

Supplementary Fig S5 | Sequence alignment of orthologs of human TRRAP (gi 4507691), *A. thaliana* (gi 22329206), *S. cerevisiae* (gi 6321891), and *C. elegans* (gi 17532447). Sequences were aligned using ClustalX.

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A.thaliana : -----MSPIQNFEQHSRRLVEPDLPIEERLAMVVEVRD : 33
H.sapiens : ---MAFVATQGATVVDQTTLMKKYLQFVAALTDVNTPEDETKLKMMQEVSE : 47
S.cerevisi : -----MSLTEQIEQFASRFRDDATLQSRYSTLSELYD : 33
C.elegans : MDPAMASPGYRSVQSDRSNHLTELETTRIQLADNSQRDDVKLKMLQEIWS : 50
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A.thaliana : SLE-ITHTAEYLNFLKCYFRASSVILLQITKPQFTDNIEHKLRNIVVEIL : 82
H.sapiens : NFENVTSSPQYSTFLEHIIPRFLTFLQDGEVQFLQEKPAQLRKLVLEII : 97
S.cerevisi : IMELLNSPEDYHFFLQAVIPLLLNQLKEVPISYDAHSPEQKLRNSMIDIF : 83
C.elegans : TIENHFTLSSHEKVVERLLSFLQVFCNTSPQFIAENNTQLRKLMLEII : 100
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A.thaliana : NRLPHSEVLRPFVQDLLKVAMQVLTTDNEENGLICIRIIFDLLR-----N : 127
H.sapiens : HRIPTNEHLRPHTKNVLSVMFRFLETENEENVLICLRIIIELHK-----Q : 142
S.cerevisi : NRCLMNQTFQPYAMEVLEFLSVLPKENENGILCMKVLTTLFK-----S : 128
C.elegans : LRLSNVEAMKHHSKEIIKQMRLITVENENANLAIKIVTDQGRSTGKMQ : 150
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A.thaliana : FRPTLENEVQPFLDFVCKIYQNFRLTVSHFFENVKMEEVKPVEIPTPSDQ : 177
H.sapiens : FRPPITQEIHHFLDFVKQIYKELPKVVNRYFENPQVIPENTVPPPEMVGM : 192
S.cerevisi : FKSILQDKLDSFIRIIIQIYKNTPNLINQTFYEAGKAEQGDLDSPKEPQA : 178
C.elegans : YCGEVSQIMVSEKTMVIDLTASGRAGDMFNIKEHKAPPSTSSDEQVITEY : 200
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A.thaliana : SLSITAPSRNGQIN-----PSTR-----SFKIVTESP : 204
H.sapiens : ITTIAVKVNPERED-----SETRTHSIIPRGSLSLKVLAELP : 229
S.cerevisi : DELLDEFSKNDEEKDFPSKQSSTEPRFENSTSSNGLRSSMFSFKILSECP : 228
C.elegans : LKTCYYQQTVLLNG-----TEGKPLKYNMIPSAHQSTKVLLEVP : 240
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A.thaliana : LVVMFLFQLYSRLVQINIPNLLPLMVAAISIPGPEKVSSHMKP----- : 247
H.sapiens : IIVVLMYQLYKLNIHNVVAEFVPLIMNTIAIQVSAQARQHKLYN----- : 273
S.cerevisi : ITMVTLYSSYKQLTSTSLPEFTPLIMNLLNIQIKQQEAREQAESRGEHF : 278
C.elegans : YLVIFFYQHFKTAIQTEALDFMRLGLDFLNVRVPDEDKLKTNQI----- : 284
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A.thaliana : -----QFIELKGAQVKTVSFLTYLLK--SCAEYIKPHEESICKS : 284
H.sapiens : -----KELYADFIAAQIKTLSFLAYIIR--IYQELVTKYSQQMVKG : 312
S.cerevisi : TSISTEIINRPAYCDFILAQIKATSFLAYVFIRGYAPEFLQDYVNFVVDL : 328
C.elegans : -----ITDDFVSAQSRFLS FVNIMAKIPAFMDLIMQNGPLLVS : 323

A.thaliana : IVNLLVTC-SDSASIRKELLVSLKHVLGTD FKRGLFPLIDTLLLEERVLVG : 333
H.sapiens : MLQLLSNCPAETAHLRKELLIAAKHILTTELNRQFIPCMDKLFDESILIG : 362
S.cerevisi : IIRLLQDCPSELSSARKELLHATHRILSTNYKKLFLPKLDYLFDERILIG : 378
C.elegans : TMQMLERC PADLISVRREVL MALKYFTSGEMKSKFFPMLPRLIAEEVVLG : 373

A.thaliana : TGRACFESLRPLAYSLLAEIVHHVRADLSLSQLSRIIYLF SRNMHDSTLS : 383
H.sapiens : SGYTARETLRPLAYSTLADLVHHVRQHLP LSLAVQLFAKNIDDESIP : 412
S.cerevisi : NGFTMHETLRPLAYSTVADFIHNRSELQ LSEIEKTIKIYTG YLLDES LA : 428
C.elegans : TGFTAIEHLRVFMYQMLADLLHHRNSIDYEMITHVIFVFCRTLHDPNNS : 423

A.thaliana : LNIHTTCARLMLNLVEPIFEKGI-DQQSMDEARIILGRILD AFGKFNTF : 432
H.sapiens : SSIQTMSCKLLLNLDVDCIRSK---SEQESGNRDLVLRMLLEV FVLK FHTI : 459
S.cerevisi : LTVQIMS AKLLNLVERILKLGKENPQEAPRAKLLMI IIDS YMNRFKTL : 478
C.elegans : SQVQIMSARLLNSLAESLCKMDS---HDTFQTRDILLIEI LESHVAKL KTL : 470

A.thaliana : KRTVPQLLEEGDGKDQITLRSKLELP----- : 458
H.sapiens : ARYQLSAIFKKCKPQSELGAVEAALPGVPTAPAAPGPAPSPAPV PAPP : 509
S.cerevisi : NRQYDTIMKYYGRYETHKKEKAEK LKNSIQDNDKESEEFMRKVLEPSDDD : 528
C.elegans : AVYHMPILFQQYGT EIDYEYKSYERDAEKPGMNI PKDTIRGVPKRRIRRL : 520

A.thaliana : -----VQVPAEHSK : 467
H.sapiens : PPPPPATPVTPAPVPPFEKQGE-----KDKEDKQTF : 541
S.cerevisi : HLMPPQPKEDINDSPDVEMTESDKVVKNDVEMFDIKNYAPILL LPTPTND : 578
C.elegans : SIDSVEELEFLASEPSTSEDADE-----SGGDPNKLPPPTKE : 557

