```
H. sapiens        -----MPSLPQEGVI--QGPSPLDLNTELPYQ---------------------------- 25
M. musculus       -----MPSLPQDGVI--QGSSPVDLGTELPYQ---------------------------- 25
A. carolinensis   -----MPSLPNEGDN--QGNSSLTLRSDLSFQ---------------------------- 25
G. gallus         -----MPSLPNEGDN--HGTTAVTLRSELPYQ---------------------------- 25
X. laevis         -----MPSLPNESDH--QATCSLSMHSDLPYQP--------------------------- 26
L. chalumnae      -----MPSFPNNAGN--QGTSSLAMTTELSFQ---------------------------- 26
D. rerio          -----MPSPPNDGDN--QRTSPMKMSPALTNQ---------------------------- 25
S. kowalevskii    MHMARMPSASSLPVYKMSVTSSASISSLSSYDKGEQSAKISGSRSATVMENGLDDDDERQ 60

                                  β1        α1        β2        β3
H. sapiens        ----STMKRKVRK--KKKKGTITANVAGTKFEIVRLVIDEMGFMKTPDEDETSNLIWCDS 79
M. musculus       ----CTMKRKVRK--KKKKGIITANVAGTKFEIVRLVIDEMGFMKTPDEDETSNLIWCDA 79
A. carolinensis   ----STIRRKVRE--KKKHGTITANVAGTKYEIVRVVIEEMGYLKTRDEDETANLIWSDC 79
G. gallus         ----STIKRKVR---KKKNGVITANVAGTKYEIVRIVIQELGFVKTRDEDETANLIWSDS 78
X. laevis         ---SSSIKRKARK--KKKNGAITANVVGTKYEIVRLVIEEMMFTKARDDDETANLIWSDC 81
L. chalumnae      ----NTIKRKVR---KKKKGTLAANVAGTKYEIVRLAIDEMGFIKTRDDDDTANLIWSDS 78
D. rerio          ----NGVKRKVRTKKKKKKGFITANVIGTKYEIVRIVIEELTFHKARDDDETANLIWNDS 81
S. kowalevskii    TRTSSSSSNQRQKKTKRKKLPIMINLSGTKYEIVRTVSEQFGIITSKEDDQNSFLYWSDS 120

                  α2        β4        α3        α4                  β5
                                      *
H. sapiens        AVQQEKISELQNYQRINHFPGMGEICRKDFLARNMTKMIKSRPLDYTIVPRTWIFPAEYT 139
M. musculus       AVQQEKITDLQNYQRINHFPGMGEICRKDFLARNMTKMIKSRPMDYTIVPRTWIFPSEYT 139
A. carolinensis   AVQQEKIAELRNYQRINHFPGMGEICRKDFLARNMTKMIKSLPQEYSIPRTWIFPAEYT 139
G. gallus         AVQQEKIAELRNYQRINHFPGMGEICRKDFLARNMTKMIKCQPQEYTHIPRTWIFPAEYT 138
X. laevis         AVQHEKIAELRNYQRINHFPGMGEICRKDCLARNMTKMIKCQPHEYNHIPRTWIFPAEYT 141
L. chalumnae      AVQHEKIAELRNYQRINHFPGMGEICRKDCLARNMAKMIKNQPTEYCTPRTWILPAEYT 138
D. rerio          AVQHEKIAELRNYQRINHFPGMGEICRKDCLARNMAKMIKSQPQEYSIPKTWIFPAECT 141
S. kowalevskii    FVSSERIVDLKPYQRINHFPGMGEICRKDCLARNITKIGKAHEEEYNESPRTWILPSEYN 180

                  α5        β6        β7        β8
                            + +
                  * *                 *         ++++
H. sapiens        QFQNYVKELKKKRKQKTFIVKPANGAMGHGISLIRNGDKLPSQDHLIVQEYIEKPFLMEG 199
