

z5a1 -----MHHSARLCLFLLCVLSGTYGGKVLVPLDGSHWVNMKVLIEELHRKGNHTVVRPNSWYIKKESPFYSPITIPNTGGF---DEEFGSLLINR 91
z5a2 -----MHSIHILGLFLLCLVLSRSYAGKLLVVPVEGSHWVNMKVLIVLHLSRGHSITVVRGSSWYIEEQSPLYTSITVDN-GEF---DDDFMEKFFPH 90
z5a3 -----MHPSTHLGLFLLCLVLSRSYAGKLLVVPVEGSHWVNMKVLIVLHLSRGHSITVVRGSSWYIEEQSPLYTSITVDN-GEF---DDDFMEKFFPH 90
z5a4 -----MHPSTHLGLFLLCLVLSRSYAGKLLVVPVEGSHWVNMKVLIVLHLSRGHSITVVRGSSWYIEEQSPLYTSITVDN-GEF---DDDFMEKFFPH 91
z5a5 -----MPSLPLATLLAFLSILSLVFGGKVLVPLDGSHWVNMKVLIEELHTRGHNTVLRASNSWYIKKESPFYTSITVNSGGI---EKELFEFVSRN 90
f5a1 -----MLRPTSLPLLLLICIVSVVNAAGKVLVFPDGSHWVNMKVLIEELHTRGHNTVLRASNSWYIKKESPFYTSITVNSGGI---EKELFEFVSRN 91
f5a2 -----ML-----LQAVLLLYLTSVNVAGKVLVPLDGSHWVNMKVLIEELHARGHEVTVVRPDSWYIKAESYYKSIITLSSSAGF---DEEFGFLFATE 87
f5a4 -----MLRPTSLPLLLLICIVSVVNAAGKVLVPLDGSHWVNMKVLIEELHARGHEVTVVRPADSWYIKAESYYKSIITLSSSAGF---DEEFGFLFVKE 91
f5a5 -----MWPPLSPLLVALLFIQVPPVSSAGKILVFPDGSHWVNMKVLIEELHTRGHNTVLRASNSWYISQKSPFYRSVTLGSSNGF---EDN-METVYLVQ 93
t5a1 -----MLPPTSLSLLLLLCCFSLVNGGKVLVFPDGSHWVNMKVLIEELHARGHEVTVLRPADSWYIKAESPHYKSIITLKSSAGV---DKEFLGVVTR 91
t5a2 -----MLPPTSLSLLLLLCCFSLVNGGKVLVFPDGSHWVNMKVLIEELHARGHEVTVLRPADSWYIKAESPHYKSIITLKSSAGF---DEEFGFLFATE 91
m5a1 -----MYRQTLVALAVFFVSSFLVNGGKVLVFPDGSHWVNMKVLIEELHARGHEVTVLRPADSWYIKPDSPHYKAITLNSPAGF---DSKFGSFFVTR 91
s5a1 -----MYRPALAALAVLLCSSLVNGGKILVFPDGSHWVNMKVLIEELHARGHEVTVMRSSDSWYIKPESPHYRSITVNSAGF---DEEFGFLFVDT 91
s5a2 -----MRALRSSLIIFALLVQLSS-SSWGKILVFPDGSHWVNMKVLIEELHARGHEVTVVRPDSWYITKESPFYTSITVNSAGF---NOKVFEAFLLR 93
z5b1 -----MIGQTFQPCGQILIALLLVVPVTAQSEKVLVFPDGSHWVNMNVLVEALHAKGNHTVIRMSADSWYIKKESPHYTSINLKSAGGF---DEEFPFETFAFR 96
z5b2 -----MNGQWQVWIPTITLTLVPSVPAQCGKVLVFPDGSHWVNMNVLVEALSAGKHDVTVMRTASWYIKKESPHYTSINLKSAGGF---NKEVLEQFASR 96
z5b3 -----MNGKVFHMRWVPTLTLVPSVPAQCGKVLVFPDGSHWVNMNVLVEALHAKGNHTVIRMSADSWYIKKESPHYTSINLKSAGGF---NKEVLEQFASR 96
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z5c3 -----MAPLFKNLCSVSLWITVITIFGSLCDGGKILVAPLEGSHWVNMNVLVEALHARGHQSIVVRSSDSWYIKKESQFYTSITLDRPTGF---DDDFITMVFAR 97
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m5c1 -----MISRRSSGVFLFFSIFCSWRIGQAGRILVFPDGSHWVNMNVLVEALHARGHQSIVVRSSDSWYIKKESQFYTSITLDRPTGF---DDDFITMVFAR 96