A.thaliana : EVNDCKNLIKTLVGMKTI IWSITHAHLPRPQGMHP----QALASQSS-- : 511
H.sapiens : QVTDCRSLVKTLVCGVKTITWGITSCKAPGEAQFIPNKQLQPKETQIY-- : 589
S.cerevisi : PIKDAFYLYRTLMSFLKTI IHDLVFNPPNEEYTVANPKLWASVSRVFSY : 628
C.elegans : GKKTSPEAILTAMSTMTPPPLAIVEARNLVKYIMHTCKFVTGQLRIARPS : 607

A.thaliana : -----VTQVFKGMREDEVWKASGVLKSGVHCLALFKDKD---E : 546
H.sapiens : -----IKLVKYAMQALDIYQVQIAGNGQTYIRVANCQTVRMKE : 627
S.cerevisi : EEVIVFKDLFHECIIGLKFVKDHNEKLSPETTKKHFDISMPSLPVSATKD : 678
C.elegans : QDMYHCS----KERDLFERLLRYGVMCMDVFLPTTRNQPMHSSMRTKD : 653

A.thaliana : EKEMLNLFSQLAVMEPRDLMDMFSICMPELFEICIIDNTQLVQIFATLIQ : 596
H.sapiens : EKEVLEHFAGVFTMMNPLTFKEIFQTTVPYMVERISKNYALQIVANSFLA : 677
S.cerevisi : ARELMDYLAFMFMQMDNATFNEIIEQELPFVYERMLEDGSLHVAQSFLT : 728
C.elegans : EKDALESLANVFTTIDHAIIFREIFEKYMDFLIERIYNRNYPLQLMVNTFL : 703

A.thaliana : APKVYKPFADVLINFLVSSKLDVLEKPNPDSAATKLIHLHFRCLFGAVSKAP : 646
H.sapiens : NPTTSALFATILVEYLLDRLPEMGSN--VELSNLYLKLKLVFGSVSLFA : 725
S.cerevisi : SEITSPNEFAGILLRFLKG-KLKDLDGNVDFNTSNVLIRLFLKLSFMSVNLFP : 777
C.elegans : VRNEVPFFASTMLSFLMSRMKLLSVS--NDKTMLYVKLFKIIIFSAIGANG : 751

A.thaliana : S--DFERILQPVPLIMEVCMKNATEVEKPLGYMQLLRTVFRGLAGCKFE : 694
H.sapiens : A--ENEQMLKPHLHKIVNSSMELAQTAKEPYNFYLLLRALFRSIGGGSHD : 773
S.cerevisi : N--INEVVLLPHLNDLILNSLKYSTAEPLVYFYLRITLFRSIGGGREFE : 825
C.elegans : SGLHGDKMLTSYLPEILKQSTVLALTAREPLNYFLLLRALFRSIGGGAQD : 801

A.thaliana : LILLDLVPMLLPCINILLTMLEGPAGED---MRDLLLELSLTLPARLSSL : 741
H.sapiens : LLYQEFLPLLPNLLQGLNMLQSGLHKQH---MKDLFVELCLTVPVRLSSL : 820
S.cerevisi : NLYRSIKPILQVLLQSLNQMILTARLPH---ERELYVELCITVPVRLSVL : 872
C.elegans : ILYGKFLQLLPNLLQFLNKLTLNLQSCQHRIQMRLEFVELCLTVPVRLSSL : 851

A.thaliana : LPYLPRLMRPLVSCLRGSDLVSLGLRTEFWVDSLNPDFLEPSMATVMS : 791
H.sapiens : LPYLPMLMDPLVSALNGSQTIVSGLRTELELQVDNLQPDFLYDHIQPVRA : 870
S.cerevisi : APYLPFLMKPLVFALQQYPDLVSQGLRTELECIDNLTAEYFDPIIEPVID : 922
C.elegans : LPYLPMLMDPLVCAMNGSPNIVTQGLRTELELQVDNLQPEYLLLENMLPVRG : 901

A.thaliana : EVILALWSHLKVPY--PWGGKALQIVGKLGGRNRRFLKEPLTLECKDN- : 838
H.sapiens : ELMQALWRTLNRPAD--SISHVAYRVLGKFGGSNRKMLKESQKLHYVVT- : 917
S.cerevisi : DVSKALFNLLQPQPFNHAISHNVVRIKGLGGRNRQFLKPPPTDLTEKTE- : 971
C.elegans : ALMQGLWRVSKAPDT--SSMTAAFRILGKFGGANRKLINQPPQILQVATLG : 950

A.thaliana : PEHGLRLVLT FEPSTP-FLVPMDKFINLVAAVMQKNLTTEIYYKKQALK : 887
H.sapiens : EVQGPSITVEFSDCKASLQLPMEKAIETALDCLKSAN--TEPYRROAWE : 965
S.cerevisi : LDIDAIADFKINGMPEDVPLSVTPGIQSALNILQSYK--SDIHYRKSAYK : 1019
C.elegans : DTVQSYINMEFSRMGLDGNHSIHLPLSELMRVVADQMRYPADMILNPSA : 1000

A.thaliana : FLRVCLLSQLNLPG---CVTDEGQTTKQLSTLLSSVDSFWRRSESTEIE : 934
H.sapiens : VIKCFLVAMMSLE-----DNKHALYQLLAHPN---FTEKTIPN : 1000
S.cerevisi : YLTCVLLLMTKSS-----AEFPTNYTELLKTAVNSIKLERIGIEKN : 1060
C.elegans : MIPSTHMKKWCMELSKAVLLAGLGSSGSPITPSANLPKIIKKLLEDFDPN : 1050

A.thaliana : ADLG-VKTKTQLIAEKSI FKTLLITIIAASSDPDLSDSDDDFVFNICRHF : 983
H.sapiens : VIIS-HRYKAQDTPARKT FEQALTGAFMSAVIKDLRPSALPEVASLIRHY : 1049
S.cerevisi : FDLEPTVNKR DYSNQENLELRILLESV FYATS IKELKDDAMDLLNLLDHF : 1110
C.elegans : NRTTEVYT CPRESREL FVNALLAMAYGIWNKDGFRHVYSKFFIKVLRQF : 1100

A.thaliana : AII LHGDYTSSYTSTSAGPLGGS LISTSSKPKNNWSTYLKQLDPLIFLDA : 1033
H.sapiens : TMVAVAQCGPFLPCYQVGSQPSTAMFHSEENGSG---KGM DPLVLIDA : 1095
S.cerevisi : CLLQVN-----TLLNKRNYNGTFNIDLKNPN-----FMIDSSLILDA : 1148
C.elegans : ALIGVLEYIGGNGWMRHAEEEGVPLPC-----LDSSVMVDA : 1136

