



C

100

A. thaliana ESP1 (1) -----
 G. max ESP1 (1) -----
 O. sativa ESP1 (1) -----
 S. cerevisiae Ptl (1) -----
 S. pombe Ctf1 (1) -----
 A. thaliana CstF-64 (1) -----
 O. sativa CstF-64 (1) -----
 H. sapiens CstF-64 (1) -----
 D. melanogaster CstF-64 (1) -----
 C. elegans CstF-64 (1) -----
 S. cerevisiae RNA15 (1) -----

(1) -----MSMTAGVNQVGNPVDVQVPEQVTPWQDQIITSVAGSGPDIIDILAKNPPDQKLTIVLVEVYVTSKDKRKEAWEITNNENPENPKVIEQD
 (1) -----MAAAGAPAAQGNCQVFGVGNPVDVQVPEQVTPWQDQIITSVAGSGPDIIDILAKNPPDQKLTIVLVEVYVTSKDKRKEAWEITNNENPENPKVIEQD
 (1) -----MAGLTVRDPAVDRSLSVFVGNPVDVQVPEQVTPWQDQIITSVAGSGPDIIDILAKNPPDQKLTIVLVEVYVTSKDKRKEAWEITNNENPENPKVIEQD
 (1) -----MADKAQEQQS1MDMKSMSVFGVGNPVDVQVPEQVTPWQDQIITSVAGSGPDIIDILAKNPPDQKLTIVLVEVYVTSKDKRKEAWEITNNENPENPKVIEQD
 (1) -----MMRSGGYKSSSGVNRDQSXSVFVGNPVDVQVPEQVTPWQDQIITSVAGSGPDIIDILAKNPPDQKLTIVLVEVYVTSKDKRKEAWEITNNENPENPKVIEQD
 (1) -----MNRSQGVNAGQVNRRPSPYVDSVQVPEQVTPWQDQIITSVAGSGPDIIDILAKNPPDQKLTIVLVEVYVTSKDKRKEAWEITNNENPENPKVIEQD
 RRM

101

200

A. thaliana ESP1 (1) -----
 G. max ESP1 (1) -----
 O. sativa ESP1 (1) -----
 S. cerevisiae Ptl (101) HLRETAKNSQKVQLVLNDRSDYPPEAGLELPFEMETVPIPRPPPPQAANNNTVSNSNNTT-----NI-----QF-----
 S. pombe Ctf1 (86) DBPRRNQSYEYTERTDYRMEQPNQAHESYNSRFLPDVPLHSTSSLPASQGGCPSPAIYSSMATTNLKNINSTSVPAYNPNSMTSDPDSASQPHDAYNA
 A. thaliana CstF-64 (88) DKGTGDKTRDQS---QGGPLGPSTTTVTESQRQIGGQFDNSNMHQPVGLHLATAAVSIALGAL-----
 O. sativa CstF-64 (91) GRNADRNRERKG---GGPMMASSVDTQKLAGTPTVVGDTGLHPVQVGLPSAIIHSASVWAGIL-----
 H. sapiens CstF-64 (95) EKKNEELKSLGT-----
 D. melanogaster CstF-64 (95) EKSRRMEEMQQLQ-----
 C. elegans CstF-64 (97) GMNMEEFQGSSN-----
 S. cerevisiae RNA15 (97) SDISIGVSQQQQQ-----

201

300

A. thaliana ESP1 (1) -----MAGKQICGEGCPANLQGKTKSOLVHIMSCMRILLDDN----HQQKREIIRNPLIYKALFOATIIMICVQAVQPVTPX-----
 G. max ESP1 (1) -----MAGKQICGEGCPANLQGKTKSOLVHIMSCMRILLDDN----HQQKREIIRNPLIYKALFOATIIMICVQAVQPVTPX-----
 O. sativa ESP1 (1) -----MAANQPAQGSAIAANCGAMSPPEYDLSMIVVYMDHHD---QERVPHVNDVYDQVTRALFWRVWICVKAQVKTQASSD
 S. cerevisiae Ptl (165) -----PDILSKASKHLPSDFGS1IAPKUQIIPVSPPLQIITSVIISLNGCNQENIQLKSQLESPTDTSEDVYTSVDTALIETDVSVTIV-----
 S. pombe Ctf1 (186) RTFQYQNSKSSQNKGDYTSQTSIISNPTSIAPKUQIIPVSPPLQIITSVIISLNGCNQENIQLKSQLESPTDTSEDVYTSVDTALIETDVSVTIV-----
 A. thaliana CstF-64 (146) -----GGPVGQCSQFTSNQLOVACDSDPAHLLAKMGRSOLTHIISLCAIATN-----KEHHLQALMSRQLLKKVLLVQMLAVSUSULQO-----
 O. sativa CstF-64 (149) -----GGSQTANVQNGLPVQVQGDPDPAHLLAKMGRSOLTHIISLCAIATN-----KEHHLQALMSRQLLKKVLLVQMLAVSUSULQO-----
 H. sapiens CstF-64 (107) -----GAPVIESPGYETISPEDAPESRKAASAPPELWNEKRGDQGKQCS-----POEARMLVQGQKQCYALIALLQAVVVMRVVDIPEALKJTH-----
 D. melanogaster CstF-64 (107) -----GQPVENPYGECPEDAPESRKAASAPPELWNEKRGDQGKQCS-----POEARMLVQGQKQCYALIALLQAVVVMRVVDIPEALKJTH-----
 C. elegans CstF-64 (109) -----APAPVENEYPGECPEDAGKAPERKAKSIAPEKERNLKKQIQUESTKRN-----PSELHKPVEHCGQAYALLQAVVVMRVVDIPEALKJTH-----
 S. cerevisiae RNA15 (109) -----QYNNINGNNNNNNNNNNNNSNEDPONSGNINFLSQKFPPIPSCGUNNNMTTPAMMISEIACKPKVEQKLPFKQEWTRAHEDAVS-----