M. musculus       QFQNYVKELKKKRKQKTFIVKPANGAMGHGISLIRNGDKVPSQDHLIVQEYIEKPFLMEG 199
A. carolinensis   QFQNYVKELKRKRKQKTFIVKPANGAMGHGISLTRNGEKLHSQEHLIVQEYLDKPFLMEG 199
G. gallus         QFQNYVKELKKKRRQKTFIVKPANGAMGHGISLIRNGEKLQAQDHLIVQEYLDKPFLMEG 198
X. laevis         QFQTYIKELKKKRRQKTFIIKPANGAMGHGISLTRNGEKLQAQDHLIVQEYLEKPFLLES 201
L. chalumnae      QFQNYVKELRKKRKQKTFIVKPANGAMGHGISLIRNGEKLQAQDHFIVQEYIDKPFLMEG 198
D. rerio          QFQNYVKELKRKGKQKTFIVKPANGAMGHGISLIRNCEKLPVQDHFIVQEYLDKPFLMEG 201
S. kowalevskii    TFQCYVRDLKKKKHKTFICKPANGAMGNGISIFRNGEKIPQHDHMIIQEYLDKPFLIDG 240

                  β9        β10       β11
                  + + *
H. sapiens        YKFDLRIYILVTSCDPLKIFLYHDGLVRMGTEKYIPPNESNLTQLYMHLTNYSVNKHNEH 259
M. musculus       YKFDLRIYILVTSCDPLKIFLYHDGLVRMGTEKYIPPNESNLTQLYMHLTNYSVNKHNER 259
A. carolinensis   YKFDLRIYILVTSCDPLKIFLYHDGLVRMGTEKYHPPNDSNLSQLYMHLTNYSVNKHNEN 259
G. gallus         YKFDLRVYILVTSCDPLKVFLYHDGLVRMGTEKYHPPSDSNLSQLYMHLTNYSVNKHNEH 258
X. laevis         YKFDLRIYILVTSCDPLRIFLYNDGLVRMGTEKYHSPSESNLSQLYMHLTNYSVNKHNEN 261
L. chalumnae      YKFDLRIYILVTTCDPLRIFLYNDGLVRMGTEKYHPPNDSNLSQLYMHLTNYSVNKHNEN 258
D. rerio          YKFDLRFYILVTSCDPLRVFLYNDGLVRMGTEKYHTPNESNLNQLYMHLTNYSVNKHNEN 261
S. kowalevskii    YKFDLRVYVLVTSCDPLRIFLYNDGLVRLSTEKYCHPTESNVDQLFMHLTNYSVNKKSDN 300

                  β12       α6        α7
                            *
H. sapiens        FERDETENKGSKRSIKWFTEFLQANQHDVAKFWSDISELVVKTLIVAEPHVLHAYRMCRP 319
M. musculus       FERNETEDKGSKRSIKWFTEFLQANQHDVTKFWSDISELVVKTLIVAEPHVLHAYRMCRP 319
A. carolinensis   FERDETEDKGSKRSIKWFTEFLQTNHLDVSKFWNDISELVVKTLIVAEPHVLHAYRMCRP 319
G. gallus         FERDETEDKGSKRSIKWFTEFLETNNLDVSKFWNDISELVVKTLIVAEPHVLHAYRMCRP 318
X. laevis         FERDETENRGSKRSIKWLTEFLRANDYDISKFWSDISDLVVKTLIVAEPHVLHAYRMCRP 321
L. chalumnae      FERDETADRGSKRSIRWFTEFLQTNDYDVMKFWNDVSELVVKTLIVAEPHVLHAYRMCRP 318
D. rerio          FERDETVDKGSKRSIGWFTEFIRINDYDVAKFWGDVSELVVKTLLVAEPHVLHAYRMCRP 321
S. kowalevskii    FEKTDDVDSGSKRSIKFLNDFLRKNDFDVAALWKSIADVIIKTMVVAEPHVLHAYRMCRP 360

                  β13       β14       α8
                            +   ++    *
H. sapiens        GQPPGGESVCFEVLGFDILLDRKLKPWLLEINRAPSFGTDQKIDYDVHRGVLLNALKLLN 379
M. musculus       GQPPGGESVCFEVLGFDILLDRKLKPWLLEINRAPSFGTDQKIDYDVHRGVLLNALKLLN 379
A. carolinensis   GQSPGSDSVCFEVLGFDILLDRKLKPWLLEINRAPSFGTDQKIDYDVHKGVLLNALKLLN 379
