```
                    1       10        20        30        40        50        60        70        80        90       100       110       120       130
                    |-------+---------+---------+---------+---------+---------+---------+---------+---------+---------+---------+---------+---------|
            Mp10    GPAYTTKYDHIDIDQVLGSKRLVNSYVQCLLDKKPCTPE-GAELRKILPDALKTQCVKCNATQKNAALKVYDRLQRDYDKEWKQLLDKWDPKREYFQKFQQFLAEEKKKGVVKF
     Acypi000097    GTAYTTKYDHIDIDQVLASKRLVNSYVQCLLDKKPCTPE-GAELRKILPDALKTQCAKCNATQKNAALKVYDRLQRDYDKEWKQLLDKWDPKREQFQKFQQFLAEEKKKGVVKF
      BommoCSP10    MPKYDERYDYLDVDDIFRNKRLVRNYVDCLINAQRCTPE-GKALKRILPEALRTKCIRCTERQKRTSVKVIRRLKNEYPEEWAKLASRWDPTGDFTRYFEDYLAKEHFNTIPGSGPTVNVLSLQTTPPPP
        HelzePAN1   MPKYDSRYDYLDVDAVFTNKRLVRNYVDCLINAVRCTPE-GKALKRILPEALRTKCVRCTERQKRTAVKVIKRLKNEYPDEWAKLASRWDPTGDFTRYFEEFLAKEQFNTIPGSAGIGSEIPT-SSPLAP
     Acypi000094    TSSYPTRYDFIDIEAVMNNERIIKILFNCVMNQGPCTRE-GLELKRIVPDAIQTECAKCNDRQRKQAGKVLAHLLQYKPEYWNMLVKKFDPNNVYLRKYMADNDDDEKLSLQKLTNNTTK
       BommoCSP4    TSTYTTQYDEVDIKEIMGNERLLVAYIGCLLDKNPCTPE-GKELKRNIPDALQSDCSKCSDKQRENADAWIEFMIDNRPEDWTKLEERYNPDGSYRTKYLEGKHNATSNVDESK
     Acypi000096    EEKYTTKFDNFDVDKVLNNDRILTSYIKCLLDQGNCTNE-GRELKKVLPDALKTDCSKCTAVQKDRSEKVIKFLIKNRSKDFDNLTAKYDPSGEYKKKIEKFDAERAAAAKH
     Acypi000095    QEKYSTKYENFDVDKVLNNDSLLTSYINCLLDEGNCTEE-GQALKRILPDALKTNCGKCTDAQKLKIEKIMKFLIKNRSIDFDRLTAKYDPSGEYKKKLEKFSA
     Pedhu594660    PQKYSTKYDNIDIDSILKNDRLLESHVNCLLDKGPCTKE-GQDFKDYLPEAIDTSCEKCTVAQKRIVKKAAKYLMEKKKPAWEQIRNKYDPMNEHTKDFNKFMEEPIE
     Acypi009116    PAKYTTKYDNVNIDDILNNDRLVASYFKCLMETGKCTPE-GEEIKRWLPEAVENKCEDCSEKQKIGSEKIIKFLFEKKNDMWKQLEEKYDPKGLYRQRYSEDAKKLNIDV
     Pedhu594430    DEKYSTKYDNIDLDSILKNDRLLQNYVNCLLDKGTCTPE-GTDLKKVLPDALENACAKCSEAQKRGAEKVIRHLLENKKDVFTLLEAKYDPNGVYRKKYEAEAQKRKIQL
     Pedhu594540    PTKFTTKFDDVNLDEILKSERLLKNYFDCLMDTKPCTPD-GTELKKSLPVALKEECAGCSEKQRVGAETVIHYISNNKPELWKALEDKYDPEQVYRTKHADFAAKKGIKV
      BommoCSP14    ESTYTDKWDNINVDEILESNRLLKGYVDCLLGKGRCTPD-GKALKETLPDALEHECVKCTGKQKSGADKVIRHLVNKRPDLWKELAVKYDPDNIYQARYKDKIDAVKGSA
XP028028218Thap1    ESTYTDKWDNINVDEILESTRLMKGYVDCLLERGRCTPD-GKALKETLPDALEHECVKCTGKQKSGADKVIRHLVNKRPDLWKELAVKYDPDNIYQARYKDKIDAVKGSA
      BommoCSP1     DDKYTDKYDKINLQEILENKRLLESYMDCVLGKGKCTPE-GKELKDHLQEALETGCEKCTEAQEKGAETSIDYLIKNELEIWKELTAHFDPDGKWRKKYEDRAKAKGIVIPE
      BommoCSP8     DDKYTDRYDNVNLDEVLSNSRLLQPYIKCILDKDRCAPD-AKELKEHIREALETECAKCTEAQKKGTRRVIGHLINNESKSWNELTAKYDPENKFTAKYEKELREIKA
      BommoCSP9     PEQYTDKYDTVDLDQLISNRRLLIPYVHCILEKGQCTAE-GKELKSHIKEALETNCAKCTKAQKGGTEKMIGHLINHEAEFWEELKAKYDPTNEFTKKYETELKRVTA
BacamWP256881044    SSTYTDKYDNINIDEILSNKRLLTPYIKCMLDEIKCSTE-GKELKSHIKDALENECIKCTDAQKSGTRKVIGHLINKEPEYWSQLTKKYDPKQHYSQKYEKEL
