKLT SNTIKLLLTQQQQGOLFSEKLLACFYHLLKMVAANLNGIYILOPEVIST 713
Equus_caballus    YKQDVGHLVKLT SNTIKLLLTQQQQGOLFSEKLLACFYHLLRMVADNLNDTYNLOPEITSA 714
Bos_taurus        YKQDVGHLVKLT SNTIKLLLTQQQQGOLFSEKLLACFYHLLRMVADHLNGVYSLOPEVISA 714
Rhinatrema_bivittatum HRQAIGYMIKLTSGTVKMMLAQQEE-OLYSRTLTFCLLTMVSHCLNIYINLPFEIIPG 714
Rana_temporaria   PROAFGHMIKLSAEVIKLI L VQGGQ--LYSKSLVEGFYWLKMVSQNLATIVGLRFESVPA 706
      .....670.....680.....690.....700.....710.....720

```

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/CPLANE11.ppe Feb 1 11:47:44 2022

Page 5 of 21

```

      . .      * .  *::      . ::  * . . . . : **  *::*
Pavo_muticus      SPGANSLVLEDSFIVPIFLFLDESATHEFS SLKSLRLRLPQALNCDEKTEKRLIVLWQFL 770
Pavo_cristatus    SPGANSLVLEDSFIVPIFLFLDESATHEFS SLKSLRLRLPQALNCDEKTEKRLIVLWQFL 770
Gallus_gallus     SPGVNSLVLEDSFIVPIFLFLDESATHEFS SLKSLRLRLPQALNCDEKTEKRLIVLWRFL 770
Chelonia_mydas    SSDVNTAIELDSLIVPIFOVLDGSSAOKFRSLNSLLKIPPOAVKLNEKPEENRLMILWRLL 772
Mus_musculus      AADESRPAELDSLMPVIFQA-----SKENWPDWSSLKIYPOVTNLVQKPGHRLIALWRLL 768
Rattus_norvegicus AADGSRPAELDSLMPVIFQS-----SKENWSDWSSLKIYPOVTNLVQKPGHRLIALWRLL 768
Homo_sapiens      SADGSKITAQDSLVPVIFQMFQDSGFQKNWSWNSFFKIHPOVVNPVQOPGHRLLILWRIL 772
Pan_troglodytes   SADGSKITAQDSLVPVIFQMFQDSGFQKNWSWNSFFKIHPOVVNPVQOPGHRLLILWRIL 772
Macaca_mulatta    SADGSKITAQDSLMPVIFQMFQDSGSQENWSWNSFFKIHPOVVNLVQOPGHRRLRILWRIL 773
Callithrix_jacchus SADGSKITDQDSLVPVIFQMFQDRGSGQENWSWNSFFKIHPOVVNPVQOPGHRLLIVLWRVL 774
Canis_lupus_familiaris STDGSRTANQDKLVVPIFQMFQDSGSQEKWSWNSFFKICPOVVNLAAQOPGHRLLIVLWRVL 774
Felis_catus       SVDGSRTANQDKLVVPIFQMFQDSGSQENWSWNSFFKIHPOVVNLAAQOPGHRLLIVLWRVL 773
Equus_caballus    LTDGSRTANQDSFVVPVIFQMFQDSGSRGNWSWNSAFKICPOVVNLVQOPGHRLLIALWRIL 774
Bos_taurus        SADGSRRAKQDSLVLPIFQMFQDSSEWENWSWNSFFKIHPOVNLNFVQOPGHRLLIVLWRIL 774
Rhinatrema_bivittatum S-DVNCTACLDLVLVPVLQALDSNNVORS-SVNSLFKLPPRTVNLSPKENRLTVLWKLL 772
Rana_temporaria   GYSKGDVAHLDIVKTIPEAL-----IQPFKGS CNVFEKPPNSVTNSRMSEKRLAVQWRLL 762
      .....730.....740.....750.....760.....770.....780

```

```

      *...: * . * .      * . :  ** *:: ** :  :.  : .
Pavo_muticus      YRRVVCYWIQLNKKVYKN-----TEETVVSLLLSHIQATLQSSGVILEQHFKINS 821
Pavo_cristatus    YRRVVCYWIQLNKKVYKN-----TEETVVSLLLSHIQATLQSSGVILEQHFKINS 821
Gallus_gallus     YKRVVSYWIQLNKNAYKN-----TEETVVSLLLSHIQATLQSSGVILLEQHFKINS 821
Chelonia_mydas    YKQVLWYRTQLNRKISKDGKPLTEMKIAHEESIVAQLLGHIAVLQSSGETLEOTQKINS 832
Mus_musculus      YKKTLLWYQAQLSQRTPDGRRLTEN-IRHEVSVKTLTLLCHVQTNLQAGDSLNOALELTP 827
Rattus_norvegicus YKKTLLWYQAQLSRRIPDGRRLTEN-ITHEVSLVKTLTLLCHVQANLQVAGDSLNOALELTA 827
Homo_sapiens      YKKTLLWYQAQLNRRVPEADSQLTEK-MTHEASTVKSLTLLCHLQANLQSTGDCINQTLLELKS 831
Pan_troglodytes   YKKTLLWYQAQLNRRVPEADSQLTER-MTNEASTVKSLTLLCHLQANLQSTGDCINQTLLELKS 831
Macaca_mulatta    YKKTLLWYQAQLNRRVPEADSQLTEK-MTHEASTVKSLTLLCHLQANLQSTGDCINQTLLELKS 832
Callithrix_jacchus YKKTLLWYQAQLNRRVPEGDSQLTEK-MTHEASTVKSLTLLCHLQANLQTTGDHLNQTLLELKS 833
Canis_lupus_familiaris YKKTLLWYQTQLSQRLPEDDRQLMEK-MAQEASTVKALLCHIQANLQTAGVHVNOGLELKS 833
Felis_catus       YNKTLLWYQTQLNQRLPDSDRQLTEK-MTQEASTVKALLCHIQANLQTAGIRLNQALELKS 832
Equus_caballus    YKKTLLWYQTQLSRRVPEDDRPFNEK-MTHEASAVKSLTLLCHIQSNLQEAGVCVNRTLELKP 833
Bos_taurus        YKKTLLWYQMLQSLRVPEDGVOLTEK-MTRETSAVKSLTLLCHIQAELOTAGVRLNQLLELKS 833
Rhinatrema_bivittatum YKQTLWYRSELFNFYKNDKPFIELKIAHEESLVVPLLCHIQSKLQSARESLDPTLNLM 832
Rana_temporaria   YNQTLLWYQTRLRKQISLNRMTQLSPRVQSEKAIVSLTLLCHIQTELOSANQHLSQSLCLLP 822
      .....790.....800.....810.....820.....830.....840

```

```

      : *** **::** ::  * :  * *  : * :  : ** ****::: : ** *** :.***
Pavo_muticus      IAGEEKFLLGSYKGSVDVWKRCLCEIKAKGGKRACFLQSRYYLAILFCHLYHYNLCEAAG 881
Pavo_cristatus    IAGEEKFLLGSYKGSVDVWKRCLCEIKAKGGKRACFLQSRYYLAILFCHLYHYNLCEAAG 881
Gallus_gallus     IAGEEKFLLGSYRESVDVWKRCLCEIKAKGGRRACFLQSRYYLAILFCHLYHYNLCEAAG 881
Chelonia_mydas    VIGEEQFLLGSYEESVNLWKKALQETKAKGEKKTQFLQTRYLAILYCHLYHYNLSEAAG 892
Mus_musculus      ISGEECFLLASYEKSVCWLKKALQETQEKGGRRTCFLQRLYYLSLLYCHLYCYNLNDAG 887
Rattus_norvegicus LSGEECFLLASYEKSVCWLKKALQETQEKGGRRMRFLQRLYYLSLLYCHLYCYNLNDAG 887
Homo_sapiens      INGEECFLLGSYKESVQLWKKALQEIIEKGGRRTYFLQIRYYLSLLYCHLYSYNLNDAG 891
Pan_troglodytes   INGEECFLLGSYKESVQLWKKALQEIIEKGGRRTYFLQIRYYLSLLYCHLYSYNLNDAG 891
Macaca_mulatta    INGEECFLLGSYKESVQLWKKALQEIIEKGGRRTYFLQIRYYLSLLYCHLYSYNLNDAG 892
Callithrix_jacchus IDGEECFLLGSYKESVQLWKDALQEIIEKGGRRMYLLQIRYYLSVLYCHLYSYNLNDAG 893
Canis_lupus_familiaris INGEEYFLLGSYKESVQLWKKALQETQEKGGRRSCFLQMRYYLSLLYCYLYSYNLNDAG 893
Felis_catus       INGEECFLLGSYKESVLMWKKALQETQEKGGRRTCFLQIRYYLSLFYCYIYSYNLNDAG 892
Equus_caballus    INGEECFLLGSYKESVQLWKKALQETQEKGGRRTCFLQIRYYLSLLYCYLYSYNLNDAG 893
Bos_taurus        INGEECFLLGSYKESVQIWKKALQETQEKGGRRTCFLQIRYYLSLLYCHLYNYNLNDAG 893
Rhinatrema_bivittatum VTGEEHFLLGSYTMAMQTNWALQEDAAKGGRRAGFLQTRYLAILYGHLYHYNLNNGQG 892
Rana_temporaria   VTGEEQFLFGSYKESVEFVKRELLEASLQGSRAGLLQTRYLAILYCHLYHYNLNDAG 882
      .....850.....860.....870.....880.....890.....900

```

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/CPLANE11p1 Feb 1 11:47:44 2022

Page 6 of 21

```

:::*. * * : . : : :*: *: :*.*****
Pavo_muticus      FCDHLVGEILRRSLSVS-QMENFSDTKYSQHELWMITNVHTEAMAVIQSMARFMAAYF 940
Pavo_cristatus    FCDHLVGEILRRSLSVS-QMENFSDTKYSQHELWMITNVHTEAMAVIQSMARFMAAYF 940
Gallus_gallus     LCDHLVGEILRRSLSVS-QMENFSDTKYSQHELWMITNVHTEAMAVIRSMARFMAAYF 940
Chelonia_mydas    LSDHLVREILRGSRLSVR-OREDSDAEHSQYELWMIREVHPEAAVAVIRSMARFMAAYF 951
Mus_musculus      LCDHLVRELLRSRSQLPVR-ESQDCSD-----CEIAVTGNVHPEAALRVVQCMARFMAAYF 941
Rattus_norvegicus LCDHLVREILSYSQLPVQ-ERRDYS-----PEAVTRNVHPEAAVRVVQCMARFMAAYF 941
Homo_sapiens      LCDQLAREILRWSQLPVK-ENKDFSGAAKSHFECGMVGGVHPEAAVRVVQSMARFMAAYF 950
Pan_troglodytes   LCDQLAREILRWSQLPVK-ENKDFSGAAKSHFECGMVGDVHPEAAVRVVQSMARFMAAYF 950
Macaca_mulatta    LCDQLAREILRWSQLPVK-ENKDFSGAAKSHFECGMAGGVHPEAAVRVQSMARFMAAYF 951
Callithrix_jacchus LCDHLAREILRWSQLPVK-ENKEFSGAVKSHFECGMDGVHPEAAVRVVQSMARFMAAYF 952
Canis_lupus_familiaris LCDQLVREILRGSRLPVK-ENEDCSVPEKPPCEFGMTRVRPEAAVRVQSMARFMAAYF 952
Felis_catus       MCDQLVREILKWSHLPVK-ENEDCSVPEKSHSGFGMTRSAHPEAAVKVQSMARFMAAYF 951
Equus_caballus    LCDQLVREILRWSYLPVK-ENEDCSVPEKSHCESGVTAGARPEAAVRVVQSMARFMAAYF 952
Bos_taurus        LCDQLVREILRWSHLPVK-ENEDCSVPEKSPCESGVTSVHPEAAVRVVQSMARFMAAYF 952
Rhinatrema_bivittatum LCDHLVRKTLKLSPVSVDTQQEDFPDSEYAEYEWRIIRDVHSEALAVVQAMGRFMAAYF 952
Rana_temporaria   LCDQLVKVLLIRSDLLAETEHGDGEES-----DERLLEKIHPEAALAVIQSMGRFMAAYF 936
.....910.....920.....930.....940.....950.....960

```

```

*: * :*: * : * *: : *::*: *: :*:** .**.*::*:
Pavo_muticus      TNQLLYIFPPHNVDILHPLHIKQDISPRVIPLQHHLVTRAVRDQNLSSVWTVVEYALDLFF 1000
Pavo_cristatus    TNQLLYIFPPHNVDILHPLHIKQDISPRVIPLQHHLVTRAVRDQNLSSVWTVVEYALDLFF 1000
Gallus_gallus     TNQLLYIFPPHSVDILHPLHIKPDVSPRIIPLQHLVTRAVRDQNLSSVWTVVEYALDLFF 1000
Chelonia_mydas    TNQLLYILPPHKVDILPPLHINQDRFPVSVLSLQHSVVASAVRDQKLSVWTALEYALDLLF 1011
Mus_musculus      TNEPLFILPPHSVSVLPPLHVKTEHSRLIPLQHSKVASVIRDQNLSSNVWTVVEYTLLELF 1001
Rattus_norvegicus TNEPLFILPPHSVNVLPPLHVKTEHSVRLIPLQHSKVASIVRDQNLSSNVWTVVEYTLLELF 1001
Homo_sapiens      TNQQLCILPPHHVNVLPPLHIKTEQSFRLIPLQHSKVASVVRDQNLSSNVWTVVEYALELFF 1010
Pan_troglodytes   TNQQLCILPPHHVNVLPPLHIKTEQSFRLIPLQHSKVASVVRDQNLSSNVWTVVEYALELFF 1010
Macaca_mulatta    TNQQLCILPPHHVNVLPPLHIKTEQSFRLIPLQHSKVASVVRDQNLSSNVWTVVEYALELFF 1011
Callithrix_jacchus TNQQLCILPPHHVNVLPPLHIKTEQSFRLIPLQHSKVASVVRDQKLSNVWTVVEYALELFF 1012
Canis_lupus_familiaris TNQPLCILPPHNVNLPPLHVETEQLRLIPLQHSMVASVVRDQNLSDVWTVVEYAFELLL 1012
Felis_catus       TNQPLCILPPHNVNLPPLHTKTEQSLRLIPLQHSKVASVVRDQNLSSNVWTVVEYALELFF 1011
Equus_caballus    ANQLLCILPPHNVNLPPLHIKTEQPLRLIPLQHSKVASAVRDQNLSSNVWTVVEYALELFF 1012
Bos_taurus        TNQLCILPPHSVNVLPPLHIKTEQFRLIPLQHSKVASAVREQLNSDVWTVVEYALELFF 1012
Rhinatrema_bivittatum TNQLLYIFPPHNIDILPPLYIAPDELPRVPLQHSMVARIIRDQNLSCAWTVVEYALDLLL 1012
Rana_temporaria   TNQLLYVFPFPPHNVCVLAPLHIVIDRFPRVVTLOHSIVASAVRDQNLSSVWTVVEYALDLLL 996
.....970.....980.....990.....1000.....1010.....1020

```