Hinge

301

400

A. thaliana ESP1 (76) -----EPQAVQOPQ-----QSHQSQPPKPN-----VQAHQMSFFGGSVHEPAPVMPQPA-----
 G. max ESP1 (75) -----QPMVQPNNLQSVQSPQTKQPKIQLQAPPLGLPGLQDQAGQGSQTL-----IPLRKHQNQPVQPVVSS-----
 O. sativa ESP1 (76) KAQPAAVQATPSSVKPVTQDHSSFPQFQPLSPSSQNPQSPGSFSSGPSNPASSLDLPMAMNPQIQAQAKG-----
 S. cerevisiae Ptl (256) -----K5QVGEAPSLLSSNS-----
 S. pombe Ctf1 (279) -----
 A. thaliana CstF-64 (228) -----SPNIVQAPS-----HMTGQSIQDAQSLG-----QNLLPPLAQRQSLQSRAPL-----QYPVQ-----
 O. sativa CstF-64 (235) SQQ-----PSSSLAQSSHISSEFPQFPDAMISSVPRPSASLPLPNPVNLDQPSAQLHNFQPYHPSQAGPT-----
 D. melanogaster CstF-64 (193) QCTNQPTLIAAGNPQPVHAGGPGSGNSVNMQNPQAPQAPQASLQGMHVNAGPPLM-----QAGQGPPACQGMPAAVTPGPGPSLAPGGQMAQAVGMPGSPVSM-----
 C. elegans CstF-64 (192) KANQMPVPLGGN-----HQQPGN-----HTMMGQOPQVQ-----QVTFQPPQQQAPQPMVPM-----
 S. cerevisiae RNA15 (193) -----LILHRNKAATLTPFH-----
 (200) -----

401

500

A. thaliana ESP1 (121) -----P1-----KHTPTQPMPPPPPPVSANSAQSQPRFHSFQHQGRQGHLLNPVATSMSPHQSSQVQNAPEP-----ASHHPTSQQPFHHLDIPASSTQLQQPMHSGGPHVHA-----
 G. max ESP1 (133) -----AVP-----ALSHQSQPMAAQSLTMPQPKGHLLPQVALASLSPQSSLNPIPS-----SLSLHSQQLHPTOMTASSHLHQLLPTGPHPMLPQF-----
 O. sativa ESP1 (147) -----YFIHQ-----MPPTSTQTQSQHSATLPH-----SSQYSNIPSHMPVTPHSQOPQPLQNPQMFNQQLQFP-----
 S. cerevisiae Ptl (273) -----NSNTVS-----IRNNTPLHVS-----
 S. pombe Ctf1 (279) -----
 A. thaliana CstF-64 (276) -----QSSKQPLFSQ-----IAPQGPFSVNP-----PRSQVKVENEAPFQ-----
 O. sativa CstF-64 (299) -----IPPHGSQSGVGV-----IPLSQLQASSV-----PLPLATSGSLISQSVQPPMMPHPR-----
 H. sapiens CstF-64 (293) ERGGVPMQDPRAAMQRGSLPANVPTRGGLGADPNDRGGTLLSVTGEVEPRGYLGPQGPMHHHVGHESRGP-----PHLRQGLPPEPPLRMAPEP-----
 D. melanogaster CstF-64 (242) -----GPGFPTA-----HPNDIPLRMLV-----GG-----PMPMDPRRMGR-----
 C. elegans CstF-64 (208) -----TPQGA-----PMQQQMPMPK-----
 S. cerevisiae RNA15 (200) -----