A.thaliana : LVDVLADENRLHAKAALTS LN VF AETLLFLARIKHADVLMARGAHSASMI : 1083
H.sapiens : IAICMAYEEKELCKIGEVALAVIFDVASIIILGSKER----- : 1131
S.cerevisi : IPFALSYYIPEVREVGVLAYKRIYEKSCLIYG----- : 1180
C.elegans : LIICLSETSSSFIIAGVMSLRHINETLSLTLPLDIDQ----- : 1172

A.thaliana : VSSPSTNPVYSPHPSVRI PVFEQLLPRL LHCCY GSTWQAQMGGVMGLGAL : 1133
H.sapiens : -----ACQLPLFSYIVERLCACCYEQAWYAKLGGVVS IKFL : 1167
S.cerevisi : -----EELALSHSFIPELAKQFIHL CYDETYYNKRGGV LGIKVL : 1219
C.elegans : -----MSKVP MCKYLM EKVFKLCHGPAWYARSGGINAIGYM : 1208

A.thaliana : VGKVNVELTCL--FQVKIVRGIVYVQKRLPVYASKEQDETSQVLIQILRV : 1181
H.sapiens : MERLPLTWVLQ--NQOTFLKALLFVMMDLTGEVSN GAVAMAKTTLEQLLM : 1215
S.cerevisi : IDNVKSSSVFLKKYQYNLANGLLFVLKDTQSEAPSAITDSA EKL LIDLLS : 1269
C.elegans : IESFPRKFVMD--FVIDVVD SIMEVILGTVEEISSGSADSAYDCLKKMMR : 1256

A.thaliana : VNNVDEANN-----DARRQSFQDVVEYLATELFNSNASITVRKNVQNC : 1224
H.sapiens : RCATPLKDEERAEIIVAAQEKSFHHVTHDLVREVTSPNS--TVRKQAMHS : 1263
S.cerevisi : ITFADVKEE-----DLGNKVLENTLTDIVCELSNANP--KVRNACQKS : 1310
C.elegans : VYFIKEEGQE-----EENLTLATIFVSAISKHYFHSNERVREFAIGLMD : 1300

A.thaliana : LALLASRTGSEVSELLEPLYQPLLQPLIMR--PLRSKTIDQOVGTVTALN : 1272
H.sapiens : LQVLAQVTGKSVTVIMEPHKEVLQDMVPPKKHLRHPANAQIIGLMEGNT : 1313
S.cerevisi : LHTISNLTGIPIVKLMDSKQFLLSPIFAK--PLRALPFTMQIGNVDAIT : 1358
C.elegans : HCMVHSRLAPSLDKFYFRKEFFPEELMRVLT TVPTMSLADAGGSLDGVQ : 1350

A.thaliana : FCLALRPPLLKVTPELVN---FLOEALQIAEADEALWAVKLMSPKVLTS- : 1318
H.sapiens : FCTTLQPRLFTMDLNVVEHKVFTYELLNLCEAEDS-ALTKLPCYKSLPS- : 1361
S.cerevisi : FCLSLPNTFLTFFNEELFR---LLOESIVLADAEDSLSTNIQKTTEYSTS : 1405
C.elegans : NYMFCNCPDGFDFEFDKMDMYKRYLSHLLDIAQTDFTLNQRNAFKK CETCP : 1400

A.thaliana : -----LNRLRTACIEILCTTMA----- : 1335
H.sapiens : -----LVPLRIAALNALAACNY----- : 1378
S.cerevisi : -----EQLVQLRIACIKLLAIALK----- : 1424
C.elegans : SHFLPPFPITTHIDSMRASALQCLVIAYDRMKKQYIDKGIELGDEHKMIE : 1450

A.thaliana : -----WADFRTQSHNELRAKIIISMFFKSLTCRAPEIVTVAKEGLR-QVIN : 1379
H.sapiens : -----LPQS-----REKIIAALFKAINSTNSELQEAGEACMR-KFLE : 1414
S.cerevisi : -----NEEFATAQQGNIRIRILAVFFKTMKTSPEIINTTYEALKGLSLAE : 1469
C.elegans : ILALRSSKITVDQVYESDESWRRLMTVLRAVTDRETPEIAEKLHPSLLK : 1500

A.thaliana : QQRMPKELLQSSLRPIIVNLA-----QTKNINMPLIQGLARLLEILSN : 1422
H.sapiens : GATIEVDQIHTHMRPLLMMLG-----DYRSITLNVVNRLTSVTRLFPN : 1457
S.cerevisi : NSKLPKELLQGLKPLLMNLS-----DHQKLTVPGLDALSKLELLIA : 1512
C.elegans : VSPISTIIIIATFGASYIRNISGAGDSDSDRHISYNDIMKFKCIVELNPK : 1550

A.thaliana : WFNVTLGCKLLEHLKWKWLEPEKLA-----QSQ-KSWKAGEEPPK : 1459
H.sapiens : SFNDKFCDDQMMQHRLKWKMEVVVIT-----HKG-GQRSDGNEMK : 1494
S.cerevisi : YFKVEIGRKL LDHLTAWCRVEVLD-----TLFGQDLAEQMPTK : 1550
C.elegans : ILVTKMAVNLANQMVKYKMSDKISRILSVPSSTEEELDDFEAEKMKGIR : 1600

A.thaliana : TAAATIELFHLLPLAASKFLDELVTLTIDLEAALPPGQVYSEINSPYRLP : 1509
H.sapiens : ICSAIIINLFHLIIPAAPQTLVKPLLEVVMKTERAML-----IEAGSPFREPE : 1539
S.cerevisi : IIVSIIINIFHLLPPQADMFLNDLLLKVMLLERKLR-----LQLDSPFRTP : 1595
C.elegans : ELDMIGHTVKMLAGCPVTTFTTEQIIVDISRFAAHFEYAYSQDVLVNWIDD : 1650

A.thaliana : LTKFLNRYATLAVDYFLSR--LSEPKYFRRFMYIIRSDAGQPLREELAKS : 1557
H.sapiens : LIKFLTRHPSQTVELFMMEATLNDPQWSRMFMSFLKHKDARPLRDVLAAN : 1589
S.cerevisi : LARYLNRFHNPVTEYFKKN--MTLRQLVLFMCNIVQRPEAKELAEDFEKE : 1643
C.elegans : VTVILNKSPKDVWKFFLSRESILDPAARRSFIRRIIVYQSSGFLRQEFMDT : 1700