```

:***.***. :. :.***** *: :*: : : :
Pavo_muticus      VGGLIPEAVWLTHRLGDWKLVSIGVAYTLYCNSDEFRAVACYAFRLKITEHHPLPLSL 1060
Pavo_cristatus    VGGLIPEAVWLTHRLGDWKLVSIGVAYTLYCNSDEFRAVACYAFRLKITEHHPLPLSL 1060
Gallus_gallus     VGGLMPEAVWLTHRLGDWKLVSIGVAYALYCNSDEFTRTVACYASRLKITEHHPLPLNL 1060
Chelonia_mydas    VGGLIPEAVWLAHKLGDWKMSVSVIGVAYNLYCSCGGDFLRSEK-----TELHPLPLNL 1063
Mus_musculus      IGGLIPEAVWMAHKLGDWKTSVSVIGVAYQVFCCKHDCNFAFSKK-----KGMPLPLNM 1053
Rattus_norvegicus IGGLIPEAVWMAHKLGDWKTSVSVIGVAFQAFCKRDCNFMWSKK-----KGMPLPLNM 1053
Homo_sapiens      IGGLVPEAVWLAYKLGDWKTSVSVIGVAFQFCKRDSNFMRSKK-----KSLNPLPLRM 1062
Pan_troglodytes   IGGLVPEAVWLAYKLGDWKTSVSVIGVAFQFCKHDSNFMRSKK-----KSLNPLPLHM 1062
Macaca_mulatta    IGGLVPEAVWLAYKLGDWKTSASIGVAFQFCKRDSNFMRSKK-----KSLNPLPLHM 1063
Callithrix_jacchus IGGLVPEAVWLTHKLGDWKTSVSVIGVAFQFCKHDSNFMRSKK-----KSRNPLPLNM 1064
Canis_lupus_familiaris IGGLVPEAVWLAHKLGDWKTSVSVIGVAFQFCKHSHSFIRTKK-----MSLNPLPINL 1064
Felis_catus       IGGLVPEAVWLAHKLGDWKTSVSVIGVAFQFCKHDSNFMRSKK-----KGLNPLPINM 1063
Equus_caballus    IGGLVPEAVWLAHKLGDWKTSVSVIGVAFQFCKHDSNFMRSKK-----KDLNPLPLNM 1064
Bos_taurus        IGGLVPEAVWLAHKLGDWKTSVSVGVAFQFCKHGSKFTRSK-----KSLNPLPLNM 1064
Rhinatrema_bivittatum IGGLFPEAVWLAHKLGDWKMSVSMGIAFNLYCQNDGLSSLKT-----ELHLPLKL 1063
Rana_temporaria   IGGLIPEAAWLANNLGDWKMSVSMAYVSLHLKSIPLDESKEKLP-----SMPLYL 1046
.....1030.....1040.....1050.....1060.....1070.....1080

```


File: /media/morpheus/disk1/fst/pep_msa/CPLANE1.pse **Date: Feb 1 11:47:44 2022**
Page 7 of 21

[illegible]

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/CPLANE11.ppe Feb 1 11:47:44 2022

Page 8 of 21

```

**.*.: * .. * * :* ***** *:.*:** .** :* *
Pavo_muticus      LLRYCNFHTAFWSESTSFGRDRLDDISCKILGWLFRELCAWFMFHVRERLSDSCRRYQAA 1300
Pavo_cristatus    LLRYCNFHTAFWSESTSFGRDRLDDISCKILGWLFRELCAWFMFHVRERLSDSCRRYQAA 1300
Gallus_gallus     LLRYCNFHTAFWSESTSSGDHQLDDISCKILGWLFRELCAWFMFHVRERLSDSCRRYQAA 1300
Chelonia_mydas    LLHYSKFSSTIFFRSASS-GDHCFFDDISCKTIGCFRELCAWMLHVRERLSDSCRCYQTA 1300
Mus_musculus      LLNYCKGGIAFFRPGAT-GDHTLDDEVSIKALGCFRELCAWMLHVRDKLSYTCROYQKA 1290
Rattus_norvegicus LLNYCKGGIAFFRPGAA-GDHKLDEVSIKALGCFRELCAWMLHIRDKLSYTCROYQKA 1290
Homo_sapiens      LLNYCKGGIAFFRPGAA-GDHKLDEVSIKALGCFRELCAWMLHVRDKLSYSCROYQKA 1299
Pan_troglodytes   LLNYCKGGIAFFRPGAA-GDHKLDEVSIKALGCFRELCAWMLHVRDKLSYSCROYQKA 1299
Macaca_mulatta    LLNYCKGGIVFFRPGAA-GDHKLDEVSIKALGCFRELCAWMLHVRDKLSLSCROYQKA 1300
Callithrix_jacchus LLNYCKGGITFFRPGAA-GDHKLDEVSIKALGCFRELCAWMLHVRDKLSYNCROYQKA 1301
Canis_lupus_familiaris LLNYCKGGVAFRRPGAV-GDHKLDEVSVKALGCFRELCAWMLHIRDKLSYNCROYQKA 1301
Felis_catus       LLNYCKGGVAFRRPGAT-GDSKLDEVSIKALGCFRELCAWMLHVRDKLSYSCROYQKA 1300
Equus_caballus    LLNYCKGGVAFRRPGAT-GDYKLDEVSIKALGCFRELCAWMLHIRDKLSYSCROYQKA 1301
Bos_taurus        LLNYCKGGVAFRRPGAA-GDRKLDEASIKALGCFRELCAWMLHVRDKLSLSCROYQKA 1301
Rhinatrema_bivittatum LLKYAEGNAVFFRPGPG-GDHQLDEVSCRVIGSFRELCAWMLHVRERLSDSCRRFOIA 1300
Rana_temporaria   LLNYANGRTVFLKPGAG-----GDFVSCSVVGCFFRELCAWMLHVRERLSDSCRRKYQKA 1279
.....1270.....1280.....1290.....1300.....1310.....1320

```

```

*:. * :* . ** :* *** ***** *. *
Pavo_muticus      RENASSHKD-----LKKNEYDGSIVVEHCLNAAEWACRMLPFCRFRMN 1341
Pavo_cristatus    RENASSHKD-----LKKNEYDGSIVVEHCLNAAEWACRMLPFCRFRMN 1341
Gallus_gallus     RENASSHKD-----LKKNEYDGSIVVEHCLNAAEWACRMLPFCRFRMN 1341
Chelonia_mydas    RESVGNQKD-----CKKAEYDASIVVEHCLNAAEWACRMLPFCRFRMN 1341
Mus_musculus      RENTKIEK-----DLEVGFDSCVVEHCFHALEWACRMLPFSRFFN 1330
Rattus_norvegicus RENTKIEK-----DLEVEFDSCVVEHCFHALEWACRMLPFSRFFN 1330
Homo_sapiens      RENVKGEK-----DLEVEFDSCMIEHCLSAVEWAYRMLPFSRFFN 1339
Pan_troglodytes   RENVKGEK-----DLEVEFDSCMIEHCLSAVEWAYRMLPFSRFFN 1339
Macaca_mulatta    RENVKGEK-----DLEVEFDSCMIEHCLSAVEWAYRMLPFSRFFN 1340
Callithrix_jacchus RENVKGEK-----DLKVEFDSCMVEHCLSAVEWAYRMLPFSRFFN 1341
Canis_lupus_familiaris RENVEGKK-----DLEVEFDSCMVEHCLSAVEWAYRMLPFSRFSN 1341
Felis_catus       RENVEAKK-----DVEVEFDSCMVEHCLSAVEWAYRMLPFSRFSN 1340
Equus_caballus    RENVEGRKVFTCTRVKMSKCSLGNHCLALEVEFDSCVVEHCLGAVEWAYRMLPFSRFSN 1361
Bos_taurus        RENVEEKK-----DLEAKFDPCLVVEHCLSAVEWAYRMLPFSRFSN 1341
Rhinatrema_bivittatum RDNIEENRKD-----CKGALDYDASMVEHCLNAAEWACRMLPFCRFRMN 1342
Rana_temporaria   RDSGKLFKS-----SDEYDSCVTEHCFEALEWACRMLPFTTRVAN 1318
.....1330.....1340.....1350.....1360.....1370.....1380

```

```

***:.*:.*:.*:.*:.*:.*:.*:.*:.*:.*:.*:.*:.*:.*:.*:.*:.*:.*:.*:.*:.*:.*:
Pavo_muticus      AEELIQDIILSLLGELPPPIKVAEIFVKAFNPEDVRVPLRDKYHGLQQLRHCTVOGPE 1401
Pavo_cristatus    AEELIQDIILSLLGELPPPIKVAEIFVKAFNPEDVRVPLRDKYHGLQQLRHCTVOGPE 1401
Gallus_gallus     VEELIQDVILSLLGELPPVKKVAEIFVKAFNPEDVRVPLRDKYHGLQQLRFRHCTVOGPE 1401
Chelonia_mydas    VEELVQDIILSLVGLPPIRKVAEILVKAFNPSEDVRVPLRDKYHALQQLRHCTVIRGSK 1401
Mus_musculus      MEELIQDIILSLIGELPPPIRKVAEIFVKAFNPPEAIRVPLREKYHSLQQLKHGVVKGPO 1390
Rattus_norvegicus MEELIQDIILSLIGELPPPIRKVAEIFVKAFNPPEAIRVPLREKYHSLQQLKHGVVKGPO 1390
Homo_sapiens      MEELIQDIILSLIGELPPPIRKVAEIFVKAFNPEDVRVPLRDKYHSLHQLRHCVVKGPO 1399
Pan_troglodytes   MEELIQDIILSLIGELPPPIRKVAEIFVKAFNPEDVRVPLRDKYHSLHQLRHCVVKGPO 1399
Macaca_mulatta    MEELIQDIILSLIGELPPPIRKVAEIFVKAFNPEDVRVPLRDKYHSLHQLRHCVVKGPO 1400
Callithrix_jacchus MEELIQDIILSLIGELPPPIRKVAEIFVKAFPCPEDVRVPLRDKYHSLHQLRHCVVKGPO 1401
Canis_lupus_familiaris IEELIQDLILSLIGELPPPIRKVAEIFVKAFNPEDIRVPLREKYHSLQQLRHCVVKGPO 1401
Felis_catus       IEELIQDLILSLIGELPPPIRKVAEIFVKAFPIPEDIRVPLREKYHCLQQLRHCVVKGPO 1400
Equus_caballus    IEELIQDLLSLIGELPPPIRKVAEIFVKAFNPEDIRVPLREKYHSLQQLRHCVVKGPO 1421
Bos_taurus        IEELIQDLILSLIAELPPPIRKVAEIFVKAFNPEDIRVPLREKYHSLQQLRHCVVKGPO 1401
Rhinatrema_bivittatum IEELVQDIILSLVGLPPIRKVAEILVKAFSPEDVRVPLRDKYHSLQQLRQCTIOGLK 1402
Rana_temporaria   CEELIQDIILSLISELPPVKKVAEFMVKAFSHPDDVRVPLREKFNVSQQLRHSMIKGLE 1378
.....1390.....1400.....1410.....1420.....1430.....1440

```


File: /media/morpheus/disk1/fst/pep_msa/CPLANE1.pse **Date: Feb 1 11:47:44 2022**
Page 9 of 21

	:	: * : *	****	**:**	.*:*:	*****:	****:	:
Pavo_muticus	KALISKTKHMEKAYRKDTQNCNLPVIGAWEFERDDEEYVNFLFELFLSYVLERDLVKYS	D	1580					
Pavo_cristatus	KALISKTKHMEKAYRKDTQNCNLPVIGAWEFERDDEEYVNFLFELFLSYVLERDLVKYS	D	1580					
Gallus_gallus	RALSWKTEGHMEKACRKTQNCNLPVIGAWEFERDDEEYVNFLFELFLSYVLERDLVKYS	D	1580					
Chelonia_mydas	KYLNNWKAHKHEQS--KVLPNQHTLPPVGAWEFERDDDEYVKFLDLFLSYMLERDFN-CSD		1577					
Mus_musculus	KKVSNOKENSORKEDEETPGKEALPVGWVEFERDDDEYISFLFELFLSYILERDLCS	S-D	1562					
Rattus_norvegicus	KKISNOKENPORKEDHETSCKEALPVIGWVEFERDDDEYMNFLELFLSYVLERDLCSR	-D	1563					
Homo_sapiens	RKMCNOKENPTKKEDHEKLSONTLPVIGWVEFERDDDEYIKFLDLFLSYILERDLPYS	R	1571					
Pan_troglodytes	RKMCNOKENPTKKEDHEKLSONTLPVIGWVEFERDDDEYIKFLDLFLSYILERDLPYS	R	1571					
Macaca_mulatta	KKMCNOKENPTKKEDHEKLSONTLPVIGWVEFERDDDEYIKFLDLFLSYILERDLPYS	R	1575					
Callithrix_jacchus	KKMCNOKENPARKEDHEKLSONTLPVIGWVEFERDDDEYIKFLDLFLSYILERDLLNL	R	1575					
Canis_lupus_familiaris	K-ICNOKENLER-KDHEKLLONALPVGWVEFERDDDEYIKFLDLFLSYILERDLLDS	K	1566					
Felis_catus	KKICNOKENLER-KDHEKLLONALPVGWVEFERDDDEYIKFLDLFLSYVLERDLLDS	K	1571					
Equus_caballus	KKICNOKESPE--EDHAKLSNVLPVIGWVEFERDDDEYIKFLDLFLSYVLERDLLGS	K	1594					
Bos_taurus	KKIYNOKENPKRKEDECPELLONALPVGWVEFERDDDEYIKFLELFLSYVLERDLLGS	K	1576					
Rhinatrema_bivittatum	NNDYIKVOHTGKEPSEPKQEHTMPVVGWVEFERDDDEYVSFLFELFLSYVLERDLINS	N	1579					
Rana_temporaria	-----VREKIKGRNEPIENGTPVPKGWVEFECDDEEYINFLDLFLSYLLERDLLHS	T	1540					
	-----1570.....1580.....1590.....1600.....1610.....1620							

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/CPLANE11.ppe Feb 1 11:47:44 2022

Page 10 of 21