XP028025219Thap1    AGSYSDRYDNINVAEILGNKRLLTAYIKCVLEEGKCTAE-GKELKSHITDALQTGCTKCTGAQRKGIRRVIKHLIDSEPGYWDRLVDMYDPKRVYTGKYEKELRTIKA
      BommoCSP6     AEKYTDKYDNIDVDEILENRKLLVPYIKCVLDEGRCTPD-GKELKAHIKDGMQTACAKCTDKQKVSARKIVKHIKQHEADYWEQMKAKYDPKDEFKEIYEGFLAGQN
      BommoCSP7     IARPKTPFDNINIEEIFENRRLLLGYINCILERGNCTRA-GKDLKSSLKNVLEENCDKCSEDQRKSIIKVINYLVSSEPESWNQLKSKYDPEGKYLIKYEAKMESN
     Pedhu594550    ISSYSTRYEHINLDDVLYNNRLLKNTYKCMIGTGRCTAE-ANKLKAYFPDMLETKCSKCTPRQKKKIKKAVTFLMKHKPEMWEGLLDKYDPKRELSKDMLTDPNFLGKI
      BommoCSP15    AEFYSSRYDDFDVKPLVENDRILQSYTNCFLDKGPCTPD-AKEFKKVIPEALETTCGKCSPKQKQLIKTVIKAVIERHPEAWEELVNKYDKDRKFRPSFDKFINEDD
      BommoCSP11    EEYYSSQYDNFDVEQLVGNLRLLKNYAKCFLDQGPCTAE-GTEFKKRIPEALRTKCAKCNPKQRHLIRTVVKAFQTKLPDLWEELAIKEDPKGQYKHEFTAFINAMD
XP028029186Thap1    EEYYSSQYDNFDVEQLVGNLRLLKNYAKCFLDQGPCTAE-GTEFKKRIPEALRTKCAKCNPKQRHLIRTVVKAFQTKLPDLWEELAIKEDPKGQYKQEFTAFINATD
      BommoCSP13    DLFYDKKYDNFNVDEIIDNPRLLKAYTFCFNDKGKCTAE-GNDFKKWIPESLQTSCGKCSEKQKYLVAKFVHAIKDKMPDEFDILRKLHDPKGEYTENLDKFLETYGH
      BommoCSP3     LAADLSKYENFDVEPIVTSDRLLKAYINCFLDKGRCTPE-ASDFKKALPDTIATNCGKCTEKQKANVRKVIKVIQQKHSTEWEKLVKKHDPSGKHRADFDKFLLGS
XP012549936Thap1    IWCYDEKYDKIDVDKILSDDKLFTDYINCMLDKGPCEVEYSSEFKELLPEVIATSCAKCTPIQKTGLRKTVKALSVKRPDDFSQFRAKYDPKGEYEKQFAAFVVATD
      BommoCSP20    QKYYDSRYDYYDIDHLVQNPRLLKKYLDCFLGKGPCTPI-GRLFKQVMPEVITTACAKCTPTQKRFARKTFNAFRRYFPETLMELRRKFDPESKYYDAFEKVITNA
     Acypi002311    LKKFLSTLEKIDIDQILNNHRLMSNNVKCFLNEGPCTAQ-LREMKKMLPALVKDSCASCTKEQKNIIKKSMEAIQARRPNEYKQVSKFFDPEGKYQKKFLENLNTD
      BommoCSP17    RQQSYPRNDNININAILQNDRILLGYFKCVMDRGPCTKD-GKTFKRALPEALPTACARCSNKQKAAFRTLLLAIRARSEPSFLELLDKYDPSRSNRELLYTFLATGL
XP030028674Thap1    TQQNYPRNENININAILQNDRILLGYYKCVMDKGPCTKD-GKVFKRALPEALPTACARCSQKQKAVFRTLLLAIRAKSEPRFMELLDKYDPSRANRDTLYKFLATGV
        OIC81003    QDKYEPIDDSFDASEVLSNERLLKSYTKCLLNQGPCTAE-LKKIKDKIPEALETHCAKCTDKQKQMAKQLAQGIKKTHPELWDEFITFYDPEGKYQTSFKDFLES
      BommoCSP2     QDKYEPIDDSFDASEVLSNERLLKSYTKCLLNQGPCTAE-LKKIKDKIPEALETHCAKCTDKQKQMAKQLAQGIKKTHPELWDEFITFYDPQGKYQTSFKDFLES
        OIC85870    QDKYEPIDDSFDASEVLSNERLLKSYTKCLLNQGPCTAE-LKKIKDKIPEALETHCAKCTDKQKQMAKQLAQ
     Acypi000345    SGYYLSTYDNLDVGHLLRNKKVVSGFVKCFVNEGPCTPDGKLVKAYLLPEIIRTVCGKCTPRQKDMSRAVLRHLYTYRRADFDKIMQIYDTDNKKNEIINFMNQK
      BommoCSP12    KETYSSENDDLDIEALVGNIDSLKAFIGCFLETSPCDAV-SGDFKKDIPEAVAEACGKCTPAQKHLFKRFLEVVKDKLPQEYEAFKTKYDPQGKHFDALLSAVANS
KlepnWP159189367    GEHYTDRYDNVDLDEILSNKKVLENYVKCILDQGKCTPD-GTELKGHIKDALETECAKCNERQKDGTRRHHGEHYT
     Acypi005842    KDSSLPNVSEDVLDKALSDRRFVQRQLKCATGEGPCDPI-GRKIKAHAPLVLRGMCVKCSQSEIKQIQRVMSHIQKNYPKEYTKMLKQYQSGF
      BommoCSP19    AQQNRPQVTDTALDEALNDKRFIQRQLKCALGEAPCDPI-GKRLKTLAPLVLRGACPQCSPQETKQIQKTLSYVQRNFPQHWAKLVRQYAG