A.thaliana : PHKILSYAFPEILPKSDAILSAAASTPPAASSGDEKPTPMKSESSNTPST : 1607
H.sapiens : PNRFITLLLP-----GAQTAVRPGSPS----- : 1612
S.cerevisi : LDNEYDFYISN-----IPKN : 1658
C.elegans : PEYFEKLIIDL-----DEENKDE : 1718

A.thaliana : KSNVASDAYFQGLYLIKTMVKLIPSWLQSNRTIFDALAHLWKSHARTSR- : 1656
H.sapiens : TSTMRLDLQFQAIKIISIIVKNDDSWLASQHSLSVSQLRRVWVSENFQER- : 1661
S.cerevisi : QVRVVSFFTNMVDLNTMVIITNGDEWLKKGKGMILKLDMLNLTIKTIK- : 1707
C.elegans : DERKIWRDRMFASFIVDRISKSCPEWLLISPNSPIPRIKKLFSETEFNERY : 1768

A.thaliana : -----LQNEQNLTLVQVKESKWLVKCFLNLYLRHEKSEMNVLF : 1693
H.sapiens : -----HRKE-NMAATNWKEPKLLAYCLLNLYCKRNYGDIELLF : 1697
S.cerevisi : -----ENSFYIDHLQLNQSIAKFQALYLRFTELSERDQNPLL : 1744
C.elegans : VVRALTEVKKFQEEIIVKRMTEHKYKVPKLIILNTFLRYLRNLNIYDYDLFI : 1818

A.thaliana : DVLLIFLHFSRIDYTFIREFYIIEVAEEYPPNMKKAIVLHFLNLFQSKQL : 1743
H.sapiens : QLLRAFTGRFLCNMTFLKEYMEEIIPKNYSIAQKRALFFRFVDFNDPN-F : 1746
S.cerevisi : LDFIDFSFSNGIKASYSLKKFIFHNIIASSNKEKQNNFINDATLFLVLSK : 1794
C.elegans : VIASCFNNGNFVTDLSFLREYLETEVIPKVPLQWRRELFRLRIMQKFDTPQ : 1868

A.thaliana : GHDH---LVQAMQMLILEMIAHAFQNGQTWEVIDP----- : 1775
H.sapiens : GDEL---KAKVLQOHILNPAFLYSEFKGEGEQLLGPPNPEGDN-----PE : 1787
S.cerevisi : CLDA---RIFVLKNVINSTLIYEVATSGSLKSYLVEDKKPKW-----LE : 1835
C.elegans : TAGTSMQHVKALQYLVIPTLHWAFERYDTDEIVGTAPIDDSDSMDVDPA : 1918

A.thaliana : DIVKTI VERLLDPPEEVS AEYDEPLRIE LLOLATLL LKYLQSDLVQHR-- : 1823
H.sapiens : SITSVFITKVLDP--EKQADMLDSLRIYLLQYATLLVEHAPHHIHDNNKN : 1835
S.cerevisi : LLHNKIWKNSNAILAYDVLDDHDLFRFELLQLSAIFIKADPEITAEIK-- : 1883
C.elegans : GSSDNLVARLTSVIDSHRNYLSDGMVIVFYQLCTLFVQNASEHIHNNNCK : 1968

A.thaliana : -----KELIKFGWNHLK---REDSASKQWAFVNVCHF LDAYQAPEKIIIL : 1864
H.sapiens : RNS-KLRRIMTFAWPCLLSKACVDPACKYSGHLLLAHI IAKFAIHKKIVL : 1884
S.cerevisi : -----KDIKFCWNFIK---LEDTLIKQSAYLVTSYFISKFDPIKVVV : 1924
C.elegans : KQGGRLRIIMLFAWPCLTMYNHQDPTMRYTGFFFLANI IERFTINRKIVL : 2018

A.thaliana : QVFVALLRRTCQPENKMLVKQALDILMPALPKRLPLGDSRMP IWI RYTKKI : 1914
H.sapiens : QVFHSL LKAHAMEARAIVRQAMAILTPAVPARMEDG---HQMLTHWTRKI : 1931
S.cerevisi : QVFVALLRSSHVEARYLVKQSLDVLTPVLHERMNAAG-TPDTWINWVKRV : 1973
C.elegans : QVFHQLMTTYQODTRDQIRKAIIDILTPALRTRMEDG---HLQILSHVKKI : 2065

A.thaliana : LVEEGHSIPNLIHIFQLIVRHSDFYSCRAQFVPQMVNSLSR LGLPYNTT : 1964
H.sapiens : IVEEGHTVPQLVHILHLIVQHFKVYYPVRHHLVQHMVSAMQRLGFTPSVT : 1981
S.cerevisi : MVEN--SSSQNNILYQFLISHPDLFFNSRDLFISNIIHMMNKITFMSNSN : 2021
C.elegans : LIEECHNLQHVQHVFMVVRNYRVYHVRLLELLTPLLNGVQRALVMPNSV : 2115

A.thaliana : AE-----NRRLAIELAGLVSWERQRQNESKMVTDGDATSEVSDGLHPSS : 2009
H.sapiens : IE-----QRRLAVDLSEVVIKWE LORIKDQQPDSMDPNSSG-----E : 2019
S.cerevisi : SD-----SHTLAIDLASLILYWENKLTLEITNVN----- : 2049
C.elegans : LEKFSWQTRRHAVEICEMVIKWE LFR TLK----- : 2144

A.thaliana : GVDPKLSTAGSSISEDP SKRVKIEPGLPSLCVMSPGGASSIPNVETPGSA : 2059
H.sapiens : GVNSVSSSIKRGLSVDSAQEVKRFRTATGAI SAVFGRSQSLPGADSL LAK : 2069
S.cerevisi : --NTKTDSDGDVVMSSDKSDINPVEADTTAIIVDANNNSPIS----- : 2089
C.elegans : -TDHII SDEEALEV DKLQDLKLR TASSTDRDFD FEEAHNKRDMPDAQR---- : 2189

A.thaliana : TQPDEEFKPNAAEMEELIINFLIRVRLYTSHELLPWGMLILAGFDLLGGGVA : 2109
H.sapiens : P-----IDKQHTD TVVNFLIRVACQVNDNT----- : 2094
S.cerevisi : -----LHLREACTAFLIRYVCASNHRA----- : 2111
C.elegans : -----TIIKEHADVIVNMLVRF CMTFHQNSG-----S : 2216

A.thaliana : VVIEPKDREANTMYKQALDFLSQAL--EVWPNAN-VKFNYLEKLLSSMP- : 2155
H.sapiens : ---NTAGSPGEVLSRRCVNLKLTALRPDMWPKSE-LKIQWFDKLLMTVE- : 2139
S.cerevisi : -----IETELGLRAINILSELISDKHWTNVN-VKLVYFEKELIFQD- : 2151
C.elegans : SSTSQSGNHGVELTKKCQLLRLRALRPSMWGEFVSFRLTMIEKELISIPND : 2266