```

      :*:****:  *:: **:** **:*:****:  :.  .:****.*:  :
Pavo_muticus      LRIPFLTSFSGLLRKHELNSLFFDIHTTLKRRQAKTRSRSVFRAGSCYTVALTSYNPETV 1640
Pavo_cristatus    LRIPFLTSFSGLLRKHELNSLFFDIHTTLKRRQAKTRSRSVFRAGSCYTVALTSYNPETV 1640
Gallus_gallus     LRIPFLTSFSGLLRKHELNSLFFDIHTTLKRRQAKTRSRSVFRAGSCYTVALTSYNPETV 1640
Chelonia_mydas    PGIPFLTSFSELLREHELHSLFFDVHTTLKRRQGRTNQNVFRAGCCYAVTLASCDKPA 1637
Mus_musculus      PGIPFLTSFSGRLREHELNSLFFDVHTTLKRRQSKTIISENVYFRAGSCFAVTPESQEPENL 1622
Rattus_norvegicus PGIPFLTSFSEHLREHELNSLFFDVHTTLKRRQSKASSDSVYFRAGSCFAVTPESQESNL 1623
Homo_sapiens      ADIPFLTSFSGKLREHELNSLFFDVHTTLKRHQSKTKSQNVFRAGSCFVVAPESYESEKS 1631
Pan_troglodytes   ADIPFLTSFSGHLREHELNSLFFDVHTTLKRHQSKTKSQNVFRAGSCFVVAPESYESEKS 1631
Macaca_mulatta    AGIPFLTSFSGTLREHELNSLFFDVHTTLKRRQSKTKSQNVFRAGSCFVVAPESYESEKS 1635
Callithrix_jacchus AGIPFLTSFSEKLREHELNSLFFDVHTTLKRRQGKTKSRNVFRAGSCFVVAPESYEAESK 1635
Canis_lupus_familiaris PGIPFLTSFSGHLKEHELNSLFFDVHTTLKRRQGKTKSQNIFRAGSCFVVASESYESEKA 1626
Felis_catus       PGIPFLTSFSGHLREYELNSLFFDVHTTLKRRRSKTKSQNVFRAGSCFVVAPELYESEKP 1631
Equus_caballus    PGIPFLTSFSGHLREHELNSLFFDVHTTLKRRQGKTKSQNVFRAGSCFVVAPESHESEKS 1654
Bos_taurus        AGIPFLTSFSGHLRERELNSLFFDVHTTLKRHRSTKSONVFRAGSCFVVAPESDECEKS 1636
Rhinatrema_bivittatum LGIPLLTSTFTEHLQEYELNSLFFDVHSTLKRRQIRTRSONIFRAGCCYSITLPEPYGTEKP 1639
Rana_temporaria   PGVPFLTSFAPHLREHELNSLAFDVHTTLKRKLGRPEIKSVFRAGSCYKVNAEPQNDPAV 1600
.....1630.....1640.....1650.....1660.....1670.....1680

```

```

                                     *****
Pavo_muticus      SVRS-----VNQNVLENPNIVSTVQITEPSVRN-----SIKELK-----EGLFGL 1681
Pavo_cristatus    SVRS-----VNQNVLENPNIVSTVQITEPSVRN-----SIKELK-----EGLFGL 1681
Gallus_gallus     SVHS-----VNQNVLENPNIVSTVKTTEPSVHN-----SIKELK-----EGLFGL 1681
Chelonia_mydas    SLCN-----EKKKYLEN-QISVSVLQPADSLLCD-----SVNGVKKYMGKKGLFGL 1682
Mus_musculus      SSLNSVGARHFESQALSASALGNQSG-STLENPLQSGSTSENPLQSDVMNWERRAGLFLGL 1681
Rattus_norvegicus FSLNNAGARNLESQALSALQEVGSGS-STAEENPLP-----EVMNHERKVGLFGL 1671
Homo_sapiens      SSLNDEYGMHLENQKLSSSVLVNQGIKPFLOQPSN-----EVNKNQEGMSGFLFGL 1680
Pan_troglodytes   SSLNDEYGMHLENQELSSSVLVNQGIKPFLOQPSN-----EVNKNQEGMSGFLFGL 1680
Macaca_mulatta    SSLNDEYGMHLENQELSSSVLVNQGIKPFLEYPLN-----EVNKNERMMSGFLFGL 1684
Callithrix_jacchus SSLNDEYGTRLENQALSSSVLVNQGIKSFLEYPLN-----EVNKNQEGMRGLFGL 1684
Canis_lupus_familiaris -----ENQVLSAAVPVNOGTRPVLENPLN-----EVDKYEGMSGFLFGL 1664
Felis_catus       -----ENQALSASV-LDQGIRSFLENPLN-----EVGKIEGTSGLFGL 1668
Equus_caballus    -----ENQAPSTSVLVNQGMNPFLENPLN-----EVNKSAAKSGFLFGL 1692
Bos_taurus        -----ENQSLASVLANQGIHFSENP LN-----EVNKNQEGKSGFLFGL 1674
Rhinatrema_bivittatum VSSYYE--KRKGLISLSPSVLVLQSGSEYSVHKCFYG-----SNTKHTGTGKGLFGL 1687
Rana_temporaria   DSTLVQTQGTTEPSVVMCSTVMLGKPLSSAEKYFHR-----IRSQSVKNGLFGL 1649
.....1690.....1700.....1710.....1720.....1730.....1740

```

```

      :      :      :      :      :      :      :      :      :      :      :      :      :      :      :      :      :      :      :      :      :      :
Pavo_muticus      KRESIYRAQSDNQGVTVASASQTLPKDTSCTLOTLAT-SKYVYKTAHFDPDTPGEEELAIE 1740
Pavo_cristatus    KRESIYRAQSDNQGVTVASASQTLPKDTSCTLOTLAT-SKYVYKTAHFDPDTPGEEELAIE 1740
Gallus_gallus     KRKSIYRAQSDSQGVTVASPSQTVPKDASCTLOTLAT-AKYVYKTHFDPDTPGEEELAIE 1740
Chelonia_mydas    NHLSVYRAQDNKQEIITITPITQTLSDHACSSLQTSVT-CKYTYKAIHVNDVIPREELCVE 1741
Mus_musculus      KQKPMYRVPPDDKREKPTVQRSS---NHSFWVPESIKP-GRHFRFALEGSAGPPREDLPLA 1737
Rattus_norvegicus KQKPIYRAPDDKREKPTVQRSS---GHPFWIPKFFKT-GRHSFRVLQCSAGHPREDLPLV 1727
Homo_sapiens      KQRSIYKIQDDTREKCLIQRSS---NHIFWTPKSIKT-RRCIFKAIQCNDINPOEDLPLA 1736
Pan_troglodytes   KQSSIYKIQDDTREKCLIQRSS---NHIFWTPKSIKT-RRCIFKAIQCNDINPOEDLPLA 1736
Macaca_mulatta    KQKSIYKIQDDTREKCLIQRSS---NNIFWTPKSIKT-RRCIFKAIQCNDINPOEDLPLA 1740
Callithrix_jacchus KQKLIYRIQNDTREKCLIQRSS---NHIFWTPKSIKT-RRCIFKAIQCNDINPOEDLPLA 1740
Canis_lupus_familiaris KQKSVYRIQDANSEKPIVQRLS---NHIFWTPKSNKT-RRCIFKAIQCSDINPOEDLPLA 1720
Felis_catus       KQKSVYRTQDDSSGKPLVQRLSKLSNHMFWTPKTDKT-RRCIFKAVQCSNDINPOEDLPLA 1727
Equus_caballus    KQKSIYRIQDDNPEKPLIQRLP---SHIFWTPKSVKT-GRCSFKAIQCDDINPOEDLPLA 1748
Bos_taurus        KQKSVYRIPDDNAEKTLIQRLS---NHSVCIPQSTET-RRCAFKAIQCNDINPOEDLPVA 1730
Rhinatrema_bivittatum KQQLLNHPQDKSPQISPTPLMYSSSGQGCAAPQSTIGSRYSYRLINLKDIVPNEELSVE 1747
Rana_temporaria   QDORTQKCHEDDCNLTFSS-----GYTFDHYSNLIKNNKCKPSEELGPE 1693
.....1750.....1760.....1770.....1780.....1790.....1800

```

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/CPLANE11.ppe Feb 1 11:47:44 2022

Page 11 of 21

```

*      ..  :*:*****:***: .      . :*:***:***:***:***: .
Pavo_muticus      LKGKFSNIARLLEWMIRWSDRRLLCGSKKQDSLEE-SLPMIHVKTSAAAVLTSLWLLEQL 1799
Pavo_cristatus    LKGKFSNIARLLEWMIRWSDRRLLCGSKKQDSLEE-SLPMIHVKTSAAAVLTSLWLLEQL 1799
Gallus_gallus     LTGKFSNIGRLLEWMIRWSDRRLLRGSKKQDSIDE-SLPMMHVKTSAAAVLTSLWLLEQL 1799
Chelonia_mydas    LKNKFSIARLLEWMIRWSDRRLLYDTNKIESFOE-SRPMMHVKTSAAAILTSLWLLGRP 1800
Mus_musculus      LQSMFGDAGRLVEWMIRWSDRRLLCDPGVTPSSCK-YSPVIRVKTSAAAILTSLWLLEQP 1796
Rattus_norvegicus LQNLFGDAGRLVEWMIRWSDRRLLCDSEVTRSSCK-YSPVIRVKTSAAAILTSLWLLEQP 1786
Homo_sapiens      LN-TFGSIGRLLLEWMIRWSNRRLLCDSGITESSE-YSPVIRVKTSAAAILTSLWLLEQP 1794
Pan_troglodytes   LN-TFGSIGRLLLEWMIRWSNRRLLCDSGITESSE-YSPVIRVKTSAAAILTSLWLLEQP 1794
Macaca_mulatta    LN-TFGSIGRLLLEWMIRWSNRRLLCDSGITESSE-YSPVIRVKTSAAAILTSLWLLEQP 1798
Callithrix_jacchus LNNTFGSIGRLLLEWMIRWSNRRLLCDSGITESSE-YSPVIHVKTSAAAILASWLLEQP 1799
Canis_lupus_familiaris LNDTFGSIRRLLEWMIRWSDRRLLCDPSLTLSSE-YSPVIRVKTTTAAAILTSLWLLEQP 1779
Felis_catus       LNNTFGSIRRLLEWMIRWSDRRLLCDPSLTLSCE-YSPVIRVKTSAAAILTSLWLLEQP 1786
Equus_caballus    LNNMFGSIRRLLEWMIRWSDRRLLCDPGLAESSCE-YSPIIRVKTSAAAILTSLWLLEQP 1807
Bos_taurus        LNNTCGSTRRLLEWMIRWSDKRLLCDGSLTGPSC-YSPVIRVKTSAAAVLTSLWLLEQP 1789
Rhinatrema_bivittatum LKTKFGSIARLLEWMIRWSKRLLSGSNKAELPE-HNTMIRVKTSAAAILTSLWLLEQR 1806
Rana_temporaria   LQAKYSNEIKLVEWMIRWSDRRLFYSRGAELCHVGSNTAIRVKTSAAAILTSVWLLEEP 1753
.....1810.....1820.....1830.....1840.....1850.....1860

```

```

:      .      :
Pavo_muticus      CKDGRARSVIFKNTSNRSLEESTSLSEAQPRTERECRVDEGTSAN--PPADVHNIQAYD 1857
Pavo_cristatus    CKDGRARSVIFKNTSNRSLEESTSLSEAQPRTERECRVDEGTSAN--PPADVHNIQAYD 1857
Gallus_gallus     CKDGTQARSVTFKNPSNQCKESTSLSEAQPRTERECRVDEGTSAN--PPADVHSIQAYD 1857
Chelonia_mydas    YSDESQARITSFKSPDYQYLMNSASLPETRSKIQKERSMDTGCSFSTETPHAVQDVNAYD 1860
Mus_musculus      YSAAYTAKNGIIK-----VLERHHTEPQVAAERESDVD--ADCPAAVAAQEGTEC----- 1844
Rattus_norvegicus YLAAYSATNGIIK-----VLENHCTKSOVTAERESNTDGNADSPIPVAAQTGAERSDOD 1841
Homo_sapiens      YFATYKAKNAIIK-----MVENRDTGCGIGNIERESKSDAGGSVAVATPGGTEERNQON 1849
Pan_troglodytes   YFATYKAKNAIIK-----MVENRDTGCGIGNIERESKSDAGGSVAVATPGGTEERNQON 1849
Macaca_mulatta    YFATYKAKNAIIQ-----MVENRDTRCOVGPSIERESKSDAGGSVAVATPGGTEERNQON 1853
Callithrix_jacchus YFATYKAKNAIIK-----VIENHDPGYQIGNIERESKTVAGGSVAVATPDGTEERNQON 1854
Canis_lupus_familiaris YFATYKAKNAIILE-----VLENHYPQSOTGPNIESDCKMNAGCSVAVTQGGTEERNQON 1834
Felis_catus       YFATYKKGKNAIFK-----VLENHYRSQSGPDIVSDCKTDAGCSVAVSTQSGTIDERNDQS 1841
Equus_caballus    YFAAYKAENSIK-----VVENHSARSQSEPHIESDCKTDAGGSVAASTQGLGQRNDON 1862
Bos_taurus        YFATYEAKNIAIVK-----VLENNSPGPONGPSIESDCKTDAGCSVAVSAQGVTEINDON 1844
Rhinatrema_bivittatum HCIGEKNIINFRVNP--EYIVAPVFQPEIRPKLQERSVDITGYPGSAETPVEVPEGDVEE 1864
Rana_temporaria   YLVPPRQ-----YIVAPVVHHAHVKPSLQREAPVEEEDDDSESERGSLSVVHEED 1802
.....1870.....1880.....1890.....1900.....1910.....1920

```