R123Stop

501

600

A. thaliana ESP1 (220) Q-----QOSRPYHQQGQA-----TGPNT-----FQHHGAPTOQHLSQPMYHSGNRPPASGGPQFPQGPQHPLPS-----
 G. max ESP1 (219) I-----R-----Q-----RQAPMPTFHQPFPEMGANL-----EQHAGASHNLSMSMHPFGTKPQASVGSTFQPLGQKSS-----
 O. sativa ESP1 (208) LPQ-----LPRPNNQDFVHQMPFVPSSE-----SHTNAQPHMLQSMSMPHFPQGGNPTQSFPLTGQPLPNQPPPLPQNPQPPPQLYQITRLVALESCRY-----
 S. cerevisiae Ptl (292) -----NEVSNNPMPMLNV-----PPMPSMTPPIFLPLQ-----
 S. pombe Ctf1 (279) -----
 A. thaliana CstF-64 (314) R-----QQVVPASTNINGYSSC-----SVPN-----QPSQSVPHQALPNSVNMQCG-----
 O. sativa CstF-64 (351) P-----PAMPAGMQLPLTHFHVQPV-----QDPIAQKMRPFEQPNQRNST-----
 H. sapiens CstF-64 (393) DQRGPPLDGRGGRDPRGIDARGMEARAMEARMEARMEARAMEARAMEARAMEARMEVRGMEARGMDR-----
 D. melanogaster CstF-64 (242) -----MDQDLRASLFVPPPE-----DPRARAGM-----Q-----
 C. elegans CstF-64 (228) -----MDQDLRASLFVPPPE-----TFAHGPSS-----
 S. cerevisiae RNA15 (200) -----E-----

601

700

A. thaliana ESP1 (280) -----QPTYQQGGQQYRGDYNNNQLAGLMAQDRGSPSWMAQGESSNITHLPGLGPVPPPSQVGPQGGPPPRPAPISAEKMKALLD-----VLSLTPBQINL-----
 G. max ESP1 (280) -----QCPYQVQVNVPSCPGEFPGNQOGNAQMDVRAAS-----MPGFSNLALHLSGPQGPVYVVSQCMGAANQPLRPA-----LTPHNEKALLD-----VLSLTPBQINL-----
 O. sativa ESP1 (297) KYCVQCLVFTAMMGSASHASHYNSQSMQMDRSTPWGRNAAE-----SAGTHFPHGLPGLQGPMQTCQGIGGIHSARPEAALPTEKEMLV-----VLSLTPBQINL-----
 S. cerevisiae Ptl (324) -----Q-----PFGFAPGPPGPFPQAQGQSPMQR-----KQALQDHMMQPS-----
 S. pombe Ctf1 (279) -----QVVAVAKNKHQPA-----ATSSPSVPQKIPFSNHQSQANGSDQG-----NEGKRNAI-----E-----ALTPBQINL-----
 A. thaliana CstF-64 (357) -----QTWSLNPFGKPHQPSQMRPSK-----KVEDRRTSLSLPGHHGVNSNMLPNQAOQPTQHIS-----FVQST-----VLSLTPBQINL-----
 O. sativa CstF-64 (393) -----EFAHFLPKLRKLEDTGSTPFWVNNPA-----YPAF-----QGMLPGPPGSYNSAASFVQPPNEVQPV-----LTPHVESEALL-----VLSLTPBQINL-----
 H. sapiens CstF-64 (469) -----GFPVGPGRGPIPGQSPSPINMGLRAVPGQSRQVPMQGTMQGASIQGGSPQGFFSPQGQNPVTP-----ODHEKAAI-----EMCQGUTA-----Q-----
 D. melanogaster CstF-64 (307) -----GVPQAPPAPQYPSDFRPMDFRLRAGPQGQQQAPP-----QGIPQAPPPTQQQAAAQQLQSLRGAHGVLPVSDASQEKAA-----LMLVQ-----LSDQV-----
 C. elegans CstF-64 (236) -----MGPMPGMPGMPGMHGPQAPQYQGNYQGP-----PQYQKPPQQOPPQVMRPPVQQPQPNHQ-----EEQQNAE-----LMLVQ-----SEHIDQ-----
 S. cerevisiae RNA15 (201) -----LCPQLSFTVIA-----LLTNGICKVDDLIPLASRQESEASATNNNSVNEVVDPAVLNQKE-----

701

723

A. thaliana ESP1 (373) PEQKQOQI-----QOQI-----R-----
 G. max ESP1 (372) PEQKQOQI-----QOQI-----R-----
 O. sativa ESP1 (397) PEQKQOQI-----QOQI-----R-----
 S. cerevisiae Ptl (410) S-----Q-----Q-----Q-----KEYII-----
 S. pombe Ctf1 (347) PAQDCDOS-----Q-----RQHFQ-----
 A. thaliana CstF-64 (439) PEQKQOQI-----QOQI-----R-----QDHHMMQPS-----
 O. sativa CstF-64 (478) V-----Q-----Q-----Q-----LQKLM-----SAGK-----
 H. sapiens CstF-64 (557) PEQKQOQI-----Q-----Q-----Q-----E-----QKSTGAP-----
 D. melanogaster CstF-64 (400) SEQVS-----W-----Q-----Q-----AKSTQR-----
 C. elegans CstF-64 (318) AGD-----KEK-----M-----Q-----Q-----Q-----Q-----LKNRNV-----
 S. cerevisiae RNA15 (275) DEQMA-----W-----Q-----Q-----R-----Q-----G-----F-----G-----F-----G-----F-----G-----G-----F-----G-----F-----

PC/sub1/res1