A.thaliana : -----PSQSDPSTALAQGLDVMNKVLEKQPHLFTKNNISQISQFLE : 2196
H.sapiens : -----QPNQVNYGNICTGLEVLVSFLLTVLQSPAILSSFKPLQORGIA : 2180
S.cerevisi : -----LDSENIYYCMNALDVLVYVFFKNKTKEWIMENLPTIQNLLE : 2192
C.elegans : NALRNDISSSTAYANTIQNAQHTLDMLCNII PVMPKTSLMTMMRQLQRPLI : 2316

A.thaliana : LSFKHKMLDAGKSLCSLTKMVFIAPFDGASTPPEIKLLYQKVNELIQKH : 2246
H.sapiens : ACMTCGNTKVLRAVHSLLSRLMSIFPTEPSTSS--VASKYEELECLYAAV : 2228
S.cerevisi : KCIKSDHHDVQEALQKVLQVIMKAIKAQG-----VSVIIEEESPGKTF : 2235
C.elegans : QCLNNGAQNFKMTRLVTOIVSRLLLEKTNVSVNG---LDELEQLNQYISRF : 2363

A.thaliana : VHVVTASQASGDDNSLGSVSVFVLVVLKTLAEVQKHFLDPYVLVHILQRLS : 2296
H.sapiens : GKVIYEGLTNYEKATNANPSQLFGTLMILKSACSN--NPSYIDRLISVFM : 2276
S.cerevisi : IQMLTSVITQDLQETSSVTAGVTLAWVLFMNFDPN-----IVPLLTPLM : 2279
C.elegans : LHEHFGSLLN-CRNLSGPVLGVLGAFSLLRITICGH--EPAYLDHLMPSFV : 2410

A.thaliana : RDLGLAAGAHPRQSQRIES----ESADVGA VVSNIKLVLELIDERVMLLA : 2342
H.sapiens : RSLQKMVREHLNPOAASGS----TEATSGTSELVMLSLELVKTRLAVMSM : 2322
S.cerevisi : KTFSKLCKDHLISISQPKDA---MALEEARITTKLLEKVLVYILSLKVSLL : 2325
C.elegans : KVMERAAKEHLAYVANSQDGNMVKNFFPDVAELLCACMELVRPRVDHISM : 2460

A.thaliana : DCKRPVTQILNTLLSEKGTDSSLILCVLDMLKRWAEDDFGKKGSSGSSGA : 2392
H.sapiens : EMRKNFIQAILTSLIEKSPDAKILRAVVKIVEEWVKNS----PMAANQT : 2368
S.cerevisi : GDSRRPFLSTVALLIDHSMQDNFLRKIVNMSRSWI-----FNTEIF : 2366
C.elegans : EIKRSIVGGIIAELI IKSNDKI IQTSVKLLGAMIS-----TQDME : 2501

A.thaliana : FLTQKDIVSFLQKLSQVDKQHFSSVALDEWDKVYLQLLYGLCADSTKYPL : 2442
H.sapiens : PTLREKSILLVKMMTYIEKRFPEDLELNAQFLDLVNYVY-----RDET : 2411
S.cerevisi : PTVKEKAAIITKMLAFEIRGEPS-----LSKLFYEIVLKLFDQEH : 2406
C.elegans : FTILTIVLPLLVRIQSIIIVTKFKN-----CKDLIADYLVVVIITVFENSE : 2544

A.thaliana : ALRQ~~E~~ISLKV~~E~~RHSML~~G~~L~~R~~AR~~D~~P~~D~~M~~R~~R~~K~~F~~F~~L~~L~~YH~~E~~S~~L~~GN----NL~~F~~AR~~L~~Q : 2488
H.sapiens : LSGSEL~~T~~AKLE~~P~~AF~~L~~SGL~~R~~CA~~Q~~EL~~I~~RA~~K~~FF~~E~~V~~F~~DN~~S~~M~~K~~R----RV~~Y~~ER~~L~~L : 2457
S.cerevisi : FN~~N~~TE~~I~~T~~V~~RM~~E~~Q~~P~~FL~~V~~G~~T~~R~~V~~ED~~I~~G~~I~~R~~K~~RE~~M~~T~~I~~L~~D~~NS~~L~~ER----DI~~K~~ER~~L~~Y : 2452
C.elegans : YRN~~S~~E~~A~~GS~~R~~L~~W~~EG~~F~~FW~~G~~L~~K~~SS~~D~~P~~Q~~TRE~~K~~F~~S~~IV~~W~~E~~K~~T~~W~~PH~~M~~A~~T~~V~~D~~IA~~H~~RM~~K~~ : 2594

A.thaliana : YII~~Q~~N~~Q~~D~~W~~E~~A~~MS~~D~~V~~F~~W~~L~~K~~Q~~G~~L~~D~~L~~L~~L~~AIL~~I~~E--EK~~P~~IT-----I~~A~~P~~N~~S~~A~~R : 2530
H.sapiens : YVTCS~~Q~~N~~W~~E~~A~~M~~G~~N~~H~~FW~~I~~K~~Q~~CI~~E~~LL~~L~~AV~~C~~E~~K~~--ST~~P~~IG~~T~~SC~~Q~~G~~A~~M~~L~~PS~~I~~TN : 2505
S.cerevisi : YV~~I~~R~~D~~Q~~N~~W~~E~~FI~~A~~D~~Y~~P~~W~~L~~N~~Q~~A~~L~~Q~~LL~~Y~~GS~~F~~N~~R~~--EK~~E~~L~~S~~L~~K~~NI~~Y~~CI~~L~~SP~~P~~S~~I~~L : 2500
C.elegans : YIM~~Q~~N~~Q~~D~~W~~SK~~F~~K~~H~~A~~F~~W~~L~~K~~F~~AL~~W~~GM~~L~~R~~T~~IA~~K~~R~~P~~T~~D~~P~~N~~N~~K~~R~~K~~K~~V~~I~~L~~L~~N~~C~~A~~T~~P~~ : 2644