```

:      .      :
Pavo_muticus      NLCENSSG-MSTKSKYFDKKEIEHGNCSLPHVAEDLN-----QVEPFLQEEEDITS- 1907
Pavo_cristatus    NLCENSSG-MSTKSKYFDKKEIEHGNCSLPHVAEDLN-----QVEPFLQEEEDITS- 1907
Gallus_gallus     YLCENSLG-ISTKSKYFDKKEIKHGNCYLPHVTEDLN-----KVEPFLQEEEDITS- 1907
Chelonia_mydas    EVSENVLG-ISTKTKHSEKNEMNESYSVTHSTEEGVIGFDEE---EVGAFLKEEIDATS- 1915
Mus_musculus      -----WNRMPAEAEENHDVKDTGDEIAPVTPGSERELVHADGRHSEAGSSTQDEMVDHIS 1898
Rattus_norvegicus ECCQGIWNRMPAEAEENREVKSTDDEILPVTHRTEKEKCVADDERHSEGESFTQDEMVDHIL 1901
Homo_sapiens      KSCQNILNRMPTEAKNPDIKEINDDIISITHNTKKEFIDIDENLLEVEAFTTEEMDMHIS 1909
Pan_troglodytes   KSCQNILNRMPTEAKNPDIKEINDDIISVIHNTKKEFIDIDENLLEVEAFTTEEMDMHVS 1909
Macaca_mulatta    KSCQNILNRMPTEAKNPDIKEINVEIISVIHNTKKEFIDIDENLLEVQAFTEEMDMHIS 1913
Callithrix_jacchus KSCQNILNRMPTEAKNPDIKEINDDIISVIHNNKKEFIDIDENLLEVEAFTTEEMDMHIT 1914
Canis_lupus_familiaris EPRQNILI-MPTETYNPEIKETKDEIIPVTDDETEKEFIDITGEDLLEVEFTFNOEEMETYLS 1893
Felis_catus       ESHQIMLNGIPTAFNPETKETKDKIISVTDDETEKEFIDIDEDLLEIETCNOEEMEIQLS 1901
Equus_caballus    ESYQISISNRMPTEAKNPDIKEETSEEVISVTDGTGKEFIDIDEDLSEVETFTQEEMDVCLS 1922
Bos_taurus        ESCQSIWK-MPTDVKNPEIKGTKDEIISVTDDETEKEFVIDEALIEVEAFTQEEMDVYPS 1903
Rhinatrema_bivittatum ELCEI-MSEISSGLNTHDSRVAEPEPFFLSN--DEEITDCDNYPVEEREDITPDAVELPS 1921
Rana_temporaria   PELLEQSDSRASSKGSRESQDSQERQVTSLDKSLDDTS-----VLSEYPPVVEQIPIS 1857
.....1930.....1940.....1950.....1960.....1970.....1980

```


CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/CPLANE1.pse Feb 1 11:47:44 2022

Page 12 of 21

	QSEEFFEFPFEI-PKDSNSSVR--IKPGKD-----ISNSAVDSLQEDQKMKKAKERKAEQ	1959
Pavo_muticus	QSEEFFEFPFEI-PKDSNSSVR--IKPGKD-----ISNSAVDSLQEDQKMKKAKERKAEQ	1959
Pavo_cristatus	QSEEFFEFPFEI-PKDSNSSVR--IKPGKD-----ISNSAVDSLQEDQKMKKAKERKAEQ	1959
Gallus_gallus	ESEEFFEFPFET-PKSSNSSVR--IKPGKD-----ISSAVDSPOGDQIVKKAKERKAEQ	1959
Chelonia_mydas	ENEELFEFPFGV-PKSPSISVS--IKPVQDQKEEHISTLDVSPWEEMPMEKLEKKAKAQ	1972
Mus_musculus	DSEEGFVPSLRG-----PSAIVC-----RPESQLSSEHSEEEAACSRKEPRDASVDTNLTQ	1950
Rattus_norvegicus	DPEEGSVGSPRV----PDAVTR----WPVSQLS-EHSTEEAACSRKEPLETSVDTKLTQ	1952
Homo_sapiens	DYEEDIIESVGG-FRSPSLAIC--MMTLPQOLEEE-FTEEVQCQREEPLETIMEEKSTEQ	1965
Pan_troglodytes	DYEEDIIESVGG-FRSPSLAIC--MMTLPQOLEEE-FTEEVQCQREEPLETIMEEKSTEQ	1965
Macaca_mulatta	DYEEDIKESVGG-FRSPNLGIC--MMTLPQOLEEE-FTEEVQCQREEPLETNTEEKSTEQ	1969
Callithrix_jacchus	DYEEDIIESLGG-FGSPSLAIC--MMTLPQOLEE-FTEEVQYQKEEPLTNMEEKSTEQ	1970
Canis_lupus_familiaris	DYEEDIKEPVES-LKSSNIVIN--MLTLPEHLEEQQSTREVCQPKKEPLETCMEEKSTEQ	1950
Felis_catus	DHEEVTQEPIGN-LKSSHIAIY--MQTLPOHLEEH-STGEVQCPRERLETCEMKKSTGQ	1957
Equus_caballus	DYEEDIKEPVRS-LKSPSIAIY--VQTLPOHLEEH-STGELLCPREGPLETYMEKKSTEQ	1978
Bos_taurus	DHEEDAKLFAKEPVESPNIAIYMQTLPOHLDKQHSSTGEACCPREEPRETCMEESTEQ	1963
Rhinatrema_bivittatum	AYEEDLEELLGP-PTGPSISVS--IRPVQQLKDENDIANLLVECLQDASVNERAKEKSVVO	1978
Rana_temporaria	ETEDEMPDTQRS----PKISVD--IRPVPTQVEIVYSETQEN--AEDPEESFVEIPEQL	1909
1990.....2000.....2010.....2020.....2030.....2040	

Species	Sequence	Year
Pavo muticus	NVEIFYFH-FPLTMTVEVATSTISQSCSLEQNSEVPSNVEISLSHGQ---PSLAAVSS-IS	2014
Pavo cristatus	NVEIFYFH-FPLTMTVEVATSTISQSCSLEQNSEVPSNVEISLSHGQ---PSLAAVSS-IS	2014
Gallus gallus	NVNADWDHINIMLSVTEVATSTISQSFSLQNSEVPSNIEISVSHGQ---PSLAAVSS-IS	2015
Chelonia mydas	NGR-----AEAVSSTIPHSFCLEMNADAPSNIIEICACDDQ---PSFTGVS---	2014
Mus musculus	KG-----AQISDLKEKS---PTVLPPLMS-NG	1972
Rattus norvegicus	KGTSEALP-----KSEHSIPHSICIDANSETSSAQISELKDKP---STVPPLMS-NG	2000
Homo sapiens	KGMIEAFS-----HPGHTTPOSMQVDTSSSEISSAQISTYKEKS---SSVPLLIS-NG	2013
Pan troglodytes	KGTIEAFS-----HPGHTTPOSMQVDTSSSEISSAQISTYKEKS---SSVPLLLIP-NG	2013
Macaca mulatta	KGMIEAFS-----HPEHTTPOSTQVDTSSDISSAQISTYKDKS---SSVPLLISNG	2018
Callithrix jacchus	KGMIEAFS-----LPEHTTPOSTQVDTSSSEISSAQISTYKDKS---SSLPLPLIS-NG	2018
Canis lupus familiaris	K-----GTOISAFKDKS---SSVPPFVS-NG	1972
Felis catus	KGMIEIFS-----NPEHTATYSFCVDTSSEISSGQISAFKDPs---SSVPPFIS-NG	2005
Equus caballus	KGMIEGFS-----NPEHTTPHSFCVDTSSEISSAQISAFKDKS---SSVPPSIS-NG	2026
Bos taurus	KGMIEAST-----DLEHIIPHSFCVDINSEVSSTPVSAACKDKS---SSAPPLAS-NG	2011
Rhinatrema bivittatum	EDVSVSAS-----SEPGSPLSFCIDMAAAATCGNVDAALTKLNGRPSVAQOSNSNL	2029
Rana temporaria	HS-----EPAMSTGSSLPQPS---PSATNVPP---	1933

	.	.	:	*	:	*::	*****:	****:	**	.***:	.*	
Pavo_muticus	SVIS	TSICAKKEDIKEVPTEEKLN	TSETVROMLQDEMFKLVQLQQINFMSLMQIMQSS	2074								
Pavo_cristatus	SVIS	TSICAKKEDIKEVPTEEKLN	TSETVROMLQDEMFKLVQLQQINFMSLMQIMQSS	2074								
Gallus_gallus	SVIS	TSICAKKEDIKEVPTEEKLN	TSETVROMLQDEMFKLVQLQQINFMSLMQIMQSS	2075								
Chelonia_mydas	SVTYNGPVCSSKKQEVODGEI	SEPLNVSEAVRKMLQDEMFKLVQLQQVNFLNLMQMVGSS	2074									
Mus_musculus	AQDTSQT----	PKTOGNEHRAQLPDASESVROMLQDEMFKLVQLQQINFLSLMQIVGPS	2028									
Rattus_norvegicus	AQVTSQT----	SOKTOGNDRHVLPDSSDSVROMLQDEMFKLVQLQQINFLSLMQIVGPS	2056									
Homo_sapiens	VNVASQPAPPTPOKTORNEFTAQLPDCS	ESVROMLQDEMFKLVQLQQINFMSLMQIVGSS	2073									
Pan_troglodytes	VNVASQPAPPTPOKTORNECTAQLPDCS	ESVROMLQDEMFKLVQLQQINFMSLMQIVGSS	2073									
Macaca_mulatta	VSVASQPPVPTPOKTORNECTAQLSDCS	ESVROMLQDEMFKLVQLQQINFMSLMQIVGSS	2078									
Callithrix_jacchus	VNVASQTPVTPTPOKTORNECRDLPCDS	SIRHMLQDEMFKLVQLQQINFMSLMQIVGSS	2078									
Canis_lupus_familiaris	VSVASQTPVPTPOQTQSNEPRAQLPESSDS	SVROMLQDEMFKLVQLQQINFMSLMQIVGSS	2032									
Felis_catus	VSVSSQTPMPTPOQTORNEPRAQLPDSSDS	SVROMLQDEMFKLVQLQQINFMSLMQIVGSS	2065									
Equus_caballus	VSVASQTPVPTPRQTORNEPRAHLPS	SSDSVROMLQDEMFKLVQLQQINFMSLMQIVGSS	2086									
Bos_taurus	VTVASQTPGPATPOKTORNEPRAQLSQSSDS	SVROMLQDEMFKLVQLQQINFMSLMQIVGSS	2071									
Rhinatrema_bivittatum	VNISSKVPILVKEEIQERE-TTQPLNT	SEVROMLQDEMFRVLQLQQINFMSLMQFVGSS	2088									
Rana_temporaria	---PPAFPINLPELTSDGRQSTOLANTSDGVROLFD	DEMFRLLQLQQINFMSLMQVVVGSS	1990									
2110.....2120.....2130.....2140.....2150.....2160											

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/CPLANE11pep Feb 1 11:47:44 2022

Page 13 of 21

```

      *  :.      :*:
Pavo_muticus      CANLSNVQQTLLQOYQSAHPEGIQPVPPAEVSGSGR--PSCSAGAS-----LKTQLS 2123
Pavo_cristatus    CANLSNVQQTLLQOYQSAHPEGIQPVPPAEVSGSGR--PSCSAGAS-----LKTQLS 2123
Gallus_gallus     FANLPNVQQTLLQOYQSAHLEGIQPVPPAEGNGSGR--PSCSAGAS-----LKTQLP 2124
Chelonia_mydas    FASLPNMQHLLQOQSAIQLGGSQASHTVRGSAGDTSLPVQSADIS-----PETQLP 2125
Mus_musculus      VASLPDMHGLLQQAQSVRFGESQVSN-----STKSDCIEVNSRQRV-----SARAQS 2075
Rattus_norvegicus VANLPDTRQLVQQAQSVHFGESQVAN-----PTRSDCIEVNSGQKL-----LAKPOS 2103
Homo_sapiens      FANLPDTRQLVQQAQSVHFGESQESN-LRGC GDVEDSNKNLKERF-----FIKPOS 2123
Pan_troglodytes   FANLPDIQQLVQQSQSVHLGESQESN-LRGC GDVEDSNKNLKERF-----FIKPPS 2123
Macaca_mulatta    FANLPDIQQLVQQSQSVHLGGSQESN-LRGC GDVEDSNKNLKERF-----FVKPOS 2128
Callithrix_jacchus FANLPNTQQLLQOQSVHLGGSQESN-LRGC GDVEDSNKNLKERF-----FMKSQS 2128
Canis_lupus_familiaris FANLSDIHRLQLQPQSVPLVGSFVINPTRGSSDVDDTSRHFKEKRS-----FIKPOP 2083
Felis_catus       FANLPDIHQQLLQOQSVPLVGSFVINPTRGSSDVDDTSRHFKEKRS-----FIKPOS 2116
Equus_caballus    FANLPDVSQQLLQOQSVHLVGNQVLNPAAGSGDVEDTSRKRKERF-----FIKPOS 2137
Bos_taurus        FANLPDMHQLLQOQSVHLVGSQASNPTRGSDVDGTSRNLKERF-----FIKPOP 2122
Rhinatrema_bivittatum FANIPNMQQILQOQSSSHHEQSQAEENPLKSTDSAQSLPVYPKEALPCDFSLKPQLLSVS 2148
Rana_temporaria   FAALPAIQQIMQHT--AQVTGNLVNPTVGVQVPLQVIPPAPVIHT-----VLQT 2037
      .....2170.....2180.....2190.....2200.....2210.....2220

```