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m5c7 -----MK-LPLCCCALLVLLVTFCHGGNVLVPAEGSHWVNMNVLVEALHARGHQSIVVRSSDSWYIKKESQFYTSITLDRPTGF---DDDFITMVFAR 92
s5c1 -----MPPNRYAT-SLLLSIVLLSWRICHGRKILIFPLEGSHWVNMNVLVEALHARGHQSIVVRSSDSWYIKKESQFYTSITLDRPTGF---DDDFITMVFAR 95
s5c2 -----MR-LLYCSIVLLVTFCHGGNVLVPAEGSHWVNMNVLVEALHARGHQSIVVRSSDSWYIKKESQFYTSITLDRPTGF---DDDFITMVFAR 92
z5d1 -----MKSFFSQSNVITGLFLALSAFLSCSGGKILVFPDGSHWVNMKILLALHARGHNTIVRSSKSWYISENTYYKIVTVVVERSL---DORAITRIVSE 97
m5d1 -----MHQVCGVVFVFNLCFLHFLAPS CSGGNILVFPDGSHWVNMKILLALHARGHNTIVRSTSWYIKKESPIYSSITVEM-EEA---LEDFFDVVFKE 93
z5d2 -----MYRVCGLLACFSLCLIFLVPSCSGGNILVFPDGSHWVNMKILLALHARGHNTIVRSTSWYIKKESPIYSSITVEM-EEA---LEDFFDVVFKE 93
z5e1 -----MLLHPQISVLAFAIWSLPSLGLAGKILVFPDGSHWVNMNVLVEALHARGHQSIVVRSSDSWYIKKESQFYTSITLDRPTGF---DDDFITMVFAR 96
f5e1 -----MASYPVLTFLVFFSAALSSTCQGGKVLVPLDGSHWVNMKILLALHARGHNTIVRSTSWYIKKESPIYSSITVEM-EEA---LEDFFDVVFKE 96
t5e1 -----MASCALVLLVFFSAALSSTCQGGKVLVPLDGSHWVNMKILLALHARGHNTIVRSTSWYIKKESPIYSSITVEM-EEA---LEDFFDVVFKE 96
t5e2 -----MASCALVLLVFFSAALSSTCQGGKVLVPLDGSHWVNMKILLALHARGHNTIVRSTSWYIKKESPIYSSITVEM-EEA---LEDFFDVVFKE 96
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m5e2 -----MASFPALMFFLLFTFLNCGCESGKVLVFPDGSHWVNMKILLALHARGHNTIVRSTSWYIKKESPIYSSITVEM-EEA---LEDFFDVVFKE 96
s5e1 -----MESHAPALAFLLVFFSAALSSTCQGGKVLVPLDGSHWVNMKILLALHARGHNTIVRSTSWYIKKESPIYSSITVEM-EEA---LEDFFDVVFKE 96
z5f1 -----MDIIFVVQIVVLSLTLPL-VHCGKILVFPHEGSHWVNMNVLVEALHARGHQSIVRALSWSYIPEPSPHYDSINVPFLGG---DDQFYHSPFIR 90
f5f1 -----MFLLFATVICLPTSMIPEVLGGNVLVFPHEGSHWVNMNVLVEALHARGHNTIVRSTSWYIKKESPIYSSITVEM-EEA---LEDFFDVVFKE 91
m5f1 -----MTM-LWVWTCFVWCVSVVHSGKVLVFPDGSHWVNMNVLVEALHARGHQSIVRALSWSYIPEPSPHYDSINVPFLGG---DDQFYHSPFIR 89
m5f2 -----MTM-LWVWTCFVWCVSVVHSGKVLVFPDGSHWVNMNVLVEALHARGHQSIVRALSWSYIPEPSPHYDSINVPFLGG---DDQFYHSPFIR 89
m5f4 -----MAMSLTIFCLVIVVPSQGGKILVFPDGSHWVNMKILLALHARGHNTIVRSTSWYIKKESPIYSSITVEM-EEA---LEDFFDVVFKE 91
s5f1 -----MFLTLVSIIFLAGIIPAAVGGKVLVFPDGSHWVNMNVLVEALHARGHNTIVRSTSWYIKKESPIYSSITVEM-EEA---LEDFFDVVFKE 91
z5g1 -----MDMSK---WLALCLLSVCCCHGGNVLVFPDGSHWVNMVILRKLHARGHNTIVRSTSWYIKKESPIYSSITVEM-EEA---LEDFFDVVFKE 95
z5g2 -----MQGMS---LVFLWTLSSLVPSGNADKILVFPDGSHWVNMVILRKLHARGHNTIVRSTSWYIKKESPIYSSITVEM-EEA---LEDFFDVVFKE 95