A.thaliana : VV~~P~~I~~L~~PS~~Q~~N~~P~~GV~~H~~H~~Q~~PP~~V~~M~~P~~EG~~P~~E----- : 2555
H.sapiens : VIN~~L~~AD~~S~~H~~D~~RA~~A~~F~~A~~M~~V~~TH~~V~~K~~Q~~E~~P~~RE~~R~~ENSE~~S~~KE~~E~~D~~V~~E~~I~~D~~I~~E~~L~~AP~~G~~D~~Q~~T~~S~~T : 2555
S.cerevisi : QE~~Y~~L~~P~~ENA~~E~~M~~V~~TE~~V~~ND~~L~~E~~L~~SN----- : 2521
C.elegans : WRT~~I~~E~~Y~~A~~A~~K~~L~~K~~D~~Q~~P~~ME~~V~~E~~T~~EM~~K~~RE~~E~~PE~~P~~ME~~V~~DE~~K~~D~~S~~Q~~D~~D----- : 2683

A.thaliana : -----V~~A~~S~~M~~F~~D~~S~~I~~V~~M~~K~~H~~S~~Q~~F~~L~~S~~A~~A~~S~~K~~L~~Q~~V~~A~~D~~V~~V~~I~~P~~L~~R~~E~~L~~A~~H~~T~~D~~A- : 2594
H.sapiens : PK~~T~~K~~E~~L~~S~~E~~K~~D~~I~~G~~N~~Q~~L~~H~~M~~L~~T~~N~~R~~H~~D~~K~~F~~L~~D~~T~~L~~R~~E~~V~~K~~T~~G~~A~~L~~L~~S~~A~~F~~V~~Q~~L~~C~~H~~I~~S~~T~~- : 2604
S.cerevisi : -----F~~V~~K~~G~~H~~I~~A~~S~~M~~Q~~G~~L~~C~~R~~I~~I~~S~~S~~D~~F~~I~~D~~S~~L~~I~~E~~I~~F~~Y~~Q~~D~~P~~- : 2553
C.elegans : SK~~D~~A~~G~~E~~P~~K~~E~~K~~E~~K~~L~~T~~L~~E~~L~~L~~L~~A~~G~~Q~~Q~~E~~L~~L~~D~~E~~A~~S~~N~~Y~~D~~F~~A~~D~~A~~L~~D~~T~~V~~S~~Q~~I~~T~~F~~A~~L~~N~~E : 2733

A.thaliana : -NV~~A~~Y~~H~~L~~W~~V~~L~~V~~F~~P~~I~~V~~W~~A~~T~~L~~H~~K~~E~~E~~Q~~I~~A~~L~~A~~K~~P~~M~~I~~S~~L~~S~~K~~D~~Y~~H~~K~~-K~~Q~~Q~~G~~H~~R~~P~~N~~ : 2642
H.sapiens : -T~~L~~A~~E~~K~~T~~W~~V~~Q~~L~~F~~P~~R~~L~~W~~K~~I~~L~~S~~D~~R~~Q~~Q~~H~~A~~L~~A~~G~~E~~I~~S~~P~~F~~L~~C~~S~~G~~S~~H~~Q~~-V~~Q~~R~~D~~C~~Q~~P~~S~~ : 2652
S.cerevisi : -K~~A~~I~~H~~R~~A~~W~~V~~T~~L~~F~~P~~Q~~V~~Y~~K~~S~~I~~P~~K~~N~~E~~K~~Y~~G~~F~~V~~R~~S~~I~~I~~T~~L~~L~~S~~K~~P~~Y~~H~~T~~-R~~O~~I~~S~~S~~R~~T~~N~~ : 2601
C.elegans : N~~Q~~V~~T~~S~~K~~M~~W~~V~~L~~E~~K~~S~~F~~W~~S~~S~~L~~S~~Q~~S~~E~~I~~E~~D~~F~~T~~A~~L~~V~~V~~P~~F~~M~~S~~S~~G~~V~~H~~N~~N~~Y~~Q~~T~~G~~V~~Q~~D~~S : 2783

A.thaliana : VV~~Q~~A~~L~~L~~E~~G~~L~~Q~~L~~S~~H~~P~~Q~~P~~R~~M~~P~~S~~E~~L~~I~~K~~Y~~I~~G~~K~~T~~Y~~N~~A~~W~~H~~L~~A~~L~~T~~L~~E~~T~~H~~V~~M~~L~~F~~T~~N- : 2691
H.sapiens : AL~~N~~C~~F~~V~~E~~A~~M~~S~~Q~~C~~V~~P~~P~~I~~P~~I~~R~~P~~C~~V~~L~~K~~Y~~L~~G~~K~~T~~H~~N~~L~~W~~F~~R~~S~~T~~L~~M~~L~~E~~H~~Q~~A~~F~~E~~K~~G~~L~~S : 2702
S.cerevisi : V~~I~~N~~M~~L~~L~~D~~S~~I~~S~~K~~I~~E~~S~~-L~~E~~L~~P~~P~~H~~L~~V~~K~~Y~~L~~A~~I~~S~~N~~A~~W~~Y~~Q~~S~~I~~N~~I~~L~~E~~S~~I~~Q~~S~~N~~T~~S~~I~~D~~ : 2650
C.elegans : V~~L~~A~~V~~W~~L~~E~~A~~V~~G~~---DA~~V~~H~~L~~P~~S~~R~~L~~I~~E~~F~~I~~S~~S~~K~~H~~E~~C~~W~~H~~T~~G~~I~~R~~L~~L~~E~~N~~H~~I~~W~~T~~I~~P~~K~~Q~~ : 2830

A.thaliana : -----D~~S~~K~~C~~A~~E~~S~~L~~A~~E~~L~~Y~~R~~L~~L~~N~~E~~E~~D~~R~~R~~F~~G~~L~~W~~K~~S~~R~~S~~I~~ : 2721
H.sapiens : L~~Q~~I~~K~~P~~K~~Q~~T~~T~~E~~F~~Y~~E~~Q~~E~~S~~I~~T~~P~~P~~Q~~Q~~E~~I~~L~~D~~S~~L~~A~~E~~L~~Y~~S~~L~~L~~Q~~E~~E~~D~~M~~W~~A~~G~~L~~W~~Q~~K~~R~~C~~K~~ : 2752
S.cerevisi : N-----T~~K~~I~~I~~E~~A~~N~~E~~D~~A~~L~~L~~E~~L~~Y~~V~~N~~L~~Q~~E~~E~~D~~M~~F~~Y~~G~~I~~W~~R~~R~~R~~A~~K : 2684
C.elegans : L~~N~~N~~T~~L~~L~~R~~E~~M~~K~~V~~A~~P~~G~~---L~~A~~G~~D~~I~~E~~T~~L~~E~~S~~L~~G~~T~~L~~Y~~N~~E~~I~~S~~E~~F~~D~~Q~~F~~A~~A~~T~~W~~E~~R~~R~~A~~V : 2877