```

      :      :.  .      :.  .      :.  .      :.  .
Pavo_muticus      TEDNRGKYDQKSSN-FQPTNSLRDESNYVHIKHN--QNVSLSLLESHSRETGFMPSPSEDL 2180
Pavo_cristatus    TEDNRGKYDQKSSN-FQPTNSLRDESNYVHIKHN--QNVSLSLLESHSRETGFMPSPSEDL 2180
Gallus_gallus     TGDNRGKYDQKSSD-FQPTNSLRDEGNDVHIENH--QNVSLSLLESHNRETGFMPSSQDL 2181
Chelonia_mydas    TKENAGKSNKKSSSPSQERSILNDQSSKESIHNHPEVNISSLSESQSNGTGFIPASQDL 2185
Mus_musculus      MGECTREPQKNSPA-DHKRISRPDQDSSGDTQDIPHGSVPLCQLDGOPEVRGQTGAPRSF 2134
Rattus_norvegicus MGECTRHPGKSSPP-GHERISQPDQDSNGETQDIAHESTPLGRSDGQPKPRWRTGASRSC 2162
Homo_sapiens      MGENAREPRKNSPH-CHEGTIPSGQNSTGNVQNVPHGSIPLCQLNGQPKRGPIPPSSQNL 2182
Pan_troglodytes   MGENTREPRKNSPH-CHEGTIPSGKNSTGNVQNVPHGSIPLCQLNGQPKRGPIPPSSQNL 2182
Macaca_mulatta    MRENTREPHKNSPH-CHERTIPSGQNSTGNVQNVPHGSIPLCQLNGQPKRGPIPPSSQNL 2187
Callithrix_jacchus MGENTREPQKNSPY-CHEGTIPSGQNGENVQSVPHGSIPLCQLNGMPQKRGPIPPSSQNL 2187
Canis_lupus_familiaris VGEYTREHGKKSPPH-CHKGVVLSQNSHGNLQNVPHGSIPLCEFEPPPSTGLTPASQSL 2142
Felis_catus       MGEYTREPGKESPPH-CHKGIVQDDQNSNGNVQNIHGSIPPLCESEGGPPQNTGLTPASQSL 2175
Equus_caballus    MGECTREPQKNSPN-CHRGILQSDQNSNGNLQNVPHESIPFCHLEGQPNRGLTPPSQNL 2196
Bos_taurus        MAECAREPGKNIPH-CHKEIVQSNENSGNFENVPHGSVPFCQSEGOQPNRGLTPASHSL 2181
Rhinatrema_bivittatum KTDTKRINHETNSD-RQEANALPEKSNKENTQAPPDLCHLHPPPELTSDHLVSQGLFSI 2207
Rana_temporaria   QKDDVEQAVKTKTGEAAGTNPVNHSNKENIQRPPKINIPSSQVNESER----IPANMGL 2093
      .....2230.....2240.....2250.....2260.....2270.....2280

```

```

      ..      :  * :      .  :      .  :      .  :      .  :      .  :      .  :
Pavo_muticus      HSS-----ADV KPLHLLAPSSDVQKAPKFIPIEKNTNYS DGFLLKLES GYH SKPAFLH 2234
Pavo_cristatus    HSS-----ADV KPLHLLAPSSDVQKAPKFIPIEKNTNYS DGFLLKLES GYH SKPAFLH 2234
Gallus_gallus     HSS-----APVKPFHLLAPSSDVQKAPKFIPIEKNTNYS DGFLLKLES GYH SKPAFLH 2235
Chelonia_mydas    LPS-----APDTTLHLLSHSLDIQKTHKLIPVAKTLNVEGFP LLKLES-DHLKPLNLY 2238
Mus_musculus      APASFPPAPAADSGQLQLLFTPAAIQKTPOLIPPARAGAPGRGFLLHFPKRD FKPLSLP 2194
Rattus_norvegicus APACLPHVPGGEGGLQLLFTAAAVQKTPOLIPPARAATAGSAFP LLHFQPKHEFKPLPLP 2222
Homo_sapiens      PSTSFYPAPAGNTHLYLLSTPSVQKAPRLIPHAKTFSPGDGFLLQFKSKQEFQPLFLH 2242
Pan_troglodytes   PSTSFYPAPAGNTHLYLLSTPSVQKAPRLIPHAKTFSPGDGFLLQFKSKQEFQPLFLH 2242
Macaca_mulatta    PSTSFYPAPAGNTHLCLLSTPSVQKAPRLIPHAKTFSLGDGFLLQFKPKQEFKPLFLH 2247
Callithrix_jacchus PSSLFYPAPAENTNLYLLSTPSVQKAPSLISHAKTFSPGDGFLLQFKPKQEFKPGFLH 2247
Canis_lupus_familiaris PTTALPPAPAGSSPFHLLSPSFAIPKTPRLIPAAKTFGPADGFLLQFQPKHEFKSLSFH 2202
Felis_catus       PTPALSSAPAGSTALYLLSPSSAILKTPRLIPAAKTFRPGDGFLLQFQPKHEFKPLSFH 2235
Equus_caballus    PTTSLSPGPAATHLQLLSTSSSLIPKTPRLIPVAKTLRPGDGFLLQFQPKHEFKPLSFH 2256
Bos_taurus        PTTSLSPVPAGNTHLHLLSTSSAIPKTPRLIPTANTSRPSDGFLLQFQPKPEFKPISFH 2241
Rhinatrema_bivittatum NSS-----KCFNLLMPVTGLQK-PTLLPTTKNTAAANGFP LLKLPQHGFQKPLNIN 2257
Rana_temporaria   LST-----APRQTLPLITSASPOQSTLNLHPPPESSNFN-GFLLKLSHAPTLLSLNSL 2146
      .....2290.....2300.....2310.....2320.....2330.....2340

```

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/CPLANE11pep Feb 1 11:47:44 2022

Page 14 of 21

```

Pavo_muticus      PMEMSSAFARPPPIILRIAWNSSDSLWN-HQSSYKER-SKSTAHLNMS-RYKPEISRQIQE 2291
Pavo_cristatus    PMEMSSAFARPPPIILRIAWNSSDSLWN-HQSSYKER-SKSTAHLNMS-RYKPEISRQIQE 2291
Gallus_gallus     PIEMSSAFARPPPIIPRVAWNSSDSLWN-HQSSYKERRSKSTAHLNMS-RYKPEISRKMQE 2293
Chelonia_mydas    PLKVSQAFIGSLPQPRVWDPSSSLQNPPLSCMLGDKTISMTHLNLN-RYDPEMIROVYE 2297
Mus_musculus      VGRIPQVSRFPQAQPKAWSLSDSCQP--PVSQRTVHTLTLPSPSDSS-HCNAAEAMRK--- 2248
Rattus_norvegicus VGRIPGAPFRPQAQPKAWGLSDSCQS--PVSQRMVHTMPPSPSGSSQYNAQAMRK--- 2277
Homo_sapiens      TGSIPQVPFRPLPQPREAWGLSDSFQP--ALPQRAAQTPASHLNVS-QYNTEARKKEVE 2299
Pan_troglodytes   TGSIPQVPFRPLPQPREAWGLSDSFQP--ALPQRAAQTPASHLNVS-QYNTEARKKEVE 2299
Macaca_mulatta    AGSIPQVPFRPLPQPREAWGLSDSFQP--ALPQRAAQTPASHLNVS-QYNTEARKKEVE 2304
Callithrix_jacchus TGSIPQVPFKPLPQPREAWGLSASFQP--DPPQRAAQTPASHLNVS-QYNAEAKKKEVE 2304
Canis_lupus_familiaris SGRVQVQVFRPLPQPREAWGLSASFQP--LLPQRTMPTASVSPNLN-HYNTEAIKKAVE 2259
Felis_catus       TGRAPQVPFRPPPQPREAWGLSDSFQP--PLLRKAMHMTSVPHLNLN-QYNTEATKKAME 2292
Equus_caballus    TGRVAQVPFRPLPQPREAWGLSDSFQP--PLPQRAAHMTASTSHLNLN-QYNTEAIKKAVE 2313
Bos_taurus        TERVPQVPFSPPLPQPREAWGLSDFLQP--PLPKTAMATTSVSHLNLN-QYNTEAIKKAVE 2298
Rhinatrema_bivittatum PVNVTHAFARLPHPHSREMRGPPNSEHKVPLSCALANKTYLPTHNLN-QYDPEAIQQAEE 2316
Rana_temporaria   SGAENS SRPKDRPPLREAWGPSNRQPS---HQSSIELTQPPPYLSSS-----TIKAGKRTE 2199
.....2350.....2360.....2370.....2380.....2390.....2400

```

```

Pavo_muticus      EEKRWAEIVHKPPSKHLCSSQYE-EREVSLEEQQFSGNVKMDNTVIITDDL-----AG 2341
Pavo_cristatus    EEKRWAEIVHKPPSKHLCSSQYE-EREVSLEEQQFSGNVKMDNTVIITDDL-----AG 2341
Gallus_gallus     EEKRWAEIVHKPPSKHRCSSQYE-EREVSLEEQQFSGNVKMDSTVTITSNV-----AG 2343
Chelonia_mydas    EKKRWAEAESKSPKLLNLDSQSEGEQNFAPLQHLPTNVSAEKLPSAQHASFYGTQHSAG 2357
Mus_musculus      -----AEAVLTGIPKHVNMGQYAGQGYLTPOQDSSVFIKPENVDVKPSPPETALQNSFG 2303
Rattus_norvegicus -----AEAVLPGIPKHENLDQCTGOESVTPQDSSVFIKPGSVFDTVRPPPETALQNSFG 2332
Homo_sapiens      Q-KTWAETVITEIPNHVNLDQYVGQENLTPOQDSSVFIKPEKLFVDVKPGTLEISPHHSFG 2358
Pan_troglodytes   Q-KTWAETVITEIPNHVNLDQYVGQENLTPOQDSSVFIKPEKLFVDVKPGTLEISPHHSFG 2358
Macaca_mulatta    Q-KTWAETVITEIPKHVNLDQYVGQENLTTPQDSSVFIKPEKLFVDVKPGPLEISPHHSFG 2363
Callithrix_jacchus H-KTWAGTVITEIPKHVNLDQYVGQENLRPQDSSVFIKPEKLFVDVKPRPLEIPPHHSFG 2363
Canis_lupus_familiaris Q-EKWAETVTTEIPKHVNLDQYVGQENLTPOQDSSVFIKPEKLLDVKPGPLEISPONTFG 2318
Felis_catus       Q-KKWAESVITEIPKRVNVDQCVGHEKLTSDQDSSVFIKPEKLLDVKPGSLEIWPONSFG 2351
Equus_caballus    Q-KKWAETVTTEIPKHVNSDNQVGQENLTPODFTSVIKPEKLFVDVKPRPLEISPONSFG 2372
Bos_taurus        P-KKWAETIIKEIPKHMNLQYVGQENLTPODSTTFMKPEKIFDVKPGPFIEISONSFG 2357
Rhinatrema_bivittatum QKKRWADIVNKGGPKHLNLQYDYQPALGSQQQNAATTVSADKHLGTQSIPAREFYQNPTE 2376
Rana_temporaria   KAIKWAQPVLKGHSTHS-----VGNLSKANVPVYQPFHKSEENRRRPEGRIEEEVSQNNVG 2254
.....2410.....2420.....2430.....2440.....2450.....2460

```

```

Pavo_muticus      IPLLQLNLDPVPRFPPIRQPIITTALIPVKPVTEETDCRETLQHTGISLLHASLPQOK-- 2399
Pavo_cristatus    IPLLQLNLDPVPRFPPIRQPIITTALIPVKPVTEETDCRETLQHTGISLLHASLPQOK-- 2399
Gallus_gallus     IPLLHLNLDPVSKLPPVIRQTIISTALIPVKPVTKETDCRETLQHTGISLLHANLPQOK-- 2401
Chelonia_mydas    IPLLHLQLDPAPRFPPPIIRPPVPASLIPVRPITEETNCRDTLQHTGIPILHTNLPPKNK- 2416
Mus_musculus      LPLLHLQFKPPYVFSAPPR---AFSRFPSPVPGTEGR-----NQPQLSLLHPCLPPE-- 2352
Rattus_norvegicus LPLLHLQFKPSYVFSMPSPRA--ALGSFPSPVPGTEGT-----KHPQLSLLHPCLPPE-- 2384
Homo_sapiens      LPLLHLPLKPPNMFPSSTRASITVPSTPIQPIAEER-----KYPRLSLLHSHLSPEN-- 2410
Pan_troglodytes   LPLLHLPLKPPNMFPSSTRASITVPSTPIQPIAEER-----KYPRLSLLHSHLSPEN-- 2410
Macaca_mulatta    LPLLHLPLKPPNMFPSSTRASITVPSTPIQPIAEER-----KYPRLSLLHSHLSPEN-- 2415
Callithrix_jacchus LPLLHLPLKPPNMFPSSTRASITVPSTPIQPIAEER-----KYPRLSLLHSHLSPEN-- 2415
Canis_lupus_familiaris LPLLHLQKPPYVFSSTRITLVITIPSTIAHET-----KYPRLSLLHSHLSPEN-- 2370
Felis_catus       LPLLHLQKPPYIFSSASTASVTIPSIPMRTVAEER-----KYPRLSLLHSHLSPEN-- 2403
Equus_caballus    LPLLHLQKPHYIYSSVSASVTVPSPVIRTVAEER-----TYPRLSLLHSHLSPEN-- 2424
Bos_taurus        LPLLHLQKPPYMFSSASRVSTIPPIPIRTMAEER-----KCPRLSLLHSHLSPEN-- 2409
Rhinatrema_bivittatum IPLLRLQLNRLPLIPPSTRSHVAAPILPVRPVMGTAFAQIP-LQOTKLALLKANLTLEN-- 2433
Rana_temporaria   MPLLCRLRTDPTLYLPSMPNPGFTVSVAGPQAKTSEKSGP--PVAGFTLLKANLPQOIQS 2312
.....2470.....2480.....2490.....2500.....2510.....2520

```


CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/CPLANE11.ppe Feb 1 11:47:44 2022

Page 15 of 21

```

::** :.*: :::
Pavo_muticus      -----KVPKLIIPPQDLIAFEQYYHHTMTSTSFQGDQTKPIQ 2436
Pavo_cristatus    -----KVPKLIIPPQDLIAFEQYYHHTMTSTSFQGDQTKPIQ 2436
Gallus_gallus     -----KVPKFIPPQDLIAFEQYCYHHTVASTSFQGDQTKPIQ 2438
Chelonia_mydas    -----FOPPKLIPIQNLIAFEQSRQCTSAPHEFSQGDHSGQIE 2454
Mus_musculus      -----TYKKPOLIPILENLLAFKRS--QOKLAHSVSGQGD--AAPH 2388
Rattus_norvegicus FCIPARICILLYLFFSSTKKIQYKKPOLIPILENLLAFKRS--QOKLAHNVFEQGD SAHLQ 2442
Homo_sapiens      -----RCKKTOLIPILENLIAFKQS--QOKLTHNLFEQGDAGHLQ 2447
Pan_troglodytes   -----RCKKTOLIPILENLIAFKQS--QOKLTHNLFEQGDAGHLQ 2447
Macaca_mulatta    -----MCKKTOLIPILENLIAFKQS--QOKLTHNLFEQGDAGHLQ 2452
Callithrix_jacchus -----MCKNPOLIPILENLIAFKQN--QOKLTHNLFEQGDAGHLQ 2452
Canis_lupus_familiaris -----TYKNLQOLIPLESLIAFKQS--QEKQTHDLFEQGD SGHLQ 2407
Felis_catus       -----TYKNPOLIPILENLIAFKQS--QEKLA PNLF EQGDFGHLR 2440
Equus_caballus    -----MHKKPOLIPILENLIAFKQS--QOKLTHNLFEQGD PGHLQ 2461
Bos_taurus        -----MYQKPOLIPILENLIAFKQR--QONLTHNSFEQGD PGHLQ 2446
Rhinatrema_bivittatum -----KVLSPSLPFOPPKLIPIQNLIAVQQS--CQSKHQFWLGNLPGQIQ 2477
Rana_temporaria   -----LQISPTPRLIPIQNLIDFERD-----SAQRGDPGSMQ 2344
.....2530.....2540.....2550.....2560.....2570.....2580

```