f5g1 -----MSRIIP---VFLAGLCLLLGPTLGSRRILVFPDGSHWVNMVILRKLHARGHNTIVRSTSWYIKKESPIYSSITVEM-EEA---LEDFFDVVFKE 95
t5g1 -----MSRIIP---VFLAGLCLLLGPTLGSRRILVFPDGSHWVNMVILRKLHARGHNTIVRSTSWYIKKESPIYSSITVEM-EEA---LEDFFDVVFKE 95
m5g1 -----MSPAVSGLLTVLGLLGLLGGSPCSSKILVFPDGSHWVNMKILLALHARGHNTIVRSTSWYIKKESPIYSSITVEM-EEA---LEDFFDVVFKE 97
s5g1 -----MSGVIP---LFLAGLCLFLRPTCCGSRILVFPDGSHWVNMVILRKLHARGHNTIVRSTSWYIKKESPIYSSITVEM-EEA---LEDFFDVVFKE 95
s5g2 -----MSGVIP---LFLAGLCLFLRPTCCGSRILVFPDGSHWVNMVILRKLHARGHNTIVRSTSWYIKKESPIYSSITVEM-EEA---LEDFFDVVFKE 95
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t5h1 -----MGGISAGSLAILLVGSLIASPSVHGGKILVFPDGSHWVNMNVLVEALHARGHNTIVRSTSWYIKKESPIYSSITVEM-EEA---LEDFFDVVFKE 99
s5h1 -----MGFNQGLVLLLASLTLGSGVLAGKILVFPDGSHWVNMNLLIQLHARGHNTIVRSTSWYIKKESPIYSSITVEM-EEA---LEDFFDVVFKE 97
x5a1 -----MAPMRRMLCTSVFLCAAVLSVQAGKILVFPVEASHWVNMNVLVEALHARGHNTIVRSTSWYIKKESPIYSSITVEM-EEA---LEDFFDVVFKE 97

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z5a1 LLEIKRGG-----YFVLRNVRLEFPIIMMKFKTMHEDMLQMDMRMLEDE-KVMNSIQDAKFDVVLADPAVGGGPIILAYKFNIPLVFNVRWTIQGEGHF 184
z5a2 LLKIQRQG-----KSPWNEALADEMIHFVTEIHKQSCNMTAILFKNE-TLMNSLKDAADVVLLTDPAYGSGVLLAHRLGLPLVYNVRWTYVGEAHF 183
z5a3 LLKIQRQG-----KSPWNEALADEMIHFVTEIHKQSCNMTAILFKNE-TLMNSLKDAADVVLLTDPAYGSGVLLAHRLGLPLVYNVRWTYVGEAHF 183
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z5a5 LLVIRRQK-----RSPWTKLKLVEVGAVFEMHRNQLNLMGNIFENK-DLMDSLQAKYDVLVLLTDPAYGGGFLLAYRLGLPLVYNVRWTMHGEAHF 183
f5a1 LLKMRREG-----ASLWSRLKLEVDLVELFRQIHKHIVEMVEMGFENT-QLMQILRDAKYDVLVLLTDPAGGGGVLLAHRLGLPLVFNVRWTIQGEGH 184
f5a2 LLAMRREG-----ASFWNLLTLEKMMETFSIMNNLVIQIAGEMFENT-QLMQSLHDAKYDVLVLLTDPAVPTGVLLAHRLGLPLVYNVRWTIQGEGH 180
f5a4 MLAMRREG-----ASLWSRLKLEVDLVELFRQIHKHIVEMVEMGFENT-QLMQILRDAKYDVLVLLTDPAGGGGVLLAHRLGLPLVFNVRWTIQGEGH 181
f5a5 QLEIRLAGRNASWSRFTNLQLRQVVHQFSQFHKGMSEMVTOQFEDT-KLMLSQEAQYDVLVLLTDPGGGGAILARRLQVPLIYNVRWTIQGEGHLL 192
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s5a1 MMNMRKRG-----ASLWARISLEFELVEKFFYQMNKEVIEVMGKMFENT-KLMQSLTDAKYDVLVLLTDPAGGAILARRLQVPLVFNVRWTIQGEGH 184
s5a2 QLEIRLQGRHGFSWSKIWTKIQIERLVVQFSQFHKGMSEIAVQMLEDE-NLMQSLFEAKYDVLVLLTDPGGVGMALARRLGLPLVFNVRWTIQGEGH 192