     Acypi003368    EDDDKPDFITTFDLIRLLDEKYAMKQFYCVINEDPCDSV-GMRLKATIPEEINRDCERCTATETNNIRRILNYVKKHYPKFWERVEPIYRDKMTVLTANIVKIQ
      BommoCSP16                                            AHITDALQTGCTKCTGAQRKGIRRVIKHLIDSEPGYWDRLVDMYDPKRVYTGKYEKELRTIKA
      BommoCSP18                                             LLPEVIATSCAKCTPIQKTGLRKTVKALSVKRPDDFSQFRAKYDPKGEYEKQFAAFVVATD
       BommoCSP5    AGSYSDRYDNINVAEILGNKRLLTAYIKCVLEEGKCTAE-GKELK
       Consensus    ...y...yd..d.d..l.n.rll..y..C.l..gpCt.e g..lk...p.al.t.C.kCt..#k....k....l....p..w..l..kydp...y....................

                    131     140       150       160       170       180       190       200       210       220       230       240       250       260
                    |-------+---------+---------+---------+---------+---------+---------+---------+---------+---------+---------+---------+---------|
            Mp10
     Acypi000097
      BommoCSP10    PPPPSRPASVFTNPPPPVMSTSPRPVVLNRYLFNNLFFIKEDRRTCSQRETQMKLKVR
        HelzePAN1   PRAPTVAPTVATPTPAATEPTPPRPVVLNRFGDEGELMMGSPSSAGITPRPMTQATTRPTTTMRPVNTRPVPPRPTMMTWAGAASNTQPTRFPLRPSPSDVPPPYSTAITLIDQIGYKIIKTTELVTDLL
     Acypi000094
       BommoCSP4
     Acypi000096
     Acypi000095
     Pedhu594660
     Acypi009116
     Pedhu594430
     Pedhu594540
      BommoCSP14
XP028028218Thap1
      BommoCSP1
      BommoCSP8
      BommoCSP9
BacamWP256881044
XP028025219Thap1
      BommoCSP6
      BommoCSP7
     Pedhu594550
      BommoCSP15
      BommoCSP11
XP028029186Thap1
      BommoCSP13
      BommoCSP3
XP012549936Thap1
      BommoCSP20
     Acypi002311
      BommoCSP17
XP030028674Thap1
        OIC81003
      BommoCSP2
        OIC85870
     Acypi000345
      BommoCSP12
KlepnWP159189367
     Acypi005842
      BommoCSP19
     Acypi003368
      BommoCSP16
      BommoCSP18
       BommoCSP5
       Consensus

                    261     270
                    |-------|
            Mp10
     Acypi000097
      BommoCSP10
        HelzePAN1   RNTVRAVVGR
     Acypi000094
       BommoCSP4
     Acypi000096
     Acypi000095
     Pedhu594660
     Acypi009116
     Pedhu594430
     Pedhu594540
      BommoCSP14
XP028028218Thap1
      BommoCSP1
      BommoCSP8
      BommoCSP9
BacamWP256881044
XP028025219Thap1
      BommoCSP6
      BommoCSP7
     Pedhu594550
      BommoCSP15
      BommoCSP11
XP028029186Thap1
      BommoCSP13
      BommoCSP3
XP012549936Thap1
      BommoCSP20
     Acypi002311
      BommoCSP17
XP030028674Thap1
        OIC81003
      BommoCSP2
        OIC85870
     Acypi000345
      BommoCSP12
KlepnWP159189367
     Acypi005842
      BommoCSP19
     Acypi003368
      BommoCSP16
      BommoCSP18
       BommoCSP5
       Consensus
```