G. gallus         GQAPGSDSVCFEVLGFDILLDRKLKPWLLEINRAPSFGTDQKIDYDVHKGVLLNALKLLN 378
X. laevis         GQHPTSESICFEVLGFDIILDRKLKPWLLEINRAPSFGTDQKIDHDVHKGVLLNALKLLN 381
L. chalumnae      GQPPGSDSVCFEVLGFDIILDRKLKPWLLEINRAPSFGTDQKIDFDVKNGVLVNALRLLN 378
D. rerio          GQPPGSASVCFEVLGFDIILDRKLKPWLLEINRAPSFGTDQKIDYDVHKGALLNALKLLN 381
S. kowalevskii    GQPPGGDSVCFEILGFDILLDRKLKPWLLEINRSPSFGTDQKIDQEIKGGLLEDTLRLLN 420

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                  ooo       o  o                        ooo
H. sapiens        IRTSDKRRNLAKQKAEAQRRLYGQNSIKRLLPGSSDWEQQRHQLERRKEELKERLAQVRK 439
M. musculus       IRTSDKRKNLAKQKAEAQRRLYGQNPVRRLSPGSSDWEQQRHQLERRKEELKERLLQVRK 439
A. carolinensis   IRTSDKRKNLAKQKAEAQKRLYGQGSMKRLSPVSSDWEKQRRSLERRREELKETLAQVRK 439
G. gallus         IRTSDKRRNLAQQKAEAQKRLYGQGSMKRLLPGSSDWEKQRHSLERRKEELKERLAQVRK 438
X. laevis         IRASDKKKNLAKQKAEAQKRLYGQGSMKRLSPASSDWEKQRHTLERRKEELKERLSQVRK 441
L. chalumnae      IRASDKRKNLARQKAEAQKRLYGLSSIKRLSPCSSDWEKQRHTLERRKVELKERLAQVRK 438
D. rerio          IRASDKRRNLAQQKAEAQRRLYGQGSMRKLTAGSSEWEKQRHLLERRREELKERLAQVRK 441
S. kowalevskii    IKPSDRRRGLAAQKLESQKRLLR--PTRRSETELTDLDKKRVIVEKRRDELKERLAQVRR 478

                  β15       α9
                                                  *  *        *        **
H. sapiens        QISREEHENRHMGNYRRIYPPEDKALLEKYENLLAVAFQTFLSGRAASFQRELNNPLKRM 499
M. musculus       QVSQEEHENRHMGNYRRIYPPEDKALLEKYEGLLAVAFQTFLSGRAASFQREMNNPLKKM 499
A. carolinensis   QISKEEHENRHMGNYRRIYPPDDKLLLEKYETLLAAAFQTFLSGRAASLQREMNNPLKRM 499
G. gallus         QISKEEHENRHMGNYRRIYPPDDKSLLEKYESLLATAFQTFLAGRAASLQREMNNPLKRM 498
X. laevis         QISREEYENRHLGNYRRIYPPEDKLLLEKYEGLLATAFQTFLAGRAASLQREMNNPLKRM 501
L. chalumnae      QISKEEHENRHLGNYRRIYPPDDKLLLEKYESLLTTAFQTFLSGRAVSLQREMNDPLKKM 498
D. rerio          QVSRDEHEKRHLGNYRRIYPPDDKLLLEKYESLLSAAFQTFLAGRAASLQKEMNNPLKRM 501
S. kowalevskii    ENAREEYENRNMGRFRRVFPPTDKFTIERYTGLLADAFQLFLSGRAASLQKEVTRAFRQL 538

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                  *
H. sapiens        KEEDILDLLEQCEIDDEKL
M. musculus       REEDLLDLLEQCEIDDEKL
A. carolinensis   KEEDILDLLEQCELDDEKL
G. gallus         KEEDILDLLEQCEIDDEKL
X. laevis         KEEDILDLLEQCELDDEKL
L. chalumnae      KEEDILDLLEQCEQDDEKL
D. rerio          KEEDILDLLEQCELDDEKL
S. kowalevskii    REDEILDMLQQCELDGTDY
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