```

:: .. . :*: ** :: : .* . *: . :
Pavo_muticus      LLKTDLKPFPRDVONSTKQKRRDKKQMK---EMEKEKRSVSFCPDDSIISISDITVM 2492
Pavo_cristatus    LLKTDLKPFPRDVONSTKQKRRDKKQMK---EMEKEKRSVSFCPDDSIISISDITVM 2492
Gallus_gallus     LLKTDLKPFPRGVONSTKQKRRDRKQMK---ELEKEKRSVSFCPDDSIINISDITVM 2494
Chelonia_mydas    LLKANTEPFDARHTWNNTKQKRRAEKQIKE---KEDKKKTSVTFRPDDSIIGTDDIEK 2510
Mus_musculus      FVGVSMDAAGITQGK---QKRSRAKRELOEGRAQKPRRKPNVSFRPDSLIS-NDSEV 2443
Rattus_norvegicus FLKVNMEAPKITQGK---KQSRRAERELQERRAQKPRRKPSVSFRPDDLIS-NESEV 2497
Homo_sapiens      LLKVKIEPPEVRQKDSKKRQRRRAEKELQEKRCQKLRKPNTVFRPENSIIINDDSEI 2506
Pan_troglodytes   LLKVKIEPPEVRQKDSKKRQRRRAEKELQEKRCQKLRKPNTVFRPENSIIINDDSEI 2506
Macaca_mulatta    LLKVKIEPPEVRQKDSKKRQRRRAEKELQEKQSEKLRKPNTVFRPENSIIINDNSEI 2511
Callithrix_jacchus LLKVKIEPPEVRQKDSKKRQRRRDEKEQEEKRSEKLRKPNTVFRPEDIINNGDSEI 2511
Canis_lupus_familiaris LLNVKIEPSEVRQGRDSKKRRRRRAEKELQEKGSEKLRKPNSVASQPEGLVNDNDSEI 2466
Felis_catus       LLKVKIEPSEARQKDSKKRQRRRAEKELQEKRSQKLRKPNSVAFQPESSIVNDNASEI 2499
Equus_caballus    LLKVQMESSEVRQKDSKKRQRRRAEKELQERSEKLRKPNSVTFQPEDSIINDKDSEI 2520
Bos_taurus        LLKVKIESSELRQEKDSKKRQRRRAEKELQERSEKLRKPNSVTFQPENIIINDNSEI 2505
Rhinatrema_bivittatum LLKANIEPPEMRKEKDNTKQRRRAEKQIQEKILGKMEKSEVFRPDDSIIVNKKVVQ 2536
Rana_temporaria   LLKANIHPPFEEAVNHGDSMKRQKRRTLREKGE---KKEKKTSVTFRPEDSIITTNFDE 2400
.....2590.....2600.....2610.....2620.....2630.....2640

```

```

. :. : * ** :. :
Pavo_muticus      AVEPRT-DPETKCTTYLQDDSFISMDKAA-----EAVTTPD-LHHMASTREKIAE 2540
Pavo_cristatus    AVEPRT-DPETKCTTYLQDDSFISMDKAA-----EAVTTPD-LHHMASTREKIAE 2540
Gallus_gallus     AVEPKT-DPETKCTSYLQDNSFISMDKAA-----EAVTTPD-LHYMASTSKKIAE 2542
Chelonia_mydas    VFETEIQDQQAESSHYLGDDFVISPDTVG-----EAVTTSAGLHCMASSTRKKPAE 2560
Mus_musculus      IIEPKE--QLGHHDSQHLDKFDIPFEMLE-----DDINTSAGLHFMA SVRKKA VG 2491
Rattus_norvegicus PMEPKE--QLGHHDSQPLDKFDIPFEMLE-----HDVNTSAGLHFMA SVQKKAVG 2545
Homo_sapiens      IKKPKE--QEEHCGSHPLDDFDVPFEMLO-----DDN-TSAGLHFMA SVKKKAIG 2553
Pan_troglodytes   IKKPKE--QEEHCGSHPLDDFDVPFEMLO-----DDN-TSAGLHFMA SVKKKAIG 2553
Macaca_mulatta    IKKPKE--QEEHCGSHSLDDFDIPFEMLO-----DDN-TSAGLHFMA SVKKKAIG 2558
Callithrix_jacchus IKKPKE--QEEHCDSHLLDDFNIPFEMLO-----DDN-TSAGLHFMA SVKKKAIG 2514
Canis_lupus_familiaris VTKPKE--QEEHPRSQPLDDFDIPFEMLO-----DDINTSAGLHFMA SVRKKAIE 2546
Felis_catus       VMKSKE--QEEHG-SQPLDDFDIPFEMLO-----NDIKTSAGLHFMA CVRKKAVE 2568
Equus_caballus    VMKSKE--QEEHHGPQPLDDFDIPFEMLO-----EDVNTSAGLHFMA SVRKKARE 2552
Bos_taurus        VK-PKE--QEEHDGSRPLEDFIPFEKLO-----DDINTSAGLHFMA SVKKKAKE 2591
Rhinatrema_bivittatum TKHHQE---SPISEPADEFVIPLGSFDSVLEQNSVGGAIPTSAELHYLASTRKKATE 2458
Rana_temporaria   VVEKEK-VFHDEPNLMESNEFVIPLGSFEAELTDMPG-PLLPIMAE LHYLASTRKPPE
.....2650.....2660.....2670.....2680.....2690.....2700

```

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/CPLANE11.ppe Feb 1 11:47:44 2022

Page 16 of 21

```

:***.***
Pavo_muticus      TQDASTNTHPVVLSK-----YKDIGISTETETISDLGKNESDMSVP 2579
Pavo_cristatus    TQDASTNTHPVVLSK-----YKDIGISTETETISDLGKNESDMSVP 2579
Gallus_gallus     TQDASTNTHPVVLSK-----YKDIGISTETETISDLGKNESDMSVP 2581
Chelonia_mydas    TQDASTNTDPVLSK-----YQDIETGSEDIASELSKNQPIASVP 2599
Mus_musculus      SHDASTNTDP-----DKEGSPSQKADSESSKNPQATAA 2523
Rattus_norvegicus RHDASTNTDPA-----QDKEGTSQEVVDESNKTTQQVVST 2579
Homo_sapiens      SQDASTNTD----- 2562
Pan_troglodytes   SQDASTNTD----- 2562
Macaca_mulatta    SQDASTNTV----- 2567
Callithrix_jacchus SQDASTNTDPVFKYI-----TVQDKEATSQEVVSERGTKQQIISC 2598
Canis_lupus_familiaris CQDASTNTDPD-----KKAASQEVVTECKDQQIISF 2546
Felis_catus       CQDASTNTDP----- 2556
Equus_caballus    CQDASTNTDSD-----KEAASQEVVPECHKNQQDISS 2600
Bos_taurus        CQDASTNTDP-----EAASQEVVSECHKNQRVISS 2582
Rhinatrema_bivittatum KQDASTNTDSVPSLPNHATVNIAEIPKHOVDPLESFKSYRDVIGCEEFISKLDKNHQIP 2651
Rana_temporaria   VHDAGTNTDSAS-----KSLINMGTSYDAFSSSPILVAV 2491
.....2710.....2720.....2730.....2740.....2750.....2760

```

```

.  * : . : : . . . .
Pavo_muticus      VSE--SSSVPKLSSPDMYLNLRFSSSEVKERLLPSSLSLSD-VPDLSEHKYISVIDME----- 2631
Pavo_cristatus    VSE--SSSVPKLSSPDMYLNLRFSSSEVKERLLPSSLSLSD-VPDLSEHKYISVIDME----- 2631
Gallus_gallus     VSE--SSSVPKLSSPDMYLNLRFSSSEVKERILPSTLSLSD-VPDLSEHKYISVIDIE----- 2633
Chelonia_mydas    STEHLASRVPMQLPPDMYLNLRFHTEVGERLLPSSGSDTAPDLIGHTYINVIDIE----- 2654
Mus_musculus      SSGHEPLKVPOLLIPDIYLNRLPSGIAEKPLSPSP----PHMAGHKYIDVVDIE----- 2574
Rattus_norvegicus NSGHEPLNVPOLLIPDIYLNRLPTGISEKPLSPSP----PHMARHTYIDVIDIE----- 2630
Homo_sapiens      -PEHEPLTAPOLLVPDVLNLKLSSEMSEKPLSPSIPHTVTNLVGHTYINVIDIE----- 2616
Pan_troglodytes   -PEHEPLTAPOLLVPDVLNLKLSSEMSEKPLSPSIPHTVTNLVGHTYINVIDIE----- 2616
Macaca_mulatta    -PEHEPLNAPOLLVPDVLNLKLSSEMSEKPLSPSTPHTVANLVGHTYINVIDIE----- 2621
Callithrix_jacchus TPEHEPLNAPOLLVPDVLNLKLSSTEIAEKSLSPFIPHTVTNSVGHTYINVIDIE----- 2653
Canis_lupus_familiaris ISEHEPLTVPOVLAPDVLNLKLPSEISEKPMSPSP----SDLVGHTYINVIDIK----- 2597
Felis_catus       --EHEPLNVPVLAPDVLNLKLSSTEISEKPLSPSP----SDLVGHTYINVIDIK----- 2605
Equus_caballus    TSEQEPLNVPOLLAPDVLNLKLSSTEISKPLSPSA----SDRVGYTYINVIDIE----- 2651
Bos_taurus        ISEHETLNVPPOLLAPDVLNLRLPTEISEKPLSPSA----SDMVGHTYINVIDIE----- 2633
Rhinatrema_bivittatum SPVPVPSNAPQTLPPDLVNLRLFLTEETKTLPSLASDAPPLVGHKYINVIDID----- 2706
Rana_temporaria   ASASAPSASPKPLENKRTEDLOSNSMAPSALAAGSRDDLMSVRHQQTPLNRVAKETPSKD 2551
.....2770.....2780.....2790.....2800.....2810.....2820

```

```

*  ** . . . : * * : .
Pavo_muticus      --DSDILNDLP--MIPESADEIVTTEQNEKFEIPSTAELHHMAASVTNAIP----- 2678
Pavo_cristatus    --DSDILNDLP--MIPESADEIVTTEQNEKFEIPSTAELHHMAASVTNAIP----- 2678
Gallus_gallus     --DNDILNDLP--MIPESADEIVTTEQNEKFEIPSTAELHHMAASVTNAIP----- 2680
Chelonia_mydas    --DNDLLKDLF--TIAECTEEMVTTQ--ENFEVPSAKLHHMAASVTNAIP----- 2700
Mus_musculus      --ADD-LLGLP--ACEEPSDE-VTKQOSHPPHAPSSAELHMAASIVDAAP--PHTFQS 2625
Rattus_norvegicus --ADD-LLGLP--ASEEPSDD-VAKQOSHPPHAPSSAELHMAASVVSAP--PHPSQS 2681
Homo_sapiens      --ANDLLQELP--VREEPSNDNVIKQOSDHLAVPSSAELHYMAASVTNAVP--PHNFKS 2669
Pan_troglodytes   --ANDLLQELP--VREEPSNDNVIKQOSDHLAVPSSAELHYMAASVTNAVP--PHNFKS 2669
Macaca_mulatta    --ADD-LQELP--VREEPSNDNVIKQOSDHPAVPSSAELHYMAASVTNAVP--PHNFKS 2673
Callithrix_jacchus --ADDLLQELP--VREEPSNGNVIKQOSDHLVPPSSAELHYMAASVTNAVP--PHNFKS 2706
Canis_lupus_familiaris --ADD-LQELP--IREEPTSDTIKQPSDHLVPPSSAELHYMAASVTNAVP--LHSFKG 2649
Felis_catus       --ADD-LQELP--VREEPSDDHIIROQSDHLEVPSSAELHYMAASVTNAVP--LHSVKS 2657
Equus_caballus    --ADD-LQELP--VREERSDDNIK--QGDHPEVLSSAQLHYMAASVTNAVP--LHKFK- 2701
Bos_taurus        --ADD-LQELP--VKEEPSD--NIKPPSDCLEVPSSAELHYMAASVTNAIPPALDNLKS 2685
Rhinatrema_bivittatum --AEDILKELP--VTP--EVEVIAEQHDSFGVPPSSAQLHHKAASVTNTVP----- 2750
Rana_temporaria   ELSADHPQHLPPVLFNLQYDEQREKMFQKEDTSPPHGEEHLLAVTDLEKD----- 2603
.....2830.....2840.....2850.....2860.....2870.....2880

```

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/CPLANE11.ppe Feb 1 11:47:44 2022

Page 17 of 21

