

human -----MEDGV 5
sheep -----
cow -----
dog -----
mouse -----MEDGV 5
rat -----
frog -----MEKAF 5
zebrafish -----
honeybee -----MEKKHGSDVVEDEELEESE 19
fly MSDAAKSNNNASADAPDPTTPDATGEADAANAATPTTPRGNHNNNSANGRSKNKIKSTQ 60
worm -----
yeast -----

human AGPQLGAAAEAAEAARARPGVTLRFPAPLPGAAEADEGGG-DWSFIDCEMEEVDLQDL 64
sheep -----MHFRNFNYS 9
cow -----MPAPS-----MDCD-- 9
dog -----MLRDTMKSWNDSQSDLCSSDQEEEEEEMVFGENEDDLEEMDFSDL 45
mouse AGPRLG---EVAEAVEARAPRRVTLRFPAPFSAAAEGDGGGGGWSFIDCEMEEVDLQDL 62
rat -----MHFRDFNYS 9
frog R-----DLAAQIGAAAAESPPTANDWDFLDIDMESIDLRL 41
zebrafish -----MREGKLSRNSSEGHSSDPEEDEEEMAFGDTEDDYEEEMDFSDL 44
honeybee N-----IINEVDGLPNLHPNYQQLELEFDIEKRSDDRISIEDLVRDEDL 64
fly NSSGGGSIDKLSPDQDIFINAADGLPNQHP---SLPKEGVD---SDTEPEVDADSFDDL 114
worm -----MVADNSEKSTKSVANGSLISTVSSKDDL 28
yeast -----MGNIIITDTIITS 13

exon 5

human PSATIACHLDPRVFDGLCRAKFESLFRTYDKDITFQYFKSFKRVRINFSNPFSAADARL 124
sheep FSSLIACVANS EIFSETRAKFESLFRTYDKDITFQYFKSFKRVRINFSNPLSAADARL 69
cow ASTLVACVDFVEVFTNQEVKEKFEGLFRTYDDCVTFQLFKSFRVRINFSNPKSAARARI 69
dog PTLFACSVHEAVFVEQEQERFEALFTVYDDQVTFQLFKSFRVRINFSKPEAAARARI 105
mouse PSATIACHLDPRVFDGLCRAKFESLFRTYDKDITFQYFKSFKRVRINFSNPLSAADARL 122
rat FSSLIACVANGDVFSESETRAKFESLFRTYDKDITFQYFKSFKRVRINFSNPLSAADARL 69
frog PTALIGCSLEPSVFYDGIYRTKFSLSFKAYDKEATFQYFKSFKRVRINFSNPISAAEARI 101
zebrafish PTALFACSVHEAVFEDDRYRERFEALFRIYDDQTSFQMFKSFRVRISFSTPEAAARARI 104
honeybee PTSVIVTNVDPRVFKSDELKHEIQDLFKQFGKDATFQYFRSFRMRVNYSSPNAANARI 124
fly PLSIIVTNIHSEVFANPELKHAMEELFRTFSESATFQWLSFRRLRVNYDNAIAANARI 174
worm PTNIIIVTQVPEEDVFNKQDKANFSSLFTQIEKDIHFDFLRSFRVRVIFSSPENATAAKL 88
yeast DKCDIVDNDNVERIQVWLSKNILRKFQINENEPLQLIILKRFKRILLICPSHDISQHVMD 73

exon 6

human QLHKTEFL-GKEMKLYFAQTLHIG---SSHLAPPNDKQFLISPPASPP-VGWKQVED 177
sheep QLHKTEFL-GKEMKLYFAQTLHIG---SSHLAPPNDKQFLISPPASPP-VGWKQVED 122
cow ELHETQFR-GKLLKLYFAQVQTPETDGDKHLAPPQPAKQFLISPPASPP-VGWQPISD 126
dog ELNETDFN-GKLLKLYFAQVQMSSETRDKSYLLPPQPVKQFLISPPASPP-VGWKQGED 162
mouse RLHKTEFL-GKEMKLYFAQTLHIG---SSHLAPPNDKQFLISPPASPP-VGWKQVED 175
rat QLHKTEFL-GKEMKLYFAQTLHIG---SSHLAPPNDKQFLISPPASPP-VGWKQVED 122
frog QLHKSEFL-GKIKLYFAQTLHIG---SPLAPPNPEKQFLISPPSSPP-VGWKQKED 154
zebrafish ELHESDFN-GTKLLKLYFAQVQNSGDDVDKAYLAPPQPVKQFLISPPASPP-VGWSQSED 161
honeybee QLHQYTFHG-ETNINCYFAQVPTPI-DVEDQHLQPPALTKQFLISPPASPP-IGWEPREE 180
fly KLHQYEFNKKITCYFAQVPTP---VSNKNLQPPAPVKQFLISPPASPP-AGWEPREE 229
worm IVQGFSFK-GHELKAFFAQRIYMSAN--SQMLSPPLEKQFLISPPCSPP-VGWEQTKD 143
yeast ASRALEME---NFNFYSYSLQDQQR-NLTQYLVKVPSEKMFISPPASPPPEFDFSKCED 129

exon 7

human ATP-VIN-YDLLYAI SKLGPGEKYELHAATDTTPSVVVHVCESDQE-KEEEEE-MERMRR 233
sheep ATP-VIN-YDLLYAI SKLGPGEKYELHAATDTTPSVVVHVCESDQENEEBDE--MERMKR 178
cow ATP-VLN-YDLLYAVAKLGPGEKYELHAGTESTPSVVVHVCDSDIEEBEDPKT-----S 178
dog AMP-VIN-YDLLCAVSKLGPGEKYELHAGTESTPSVVVHVCESETEEBEETKN----- 213
mouse ATP-VIN-YDLLYAI SKLGPGEKYELHAATDTTPSVVVHVCESDQENEBEEM--MERMKR 232
rat ATP-VIN-YDLLYAI SKLGPGEKYELHAATDTTPSVVVHVCESDQEEEEEEEEEMERMKR 180
frog ASP-VIN-YDLLYAI SKLGPGEQYELHAATDTTPSVVVHVCESDPENELIEEEDGMSK 212
zebrafish ATP-VIN-YDLLCAVAKLGPGEKYELHAGTESTPSVVVHVCESETEEBEEM-- 211
honeybee NEP-LVN-HDLLAAIANLSAGGSHELHPGGSGQPQIVVH---VCETTNPICKNV----- 228
fly GEP-LVN-HDLLAALASLTGESHLEHPQSEDQPAIIVHTAMLAETGPGQVVK----- 280
worm MPP-VVCFNFDMARLASFAIDKEYEVHNGDELTPAIIVHPCETPIDVPSAIEM----- 195
yeast APQRHIQSHIQDQQRLEASQLLNNPDKNNNGTFTLLKSKVGAITIDRCPTNDGNGQM 189

human PKPKIIQTRRPEYT-----PIHLS--- 252
sheep PKPKIIQTRRPEYT-----PIHLS--- 197
cow PKPKIIQTRRPGPP-----PSVSN--- 197
dog PKPKIIQTRRPEPPAAALS EPQNF DGAL 241
mouse PKPKIIQTRRPEYT-----PIHLS--- 251
rat PKPKIIQTRRPEYT-----PIHLS--- 199
frog PKPKIIQTRRPEYM-----PIHLS--- 231
zebrafish PKAKIVQTRRPDGP-----PKIYN--- 230
honeybee --PRIQHTRCPEHS----- 240
fly --APIVQTKCPERA----- 292
worm --PRTPRPSSPCEQ----- 207
yeast QLADHVKTAFPPKSFIDTDDDD----- 211