A.thaliana : TTESRAGFSMVQHGFWRQAQSLFYQAMVKATQGTYNNTVP----- : 2761
H.sapiens : YSETATAIAYEQHGFFEQAESYEKAMDKAKKEHERSNASP----- : 2793
S.cerevisi : YTETNIGLSYEQITGLWDKAQQLYEVAQVKARSGALPYSQS----- : 2724
C.elegans : FPDIMRAMSAMQLGDMELAQSYLEKSMSSSTYETLAPTINPNNTSNSEKHV : 2927

A.thaliana : ----KTEMCLWEEQWLHCATQLGOWDALVDFG--KSTENYEILLDSLWKA : 2805
H.sapiens : --AIFPEYQLWEDHWIRCSKELNQWEALTEYGQS KGHINPYLVLECAWRV : 2841
S.cerevisi : -----EYALWEDNWIQCAEKLQHWVDVITELAKHEGFT--DLLLECGWRV : 2766
C.elegans : SPIIDKEYDHWMEMYITNCSELLQWQNVADV CNGKDMQHVRLINAASHI : 2977

A.thaliana : PDWTYLKDHVIP---KAQVEETPKLRLVQACFSLHEKNANGVG-----DA : 2847
H.sapiens : SNWTAMKEALVQVEVSCPKEMAWKVNMYRGLAICHPEEQQLS-----FI : 2886
S.cerevisi : ADWNSDRDALEQSVKSVMDVPTPRRQMFKTFLLALQNFASRKGD---QEV : 2813
C.elegans : PDWNVVEECKSQIAGCIPPSFHLDTLFLNLMSTVMRMNENSSPTMKERC : 3027

A.thaliana : ENIVGKGVDLALEQWVQLPEMSLHARVPLLQQFQOLVEVOESSRIYVDIA : 2897
H.sapiens : ERLVEMASSLAIREWRRLPHVVSHTPLLQAAQQIIELEQAAQINAGIQ : 2936
S.cerevisi : RKLCDDEGIQLSLIKWVSLPIRYTPAHKWLHLHGFFQQYMEFLEATQIYANLH : 2863
C.elegans : KIAIQECTEAHISRWRALPSVVSYGHVKILQAMNLVREIEESTDIRIALL : 3077

A.thaliana : NGSKVPGNAAVGGQGNLYADLKDILETWRLRTPNEWDNMTVWYDMLQWRN : 2947
H.sapiens : PTN-----LGRNNSLHDMKTVVKTWRNRLPIVSDDLSHWSSIFMWRQ : 2978
S.cerevisi : TTT-----VQNLDSKAQEIKRILQAWRDRLPNTWDDVNMMWDLVTWRQ : 2906
C.elegans : EAP-----SNKVDQALMGDMKSLMKVFRNRTPPTSDDMGFVSTWYDWRN : 3121

A.thaliana : EMYNVVIDAFK-----DFVTSN--TPLHHLGYRDKAWNPNKLARIARK : 2988
H.sapiens : HHYQAIVTAYE-----NSSQHDPPSSNNAMLGVHASASAIIOYGKIARK : 3021
S.cerevisi : HAFQVINNAYLPLIPALQQSNSNSNINTHAYRGYHEIAWVINRFAHVARK : 2956
C.elegans : QIHGMMLQRFEYWD--KVGLNVAATGNQSI VPIHSMQAQQLAVAKHAKN : 3168

A.thaliana : QGLYDVCVQILEKMYGHSQMEVQEFVVKIKEQAKAHLETKGELAT----- : 3033
H.sapiens : QGLVNVALDILSRIHTIPTVPIVDCFOKIRQOVKCYLQLAGVMGKNECM- : 3070
S.cerevisi : HNMPDVCISQLARIYTLPNIEIQEAFLLKREQAKCHYQNMNELTT----- : 3001
C.elegans : LGFHNLTKDLLNKLGLTAIMMDAQDKVCTYGGKTLRDMANSAADERVKN : 3218

A.thaliana : ----GLNLVNSTNLEFFLAKNKAEIFRLKGFHLLKLNDEGANLAYSNA : 3078
H.sapiens : ----QGLEVIESTNLKYFTKEMTAEFYALKGMFLAQINKSEEANKAFSAA : 3116
S.cerevisi : ----GLDVISNTNLVYFGTVQKAEFFTLKGMFLSKLRAYEEANQAFATA : 3046
C.elegans : ELLCEALEVLEDVRIDDLQKDQVAALLYHRANIHSVLDQAENADYTFSA : 3268

A.thaliana : ITLTKNL-----PKGWISWGNYCDMAYQDT-----QDEIWLEYAVSCF : 3116
H.sapiens : VQMHDVL-----VKAWAMWGDYLENIFVKE-----RQLHLGVSAITCY : 3154
S.cerevisi : VQIDLNL-----AKAWAQWGFNDRRRLSEEP-----NNISFASNAINCY : 3085
C.elegans : SOLVDLQNSVTTTGIKLMKNWGHHLKYKRFSTTVCKETGNNFGRQALACY : 3318

A.thaliana : LQGIRFG-VSNSRSHMARVLYLLSFD---PTNEPVGRIFDKHLDQVP--H : 3160
H.sapiens : LHACRHQNESKSRKYLAKVLWLLSFD---DDKNTLADAVDKYCIGVPPIQ : 3201
S.cerevisi : LQAAGLYKNSKIRELLCRILWLLSID---DASGMLTNAFDSFRGEIPVWY : 3132
C.elegans : FIAARVDNDIKARKPIAKILWLSKHLNACGSHEVMNRVIKQQLHSLNLFN : 3368

A.thaliana : WRTEAPHCKLVLMKIAAVFPQALYYWLRTYLLERRDAVNKSELRVVLA- : 3209
H.sapiens : WLAWIPQLLTCLVGSEGLKLLNLISQVGRVYPQAVYFPIRTLYLTLKIE- : 3250
S.cerevisi : WITFIPQLLTSLSHKEANMVRHILIRIAKSYQPALHFQLRTTKEDFAVI- : 3181
C.elegans : WLYWLPQLVTDVRYKPNSNFVLIILCKMAAAHPLQVYFHIREAVSVDDIDS : 3418

A.thaliana : -----ORMQONVPGVSAGHGGGNLPSETQIHQGSQTSGAVGTHDGGNLH : 3253
H.sapiens : -----QRERYKSDPGPIRATAPMWRCSRIMHMRELHPTLLSSLEGIVD : 3294
S.cerevisi : -----QRQTMVMGDKPDTNDRNGRRQPWEYLQELNN-ILKTAYPLLAL : 3224
C.elegans : VLEEDYTDEQMSMDVSEDEDCFADDPFDRILKICLKRYRPTDIRVFHRVLK : 3468