```

Pavo_muticus      -----SELLOKKDNHLEDVLS-----Q 2695
Pavo_cristatus    -----SELLOKKDNHLEDVLS-----Q 2695
Gallus_gallus     -----SELLKKDNHLEDVSS-----Q 2697
Chelonia_mydas    -----PNKFKRKDDHQNDLFF-----V 2717
Mus_musculus      QESASSTRGLISEPAKVTSQSCQSGESWRKSVIEAKEPEIPSVAPPSDROQDRDILEQNFQ 2685
Rattus_norvegicus QESAGSTLGLISEPAKMTQSCQDGESWRKSVMEAKEPEILSVMP-SDROQGG---EQNFQ 2737
Homo_sapiens      QE-----VTPACLDGKSLRAGITEVKEPSVTSPTP-SDIQNKGLPKPEFR 2714
Pan_troglodytes   QE-----VTPACLDGKSLRAGITEVKEPSVTSPTP-SDIHQNKDLPKPEFR 2714
Macaca_mulatta    QESASSSMDLFSKPAEVAPACLDGKSLRAGITEVKEPSVTSPTP-SDIQONEDLPKPEFR 2732
Callithrix_jacchus QESTSSTMDLFSKPAEVTLACLDGKSLRAGITEVKEPSVTSPTP-SDIQONKDLPKPEFR 2765
Canis_lupus_familiaris EESANSTVDVLFKPAKVSPSCVDERSWRPGVTEVKEPGVTSPISEIQQDKDMVKPDPFR 2708
Felis_catus       EESATSTTDLFCCKPAKVSPSCLDGRSWRAAIEEKEPAIASPIPISEIQQDMDMLKPDPCR 2716
Equus_caballus    -----PQEVSPSCLDGRSWRAAIAEVKEPGVPSLTP-PDIQQDKVVPKPDFQ 2747
Bos_taurus        KESAYSAVDLFFKPAKVSPSCLGGSWRAGSTEVKEPHVISPLP-SDVRQDTPKPDFH 2744
Rhinatrema_bivittatum -----PDEFKSTESLLQQPLF-----Q 2767
Rana_temporaria   -----FVQHLPDIERLPSSADLHLMASKKNALP-----RGLLENRDI 2641
.....2890.....2900.....2910.....2920.....2930.....2940

```

```

Pavo_muticus      KQKEHKETDSARESVTWNIELEDARVFPSTR----- 2726
Pavo_cristatus    KQKEHKETDSARESVTWNIELEDARVFPSTR----- 2726
Gallus_gallus     KQKEHTETGSPRESVTWDIELEDARAFSTR----- 2728
Chelonia_mydas    QERDIKSLAG-RHNLTWNLLHEDVRIIHSTG----- 2747
Mus_musculus      FKEQSTKLDSVGSLLWTLLOASAPACPTPSPAVCPRPSSPACPPPSPAVCPPPS----- 2740
Rattus_norvegicus FKEQSTKLDSAEQSLWTLLODASPACPTPSPAACPPPSPVTCVPPSPAACVPSSPAACV 2797
Homo_sapiens      FKGQSTKSDSAEDYLLWKRLQGVSAACPAPS----- 2745
Pan_troglodytes   FKGQSTKSDSAEDYLLWKRLQGVSAACPAPS----- 2745
Macaca_mulatta    FKGQSTKSDSAEDYLLWKRLQGVSAACPAPS----- 2763
Callithrix_jacchus FRGQSTKPDSDADDYLLWKLLOGISAAPAPS----- 2796
Canis_lupus_familiaris FKEQSSKSAEAEDDLLWELLQDVSPARPVRS----- 2739
Felis_catus       FKEQSSKSSAAEEYLLWELLRDVSAARPAQS----- 2747
Equus_caballus    FKEQSSKSDAGEDYLLWEVLHVDVSVARPAPS----- 2778
Bos_taurus        FKEPSSKSDATEDYLLWEVLQEVPTARVPS----- 2775
Rhinatrema_bivittatum KKELDMKLDTIQDKNPWNMLFGDLSARAIEQSTKN----- 2803
Rana_temporaria   FQSQPRLEDGQPDVNGVIOPEPSVNAEEFP----- 2673
.....2950.....2960.....2970.....2980.....2990.....3000

```

```

Pavo_muticus      -----LLSKVTDKEYLSTKHQEIDMLRILQNVTKSMEEDFRNTRHLVKIIEIDLEM 2777
Pavo_cristatus    -----LLSKVTDKEYLSTKHQEIDMLRILQNVTKSMEEDFRNTRHLVKIIEIDLEM 2777
Gallus_gallus     -----LSKVIDKEYLSTKHQEIDMLRMLQSTIKNMEEDFRNTRQLVQIIEIDLEM 2779
Chelonia_mydas    -----LSPKIISKEHFCKKLOEMDIQLQALONIAENIEQDFPKPEMLDLHCDKIGP 2798
Mus_musculus      ---PAACPTPSPAAQKFEHLTAKLOEMDEQLVAVQTMENIEQDFPASVNLNHWKAGL 2797
Rattus_norvegicus PSNPAVCPTPSPSAQKLEHLTAKLOKMDQLLTVQTAENIEQDFPAPEVLNHLWEKAGL 2857
Homo_sapiens      -----SAAHQLEHLSAKLOKIDEQLLAIONIAENIEQDFPKPEMLDLHCDKIGP 2794
Pan_troglodytes   -----SAAHQLEHLSAKLOKIDEQLLAIONIAENIEQDFPKPEMLDLHCDKIGP 2794
Macaca_mulatta    -----FAAHRLEHLTAKLOKIDEQLLAIONIAENIEQDFPKPEMLDLHCDKIGP 2812
Callithrix_jacchus -----STAYQLEHLTAKLOKIDEQLLAIONIAENIEQDFPKPEMLDLHCDKIGP 2845
Canis_lupus_familiaris -----SAARRLEHLTSKLOEIDEQLLAIONIAENIEQDCPRYRMLDRHYDKVEP 2788
Felis_catus       -----SAARRLEHLTSKLOKIDEQLLAIONIAENIERDCPRQKVLDRHCDKIGT 2796
Equus_caballus    -----SAACRLEHLTSKLOKIDEQLLAIONIAENIEQDFPRHEVLDRHCDKVGVP 2827
Bos_taurus        -----PAARRLEHLTAKLOKIDEQLLAIONIAENIEHNYPPHTAPDRHCDKVEP 2824
Rhinatrema_bivittatum -----LSAKIVSKERITSKLOEMDAQLSALONMAENMELDFANTELLVNTIENLGT 2854
Rana_temporaria   -----KVWTPRTLESNDAFYRLKEMDFQLRALONMAESMERDFANTELLVNTIDNLAT 2726
.....3010.....3020.....3030.....3040.....3050.....3060

```


CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/CPLANE11.ppe Feb 1 11:47:44 2022

Page 18 of 21

```

Pavo_muticus      AANSYP-YGHPSFSEDS----- 2793
Pavo_cristatus    AANSYP-YGHPSFSEDS----- 2793
Gallus_gallus     DANDSD-HDPLSFSEDS----- 2795
Chelonia_mydas    AASPNL-GADSLFSEGGG-----VIDEAHVVSVDFFEDLTDEEEEGSRPEHSVTSY TALQ 2852
Mus_musculus      GNHVGL-SSGPDIEKLLASKAISISEEVSLQIQEDVEEQKDAEETSETEFSEAENHSSOK 2856
Rattus_norvegicus VDHVGL-SSRPEIEKLLASKAISISEVFSQITPEDVEDQNNTEEASEAESSVTEDHSSOK 2915
Homo_sapiens      VDHIEF-SSGPEFKKTLASKTISISEEVRFLTHMDEEDQSDKKETSEPEFSITENYSGOK 2853
Pan_troglodytes   VDHIEF-SSGPEFKKTLASKTISISEEVRFLTHMDEEDQSDKKETSEPEFSITENYSGOK 2853
Macaca_mulatta    VDHIEF-SSGPEFKKTLASKTISISEEVRFLTHMDEEDQSDKKETSEPEFSITENYSGOK 2871
Callithrix_jacchus MDHTEF-SSGPEFKKTLASKTISISEEVRFLTHMDEEDQSDKKETSEPEFSITENHSGOK 2895
Canis_lupus_familiaris VDHVEL-SSGPESENTLAPKAIGISEVHFQTHMNKEAPSDRE-TSEAEFSVTETHSSOK 2845
Felis_catus       LDHIEL-SSGLEFEKTSASKATGIS-EAHFLTHRNEEDQSDKEEISEAEFSVTETHSSOK 2854
Equus_caballus    LDHIEL-SSGPESEKKLASKTISISEEVRFLTHVNKEDQSDREETSEAEFSVTETHSSOK 2886
Bos_taurus        VGPIEL-SSGPESEKTFPSKTISISEEVRFLTHVNKEDQSDREETSEAEFSVTETHSSOK 2869
Rhinatrema_bivittatum TIDPES-DAVPVSSRDIG-----VPEKALFSSNVGLS 2886
Rana_temporaria   AVDPDPKEVHPPREPAGPGRGFTLG-----EMVLEPLAEFEFTILNPRALR 2773
.....3070.....3080.....3090.....3100.....3110.....3120

```

```

Pavo_muticus      -----RIIDDGTCSVNGHLTSSSVEDPLQITGLSGVTDIISNLVIEG 2835
Pavo_cristatus    -----RIIDDGTCSVNGHLTSSSVEDPLQITGLSGVTDIISNLVIEG 2835
Gallus_gallus     -----RVMDDG-FHLNGKLSESVEDPLQITGLSDVTDIIRNLVTEG 2836
Chelonia_mydas    AHSLSPANSSAKLL---GRIKSSSDIHINENLGDSDIDNPLQITGLSGITDVIDDLVTEG 2909
Mus_musculus      TYACPSVGSAAACSS--VGWNIPSPGLNDSNELLESSEDQLQVTGLTDIADIIGDLITKS 2914
Rattus_norvegicus AYTCPASAGSAAACSS--VGWNITSPGVNNSKELFKSVSEDQLQVTGLTDIADIIDDLITKR 2973
Homo_sapiens      TCVFPTADSAVSLSSSSDQNTTSPGMNSDELCEVSVDPLQMTGLTDIADIIDDLITKD 2913
Pan_troglodytes   TCVFPTADSAVSLSSSSDQNTTSPGMNSDELCEVSVDPLQMTGLTDIADIIDDLITKD 2913
Macaca_mulatta    THVFPTADSAVSLSS--SDQNTTSSGMNSDELCEVSVDPLQMTGLTDIADIIDDLITKD 2928
Callithrix_jacchus THVFSTADSAVSLSS--SDQNTTSPGMNSDELCEVSVDPLQMTGLTDIADIIGDVITKD 2953
Canis_lupus_familiaris TCVFPSADSAVSLF--SDQNTTSPGVNNSDELCEVSVDPLQMTGLTDIADIIDDLITKD 2903
Felis_catus       TCVLPSADSAVSLF--SGQSTTSPGVNNSDELCEVSVDPLQMTGLTDIADIIDDLITKD 2912
Equus_caballus    TCVFPSADSAVSLSS--SDQNTTSPGVNNSDELCEVSVDPLQMTGLTDIADIIDDLITKD 2944
Bos_taurus        TCVLPSAHSVSLP--SDQNTTSPGVNNSDELCEVSVDPLQMTGLTDIADIIDDLITKD 2927
Rhinatrema_bivittatum LMKEKEEQPSVSNHILADLKTSSDFSRKGRTNESFDDHLNVITGLSDIADIISDLVRDG 2946
Rana_temporaria   LREHPLEVFINAKP--DARLLTEPRQDKRNIKESCPVNEQLQMTGLSDMADILTDLMDG- 2830
.....3130.....3140.....3150.....3160.....3170.....3180

```

```

Pavo_muticus      GISPMEGLGFPKTQANKISRIHDSA---FRHSQKTEKEKKEIRAWMRKQKERMREYMKKL 2892
Pavo_cristatus    GISPMEGLGFPKTQANKISRIHDSA---FRHSQKTEKEKKEIRAWMRKQKERMREYMKKL 2892
Gallus_gallus     GISPMEGLGFPKTQAKKFSRIHDSA---FRYSQKTEKEKKEIRAWMRKQKERMREYMKKV 2893
Chelonia_mydas    GVSTTEPSITKTQARKISRIHDTA---AGHSPKTERERKEIQAWMKRKRKERLLEYLKKL 2966
Mus_musculus      GVSSELGLTECQARSISRIQRP---DRGPRRTAEERREIKAWMRKQKERMSEYLGOL 2971
Rattus_norvegicus GVSSELGLLTEYQARNISRIQHPS---GRRPQRTDEERREIKVWMKRKRKERMAEYLDQL 3030
Homo_sapiens      GVSSELGLLTEQAMG-TSRIQHYS---GRHSQRTDKERREIQAWMKRKRKERMAKYLNEL 2969
Pan_troglodytes   GVSSELGLLTEQAMG-TSRIQHYS---GRHSQRTDKERREIQAWMKRKRKERMAKYLNEL 2969
Macaca_mulatta    GVSSELGLLTEQAKR-TSRIQHSS---GRHSQRTDKERREIQAWMKRKRKERMAKYLNEL 2984
Callithrix_jacchus GISSELGLTEQAKS-ISRIQHSS---GRHPQRTDKERREIRAWMRKQKERMMAKYLNEL 3009
Canis_lupus_familiaris GVSSELGLTEQARNISRIQHSS---GRRTQRTDKERREIQVWMKRKRKERMAEYLNQL 2960
Felis_catus       GVSSELGLLTEQAKTISRIQHSS---GRPTQRTDKERREIQVWMKRKRKERMAEYLNEL 2969
Equus_caballus    GVSSELGLLTEQQRNISRIQHSS---GRRPQRTDKERREIQAWMKRKRKERMAEYLNQL 3001
Bos_taurus        GVSSELGLLTEQARSISRMQHPS---GRRPQRTDKERREIQVWMKRKRKERMAEYLNQL 2984
Rhinatrema_bivittatum GIVATELGLTEAEAKKIFRINAQDPLYGHTPRRTENEKKEIQAWMKRQKERLAHARRKL 3006
Rana_temporaria   GVSASELGLTETQARAIHRQRPQN---TSKRSQKNRSDLRMMKNKQERLLEYRKKL 2885
.....3190.....3200.....3210.....3220.....3230.....3240

```

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/CPLANE11pep Feb 1 11:47:44 2022

Page 19 of 21