z5b1 LMKIVREG-----SRWGRKLEIETWQSYEMIEIESEMIKNMLEDQ-PLMQTFRDAKYDVLVLLTDPPLFGGVILGHFLKLPVYNVRWTMYNEAHFV 188
z5b2 TMHILRDG-----STWGHLLKQADMWQSFLLKIFAEEREMITNMIEDQ-QLMQLSLKDAKYDVLVLLTDPNMFGGVILGHYKLPVYNVRWYAGYNEAHF 188
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z5b4 LITILRDG-----STWGRLLKMEMWQSSLLKIMETEREMITNMIEDQ-QLMQLSLKDAKYDVLVLLTDPAMYGGVILGHYKLPVYNVRWYVGEAHF 188
f5b2 LLEIQREGK-----SPWTRCKLEIEQAETREMFKESEFVKMLLENK-DLMQSLKNTNFDVLVLLTDPVAPVGAAILANYLKLPLVFNVRWYVSHGEGH 183
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z5c3 VINERKGS-----SWSVTKLFFDSVIDNYEMTKMVCIDITTSIFESE-EILKTLQEKQYDLMVLLTDPVWGMGIIIAHKLKLPVYNVRWYVPEEGH 190
f5c1 IIDIRGERG-----PAWNFVSLQEMFTSMYMRHRLICQMAANFTDDR-NLMNLTLEKNDYDLALVDPAWGAGLMLAHALKLPLAYVYVWYVSHGEGH 188
f5c2 IQFERGAL-----PLTSFLHITFGMTSTFIDAHSAIGEFIAALDDQ-ELMRTLKKNKYDVLVLLTDPVWGSIIIAKYLNLPLVYNVRWYVSHGEGH 186
m5c1 IFAIERKGT-----SIMSFLSLLIEMFGTMMFDMGMCKMATMLEDK-ELMGVLRKKYDVLVLLTDPVWAGIIIAHALELPLVYNVRWYVSHGEGH 189
m5c2 VFAIERREKT-----SMMNFVLLIEMFRTMFMHGMCKMATMLEDK-ELMGVLRKKYDVLVLLTDPVWAGIIIAHALELPLVYNVRWYVSHGEGH 189
m5c4 IFAIERKGT-----SIMSFLSLLIEMFGTMMFDMGMCKMATMLEDK-ELMGVLRKKYDVLVLLTDPVWAGIIIAHALELPLVYNVRWYVSHGEGH 189
m5c5 FIHFORGAL-----PITSFLHMSLGMIGKLEAEPVGEFVTAAMNDK-ALMKTLENSKFDVLLTDPVWGGVILAKYLNLPLVFNVRWYVPEEGH 185
m5c7 FLQFERGAL-----PLTSFLSFSVGVIGVFFEAHSVAVCELVSAVDDA-ALMKTLENSKFDVLLTDPVWGGGAILAKYLNLPLVYNVRWYVPEEGH 185
s5c1 VIDIERGES-----VWVSFAEQAEEMFAMFNVRHIMCKMATMLEDK-DLMKTLKDRKYDVLVLLTDPVWAGIIIAHKLKLPVYNVRWYVSHGEGH 188
s5c2 ALEFERGAL-----PLANFHLHTVGMFTFVDAHAIVGCKLSAMLDDK-EFMRTLVKEGNFDMVLLTDPVWGHGIIIAKYLNLPLVYNVRWYVSHGEGH 185
z5d1 AMEIERGEG-----SGLAFLLKQYDLFSLMSTAHEIAECKMVSILEDK-MLVKKLQEQYDLMVLLTDPVWAGIIIAHKLKLPVYNVRWYVSHGEGH 190
m5d1 QIRVOREGA-----SLSFFRLRHKDFISMMSSHAHALRCAATKHIFENK-NLVKQIIDSDFVLLTDPVWAGIIIAHKLKLPVYNVRWYVSHGEGH 186
m5d2 QIKVOREGA-----SMLSFFKLNKDFLSMLTQAHVLCVDTKIDIFENE-DLAKQITDSKYDVLVLLTDPVWAGIIIAHKLKLPVYNVRWYVSHGEGH 186
z5e1 NIDIQRGKG-----SIWSFLALQKEIITLLESRSRSTAEAMRVVLEDE-ELIKTLKESKYDLMVLLTDPVWAGIIIAHKLKLPVYNVRWYVSHGEGH 189
f5e1 SIEIRRRREG-----SLWAFEFYQNLFNMLESSQDQVAKMVIDIFENE-TLIMKLLKTEYDFMLLDPVWGGVILAHYLLQPLVLSARWAFSGEASH 189