A.thaliana : VQESERATMINNVHS---GNDQPMNQSSMAISAAGAFDAAKDVMEALRS : 3300
H.sapiens : QMVWFRENWHEEVLR---QLQOGLAKCYSVAFEKSGAVSDAKITPHTLN- : 3340
S.cerevisi : SLESLVAQINDRFKS---TTDEDLFRILINVLIDG----- : 3256
C.elegans : ELDEMNETWVERHLRHAICLKDQMFKDFSEQMDATFNEMQYSEDVTMRTL : 3518

A.thaliana : KHNNLASELEVLLTEIGSRFVTLPEERLLAVVNALLHRCYKYPTATTAEV : 3350
H.sapiens : -----FVKKLVSTFGVGLENVSNVSTMFSSAA : 3367
S.cerevisi : -----TLNYNRLPFPRKNPKLPENT : 3276
C.elegans : RWRKQLEEDLVYFQQNYNLDLFLEIRNKRKMIIVTKGCMGVEKSQIMFEKEL : 3568

A.thaliana : P Q P L K K E L S G V C R A C F S A D A V T K H V A F V R E Y K Q D F E R D L D P E S N S F P V T L : 3400
H.sapiens : S E S L A R R A Q - : 3405
S.cerevisi : E K N L V K F S T - : 3311
C.elegans : S Q V F T E P A G - : 3607

A.thaliana : A D L T K K L K D W K N I L Q S N V E D R F P V L L R L E D E S K V L R D F N V V D V E I P G Q Y F : 3450
H.sapiens : H N L I S K L K K W I K I L E A K T K Q - L P K F F L I E E K C R F L S N F S A Q T A E V E I P G E : 3454
S.cerevisi : K R I R Y W R R R L E N K I L D R A S K K - - E N L E V L C P H L S N F H H Q K F E D I E I P G Q Y L : 3359
C.elegans : G - Y I R I V L D W I R A I R R R F D R - L P R R I P L E S S S P Y L A R F S H R T G C I E M P Y D : 3655

A.thaliana : A D - : 3488
H.sapiens : F L - : 3492
S.cerevisi : L N - : 3396
C.elegans : L L N V L R A K N H T L M A S N Q T G Q Y I S M L S R E F P N F E I V I K G G Q V I R K I Y I R G Q : 3705

A.thaliana : D G S Q K H F I V Q T S L T P N - A R S D E R I L Q L F R V M N Q M F D K H K E S R R R H L G L H T : 3537
H.sapiens : N G K I Y P Y L V M N D A C L T E S R R E E R V L Q L L R L L N P C L E K R K E T T K R H L F F T V : 3542
S.cerevisi : D G S V H S F A V Q Y P A V R H - S R R E E R M F Q L Y R L F N K S L S K N V E T R R R S I Q F N L : 3445
C.elegans : T G K S A A F Y L K K S V Q D E - - - - - P T N R V P Q M F K H L D H V L Q T D R E S A R R H L H A P T : 3752

A.thaliana : P I I I P V W S Q V R M V E D D - : 3571
H.sapiens : P R V V A V S P Q M R L V E D N - : 3576
S.cerevisi : P I A I P L S P Q V R I M N D S - : 3479
C.elegans : V L Q M R V G Q K T T L Y E V A S V Q P Y A M P P D C T R N Y P A S Q I D I V H P Y D V L T A T F N : 3802

A.thaliana : - - R E S D L P I T Y F K E K I N Q - : 3603
H.sapiens : - - I E H D N P I S R Y Y D R L - : 3606
S.cerevisi : - - F D P D D I Q D F M A D K L N A - : 3511
C.elegans : G S Y Y P D D M V L H F F E R F A Q S S S S I G Q P L P T P T N Q D G T V A P P R L T E A H H I K N : 3852

A.thaliana : Q A Y G E I T K N I V N D T I F S Q Y M Y K T S M S G S H L W A F K K Q F A V Q L A V S N F M S F I : 3653
H.sapiens : D I L K E V Q S N M V P R S M L K E W A L H T F P N A T D Y W T F R K M F T I Q L A L I G F A E F V : 3656
S.cerevisi : E I F N S I Q T M F V P S N V L K D H F T S L E T Q F E D F W L F R K Q F A S Q Y S S F V F M S Y M : 3561
C.elegans : I I Y E D F A R D M I P F R L L Y D Y L T A R Y P D P V M Y Y A M K K Q L L H S L A V L S T I E Y H : 3902

A.thaliana : LQIGGRSPNKILFAKNSG-----KMFQTDHFPSY-DSN : 3685
H.sapiens : LHLNRLNPEMLQIAQDTG-----KLNVAIFYREDINDAT : 3689
S.cerevisi : MMINNRTPHKIHVDKTSGNVFTLEMLPSRFPYERVKPLLKNHDLSPPPDS : 3611
C.elegans : CNLTMPGPDQMMMTMNTG-----VLSNPSYRFEIRGGR : 3935

A.thaliana : GMIELNEP---VPFRLTRNMHAFLSHFGVEGPLMSNMCSASQAVFSSKQN : 3732
H.sapiens : GDLNANRP---VPFRLTPNISEFLTITIGVSGPLTASMIAVARCFAP--N : 3734
S.cerevisi : PIFHNNEP---VPFRLTPNIQSLIGDSALEGIFAVNLFTISRALIEP--D : 3656
C.elegans : SLHDIQHFGEVVPFRLTPNLSILVG-VAQGDILWSMAAASKCLMCK--- : 3981

A.thaliana : EHLRYQLAMFFRDELLSWFGRRPLGVPIPPVAG--IATLSSPEIKHKVNS : 3780
H.sapiens : FKVDGILKTVLRDEIIAWHKKTQEDTSSPLSAAGQPENMDSQQILVSLVQK : 3784
S.cerevisi : NELNTYLALFIRDEIISWFSNLHR-----PIIENPQLREMVQT : 3694
C.elegans : -EPEVIMRPLVWDEFANNTDCDKS-----RLQVFACHASNS : 4016

A.thaliana : NVDDVIGRIRGIAPQYFSEEDENSVEPPQSVQRGVSEIVEAALS PRNLICM : 3830
H.sapiens : AVTAIMTRLHNLAQFEGGESK-----VNTLVAAANS LDNLICR : 3821
S.cerevisi : NVDLIIRKVAQLGHLNSTPTVTT-----QFILD CIGSAVSPRNLAR : 3735
C.elegans : YINGVASKLRNTNSADAKLRKDD-----CVSLISRAKDS DNILAR : 4055

A.thaliana : MDPTWHPWF : 3839
H.sapiens : MDPAWHPWL : 3830
S.cerevisi : TDVNFMPWF : 3744
C.elegans : MPPTYHAWF : 4064