```

* * : * . **          : : : *          : * ** : :          : . * : * : *          * : : :
Pavo_muticus          DEQRQKEHNPFFNFKKDMHCRLTSKDILKLLKKKKKEEKDKVLFSEHHSMRISQALSIMNEML 2952
Pavo_cristatus        DEQRQKEHNPFFNFKKDMHCRLTSKDILKLLKKKKKEEKDKVLFSEHHSMRISQALSIMNEML 2952
Gallus_gallus          DEQRQKEHNPFFNFKKYTHCRLTSKDILKLLKKKKKEEKDKRLYAEHHRMRVVSQALSIMNEML 2953
Chelonia_mydas         DEQREREYNPFNLRNMMQFGLSAKEIKLSQKKKDEKDKALFSEHNLRLVSQALSIMNEML 3026
Mus_musculus           AERRGRERNPFCPTSSPFY-MTSRQIRQRQKMKREKDRQLQSKHYQSRLSQAYSIMNELL 3030
Rattus_norvegicus      AEKRGREHDPFCRSRSPFY-MTSRQIRQRQKMKHEKDRQLQSNHYSQRISQAYSIMNELL 3089
Homo_sapiens           AEKRGQEHDPFCPRSNPLY-MTSREIRLRQKMKHEKDRLLLSEHYSRRISQAYGLMNELL 3028
Pan_troglodytes        AEKRGQEHDPFCPRSNPLY-MTSREIRLRQKMKHEKDRLLLSEHYSRRISQAYGLMNELL 3028
Macaca_mulatta         AEKRGQEHDPFCPRSNPLY-MTSREIRLRQKMKHEKDRLLLSEHYSRRISQAYSIMNELL 3043
Callithrix_jacchus     AEKRGQEHDPFCPRSNPLY-MTSREIRLRQKMKHEKDRLLLSEHYSRRISQAYSIMNELL 3068
Canis_lupus_familiaris AEKRGREHDPFCPRSNPFY-MTSREIRLRQKMKNEKDRLLLADHYNQRISQAYSIMNELL 3019
Felis_catus            AEKRGQEHDPFCPRSNPFY-MTSREIRLRQKMKDEKDRLLLSDHYNRRISQAYSIMNELL 3028
Equus_caballus         AEKRSQEHDPFRPRSNPFY-MTSREIRLRQKMKHEKDRLLLSDHYSRRISQAYSIMSELL 3060
Bos_taurus             AEKRGQEHDPFCPRNPFY-MTSREIRLRQKMKHEKDRLLLSDHYSRRISQAYTLMNELL 3043
Rhinatrema_bivittatum DELREQEHHPFQPGQYHP--TSKEIKQSQKMKKEKNKALLSEHFSHRVSEAFSLMKDML 3064
Rana_temporaria        EELREREHKPFQSQHQANTLISSKSIWQTORLKNKEDRMLLSEHHSRRISDAMSIMQEMV 2945
.....3250.....3260.....3270.....3280.....3290.....3300

```

```

*          : .          * .          :
Pavo_muticus          SETVMLPASEHRS-WSR-ARSPQECRKQHIMSTKGGHPNSRVLS----ERSRTAA----R 3002
Pavo_cristatus        SETVMLPASEHRS-WSR-ARSPQECRKQHIVSTKGGHPNSRVLS----ERSRTAA----R 3002
Gallus_gallus          SESVMLPASEHRP-WSR-ARSPQECRKHHIVSTKGGHPNNRVMS----ERSRTAV----R 3003
Chelonia_mydas         SETVQLPASEFRP-LSKTMRSRDFRKHPTSAARGSRPGSRSLASQAERSRTAA----K 3081
Mus_musculus           SDSAHITAPAENP-LPPG-----PYRRORGSSPKRENAHQSLPVMRPGGDRHIS----R 3080
Rattus_norvegicus      SDSVQITKPADKP-LGR-----RROQCSSPKRENAQQNLSSNRPAAGGRHIS----G 3136
Homo_sapiens           SESVQLPTLPQKP-LPNKPSPTQSSSCQHCPSPRGENQHGHSEFLINRPGKVKYMS----K 3083
Pan_troglodytes        SESVQLPTLPQKP-LPNKSSPTQSSRCQHCPSPRGENQHGHSEFLINRPGKVKYMS----K 3083
Macaca_mulatta         SESVQLPAVPQKP-LPNKPSPTHSSRYQHCPSPRGENQHGYSEFLINRPGKVKYMS----K 3098
Callithrix_jacchus     SESVQLPTTAWKP-LPNKSSPTQFSRYQHCPSPRGENQHGHSEFLNQSGKVKYTF----K 3123
Canis_lupus_familiaris SESVQLPKTAQKA-LPHKPRAAQISQEOHCLSPRENKYGHNIPTNQPGKFRYIS----R 3074
Felis_catus            SESVQLPTTAAQKP-LLNRPRTAHVSRQCCSLSPRREYQHGHSEIPINQPGKFRYIF----R 3083
Equus_caballus         SESAQLPAAQKP-LPDRPRTAHTSRORSLSRGENRHGHNFPIINQPGKVRNIS----K 3115
Bos_taurus             SESVQLSAAQKP-LPN--RKAHIPRROLSPSPRGENRHGHNFPIYRPGKVRHTST----K 3097
Rhinatrema_bivittatum SDKVQLSATEVKPSSSTPDRIPLNFROHFTSAKSPYFRSRSESSRSLASRIEKRSAPFR 3124
Rana_temporaria        SAAPHIPGTGSK--PSRSQTSLSRPRTAQPSSTKSRTVAHSLSTAHNEKSRAS----R 2999
.....3310.....3320.....3330.....3340.....3350.....3360

```

```

Pavo_muticus          PCFGQKGHHFTPALGSTWS----- 3021
Pavo_cristatus        PCFGQKGHHFTPALGSTWS----- 3021
Gallus_gallus          PRFGQKGHHFTPALGSAQS----- 3022
Chelonia_mydas         PDFGKARSHSTPPQGLAQSGGTATVVLOKNISKGRIRNARHYPVNSRQVAIRPQDQMSQV 3141
Mus_musculus           SSHLCKGQ----PRGSSQLR----- 3096
Rattus_norvegicus      SRHLRKGEPLGRPHGSSQLR----- 3156
Homo_sapiens           PSYIHKRKSFGQPQGSPPWPHGTATFTTIQKKAGGAKAAVRKATQSPVTFQK----- 3133
Pan_troglodytes        PSYIHKRKSFGQPQGSPPWPHGTATFTTIQKKAGGAKAAVRKATQSPVTFQK----- 3133
Macaca_mulatta         PSYIHKRKSFGQPQGSPPWPHGTATFTTIQKKAGGAKASVRKAMQSPVTFRR----- 3148
Callithrix_jacchus     PSCIHK-KSFGQPQGSPLPRGTATFTVQKAGRAKAVVRKAMQSPVTFRR----- 3172
Canis_lupus_familiaris PSYIRKKGKPLGHPQGPWPWPHGTATFTTIQNKGGGANVAARKAVPSPVTFQKDWISRTNPRA 3134
Felis_catus            PSCTRKGKAFGQPEGRPWPHGTATFTTQNKGDGAKVAVRSXVLSPVTFHR----- 3133
Equus_caballus         PSCTPKGKPLGQPHGSPWPRGTATFTTIQKSGGAKMAVRKAVQSPVTFQK----- 3165
Bos_taurus             PSYTQKGRPFQGSQGSPPWPRETATFTTQKAGAAKMVVRKVVOQSPVTIIRK----- 3147
Rhinatrema_bivittatum NGFGQTRSLAIPTRSSAQPRVTSLPRDRMSQITRRGMLTDQKKRKLQYQANSMMQKPNLG- 3183
Rana_temporaria        AGVLQPRSISSALRTQTRGTATFTVLPKSVSEPIILRPSLPSYAVNRRYDPTLPGRDTSQI 3059
.....3370.....3380.....3390.....3400.....3410.....3420

```

CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/CPLANE11pep Feb 1 11:47:44 2022

Page 20 of 21

```

Pavo_muticus      -----KAAEYR---VSRISQOKPPAVSTAV 3043
Pavo_cristatus    -----KAAEYR---VSRISQOKPPAVSTAV 3043
Gallus_gallus     -----KAAEYR---MSRVSEQKYPVAVSTAF 3044
Chelonia_mydas    THRGMLTDFNQRRTWLQENASQROGLSKGRPN SARQASDYQTLSTRNLRRPTPSAAAIQR 3201
Mus_musculus      -----GSQPPCQSOKPLRSRGAAGVGPV 3120
Rattus_norvegicus -----GSNPPYRSQQPMRSHGAVGVVPLV 3180
Homo_sapiens      -----GSNAPCHSLQHTKKHGSAGLAPQT 3157
Pan_troglodytes   -----GSNAPCRSLQHTKKHGSAGLAPQT 3157
Macaca_mulatta    -----GSNAPCRSQQHTKKHGNAGLAPQT 3172
Callithrix_jacchus -----GSHAPCHSLQHTKKHGSAGLAPQT 3196
Canis_lupus_familiaris IHSDLKRRKLQSHP-----CRKQGS GAPCR-LQCTKNHISAELSPOS 3175
Felis_catus       -----GSSAPCGSLQCTKKHISAELSPRS 3157
Equus_caballus    -----GSRAPCCSLQHTKS--RAGLAPQT 3187
Bos_taurus        -----GPNAPCQ--HCIKSHRSAGLAPQT 3169
Rhinatrema_bivittatum -----IRRPASAKASEYERSCRSKLRPMNHATFSOT 3216
Rana_temporaria   TRRGMLTGRIRSNAN-----SKTKKSLKNTTKLLKQHHQDRSSKATS 3102
.....3430.....3440.....3450.....3460.....3470.....3480

```

```

: *      ***      :      : : :
Pavo_muticus      QTEGFDHETDRDVE SPWTV PDDIQRILQDSHD-TLFDSSPPT-----VSFSP 3090
Pavo_cristatus    QTEGFDHETDRDVE SPWTV PDDIQRILQDSHD-TLFDSSPPT-----VSFSP 3090
Gallus_gallus     ETEGFDHETGRDVE SPWTV PDDIQRILLEDSHD-TLFDSSAP-----LSFSP 3089
Chelonia_mydas    EETGLDYESERDSISPWSVPVDIQRLLHDDYD-SLLEVSVPHE-----EDCSP 3248
Mus_musculus      QQACREDEREEMVSPWTL PSEIHRILHGRPE-SLLQDMSPAD-----EEEPEP 3168
Rattus_norvegicus QQACIEDEREDMVSPWTL PSEIHKILHDSRG-SLLQDMSAAD-----EEEPE- 3227
Homo_sapiens      KQVCVEYEREETVSPWTIPSEIHKILHESHN-SLLQDLSPT-----EEEPEH 3205
Pan_troglodytes   KQVCVEYEREETVSPWTIPSEIHKILHESHN-SLLOGLGPQLSFQFNRTCLQLKKKSQS 3216
Macaca_mulatta    KQVCVEYEREETVSPWTIPSEIHKILHDSHN-SLLQDLSPT-----EEEPEH 3220
Callithrix_jacchus KHVCVEYEREETVSPWTIPSEIREILHESHN-SLLQDLSPT-----EEELEH 3244
Canis_lupus_familiaris KQVCIEYEREETVSPWTVPSDIRTVLRESHS-SLLQDLSATE-----EEREPE 3222
Felis_catus       KQVRIEYER-ETVSPWTT-----VHESPA-SLLQDLAATE-----EELEP 3196
Equus_caballus    KQVCIEYEREETVSPWILPADIRQVLRESHS-SLLQDLSPTK-----EPEPKP 3234
Bos_taurus        KEVCIEYEREETVSPWLVPDIRAILHESHN-SLLQDSSPT-----EKSEA 3216
Rhinatrema_bivittatum EETDPDYESDRDILSPWNVPPEINQILNCNPSGSLFQDDDRFSQSFN----- 3263
Rana_temporaria   PQSPVQEEYDRDIVSPWELPEEIHRIILYSSRN-SIFSEGSVGD-----GDNSR 3149
.....3490.....3500.....3510.....3520.....3530.....3540

```

```

* *      .: *      * *      .
Pavo_muticus      VAN-----NDTDGISESTGSILSGLDWNAIEAMVADVED----- 3124
Pavo_cristatus    VAN-----NDTDGISESTGSILSGLDWNAIEAMVADVED----- 3124
Gallus_gallus     VVN-----HETDRISESTGSILSRLDWNAIEAMIADVDT----- 3124
Chelonia_mydas    LSV-----NDS--VSESTGSILSKLDWNAIEAMVANVEEK----- 3281
Mus_musculus      PLLAG-----GMDSVSESTGSILSKLDWKAIEDMVASVE-----DKNLSVHWA 3211
Rattus_norvegicus HSLAG-----GMDSVSESTGSILSKLDWKAIEDMVASVE-----EKNLSVHWA 3270
Homo_sapiens      PFG-----VGGVDSVSESTGSILSKLDWNAIEDMVASVE-----DQGLSVHWA 3248
Pan_troglodytes   ILLGWAVWTACLRALAASSASWTGMP SKTWWP AWRTACLSTGPWTKTWISFGFHAQAS 3276
Macaca_mulatta    PFG-----VGGMDSVSESTGSILSKLDWNAIEDMVASVE-----DQGLSVHWA 3263
Callithrix_jacchus PFG-----VGGMDSVSESTGSILSKVDWNAIEDMVASVE-----DQSLSVHWA 3287
Canis_lupus_familiaris LF-----GGIDSVSESTGSILSKLDWKAIEDMVASVE-----DKSLSVHWA 3263
Felis_catus       PFG-----VGGVDSVSGSTGSILSRLDWNAIEDMVAGVD-----DKNLSLHWA 3239
Equus_caballus    PFE-----VSGMDSMSESTGSILSKLDWNAIEDMVASVE-----DKSPSVYWA 3277
Bos_taurus        PLG-----VGGTESLSESTGSILSKLDWDAVEDMVAGVE-----DKSLSVRWA 3259
Rhinatrema_bivittatum -----NDNTSESTGSLLSKLDWKAIEEMVANVEGN----- 3293
Rana_temporaria   NAN-----RDNASDSTGSILSKLDWKAIEDLVASVGST----- 3182
.....3550.....3560.....3570.....3580.....3590.....3600

```


CLUSTAL 2.1 MULTIPLE SEQUENCE ALIGNMENT

File: /media/morpheus/disk1/fst/pep_msa/CPLANE11.ppe Feb 1 11:47:44 2022

Page 21 of 21

Pavo_muticus	-----	3124
Pavo_cristatus	-----	3124
Gallus_gallus	-----	3124
Chelonia_mydas	-----	3281
Mus_musculus	LDQ---	3214
Rattus_norvegicus	LDQ---	3273
Homo_sapiens	LDL---	3251
Pan_troglodytes	TSVMWF	3282
Macaca_mulatta	LDL---	3266
Callithrix_jacchus	LDL---	3290
Canis_lupus_familiaris	LGL---	3266
Felis_catus	LDL---	3242
Equus_caballus	LDL---	3280
Bos_taurus	LDL---	3262
Rhinatrema_bivittatum	-----	3293
Rana_temporaria	-----	3182
	