t5e1 SIDIRRRREG-----SLRGFFEYQNLVTFLEQSQDQVAKMVIDIFENK-TLSTKLKETNDFVLLTDPVWAGIIIAHKLKLPVYNVRWYVSHGEGH 189
t5e2 SIDIRRRREG-----SLRGFFEYQNLVTFLEQSQDQVAKMVIDIFENK-TLIRNLKDEYDFVLLTDPVWAGIIIAHKLKLPVYNVRWYVSHGEGH 189
m5e1 LLEGRQYQG-----TLWGLFEFYRNFSKLLKENQQLVANLAASIMENK-TLVKELNQTKYDVLVLLTDPVWAGIIIAHKLKLPVYNVRWYVSHGEGH 189
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z5f1 QLQIRREQR-----WTRFKLDMELKKEKFSEMHRKICEMVIHIVEKEPAIMKQIKKANFDIMLTDPAANGGGVLLARYLHLPLVFNVRWYVSHGEGH 182
f5f1 VVKIKRRHQG-----NAWSRFGLDSELKNNFYELHRKICEAIVHMFENE-DLMSFQDSKFDIVLTDPAANGGGVLLAHRLGLPLVFNVRWYVSHGEGH 184
m5f1 NIEIKRRRN-----PAWLRFLOEIEHFQFLEFHKICTLIERIFENQ-ELMQLLKNTNFDLILTDPAIPGGAILAHYLLKLPVFNVRWYVSHGEGH 182
m5f2 NIEIKRRRN-----PAWLRFLOEIEHFQFLEFHKICTLIERIFENQ-ELMQLLKNTNFDLILTDPAIPGGAILAHYLLKLPVFNVRWYVSHGEGH 182
m5f4 VIKIKRSKA-----SAWAQFSLNMVLDKGFHSFHEKVGEMIVCFMENA-TLMRSLQEAQYDVLVLLTDPNGGGVFLAHYLLSPLVNLARWYVSHGEGH 184
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f5g1 VMECRSGSE-----FLRSFCQQLHLSMLDKGKILASAAATMLDDP-KFMKLLTDAKFDLMLTDPGLTIQVVLGSYKLPVFNVRWYVSHGEGH 187
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m5g1 VLDCRRHPS-----FIRTFQEQVMTAFASNGHRILARAATTIIEQD-ALMKKIRDTEFDLMLTDPALPLGVVLLGGYKLPVFNVRWYVSHGEGH 189
s5g1 AMECRDFQP-----SIGTFQEQHLISLLGNGHEILARSAAMLLDDP-VFMKLLHDAKYDLMVLLTDPAMTLGVILGSYKLPVFNVRWYVSHGEGH 187
s5g2 VMECRSPH-----FISTFCQQLNVLSMLGKGEILARSAAMLLDDP-VFMKLLHDAKYDLMVLLTDPALTLGVILGSYKLPVFNVRWYVSHGEGH 187
f5h1 MLKIQKDDG-----ALS-FVRFYVWVLLTSLVHQQASMMGVEIFKKN-TLLQSLHDTFEDVLLTDPGLVGVVLAHELKLPVFNVRWYVSHGEGH 191
z5h1 MLTIQKAGG-----ALS-FVRFYVWVLAALSRIHRQASLMGVEIFKKN-TLLQSLRNTQFDVLLTDPGLVGVVLAHELKLPVFNVRWYVSHGEGH 191
s5h1 MLAIHKEGA-----SISGFVKFYVEMLGTLSNIHRQASLVAEMFENK-TLMQSLRNTQFDVLLTDPGLVGVVLAHELKLPVFNVRWYVSHGEGH 190
x5a1 VFTIALSKH-----SSPFLSANFIQTQVGTQIVSVAVSALFENN-NIMNELRNTQFDVLLADPVNIAQPMPLAHHLKLPVFNVRWYVSHGEGH 188

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z5a1 APPSLSYIPVPGVELTDKMSFLORVKNVLIYLFISQIQMOMVEPIYAFCHKHFGNVTVFSLFQADADLWLMRNDFTFEFPRPTMPNVIYMSGFOCKPAK 284

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z5a3 APPSLSYVVPVSGLOLTDKMTFSQRVMNMMTYIMIRYKYSKNFGSPYQELAQKYFGPNVNFSSLLQADADLWLMRNDFTFEFPRPTMPNVIYMSGFOCKPAK 283

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