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dme1 -----MHFKL RL-----LEL ---IV--GLL WQVKSHQP- -----ADPCQNF
dsec -----MHLKL RL-----LEL ---FV--GFL LVQVKSRRPQ- -----ANPCQNF
dsim -----MHLKL RL-----LEL ---IV--GLL LVQVKSRRPQ- -----ANPCQNF
dyak -----MHCKR RL-----WL ---IV--GLL LVQVKSHQP- -----ADPCQNF
dere -----MHFKR RL-----WL ---IA--GLL LGQVKSHQP- -----ADPCQNF
dana -----MSFDL RL-----LLI ---ILLPGWA RPQSQPQPQP QLPDHVTRHM NRNVDPCKDF
dper -----MRVDV QL-----LLM TTAIL--SFP SPCLCRAAQ- -LPSSMRRHM NRLADPCKDF
dpse -----MRVDV QL-----LLM TTAIL--SFP SPCLCRAAQ- -LPSSLRRHM NRLADPCKDF
dwi1 -----SSKLL SL-----LEL PKSIS----- --LHIDPK- -----IDPCEDF
dgri -----M-CKL QL-----LLL ---M--RLV LAILASDGW- --PGYLQLHM NASADPCLDF
dnoj MFNVRELCKL QLWLPLGLSL ---CLSQCLW RPILASHAR- -LPVYIQRHM NASADACVDF
dvi1 -----MCKL QS-----LLL ---SI--FVS IIVSNASQR- -LPGYLVRHM NASADACVDF

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YKVACGNWSA SHATDSYESF MDRLDYNYQE KLADLLDN-- -EREDDEPHF LQQLRNFYTA
YKVACGNWSS SHATDSYQSF MDQLDYNQYE KLADLLDN-- -EREDDEPHF VQQLRAFYTA
YKVACGNWSS SHETDSYQSF MDQLDYNQYE KLADLLDN-- -EREDDEPHF VQQLRAFYTA
YGVACGNWSS IHASDSYQSV LGQLDYNQYA KLADLLDT-- -DRGEDEPHS VQQLRYFYTA
YEYACGNWSS TEAT----SL LGQLDYNQYE KLADLLDT-- -EEKDDEPRF LQQLRYFYAA
YKHACGNWAS AHAGMGYRSA VGQLDFNYHE QLADLLEQ-P LTADQDEPRF VGLVRDYAA
YEYACGNWMM THQGRPYRSL LEQLDHVYHG KLAKLLDQ-P PPAAKEPRF VRMLRDYTA
YEYACGNWMM THQGRPYRSL LEQLDHVYHG KLAKLLDQ-P PPPAAKEPRF VRMLRDYTA
YNFACGNWAN VYRDRSYRSQ VDKLDYVFNRLADLLEEEE EYNGKQNPYF VQLLKTNYNS
YEHACGNWEE AHVTDAYSSQ LEQLDHVYHE QLASLLEQIT GAPSDGQPRF VELLRSSYAA
YEHACGNWSL AHADDVYASQ LEQLDYEYHA SLAELLEQ-- -QPGQPEPRF VQLLRDSYVA
YEHACGNWSQ AHAADAYNSQ LEQLDYMHE RLALLLDQ-- -PPSPGQPRF VQLLRDSYAA

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CRKPLSQ-DQ VLRILEHLIV MENIQNEELS ----- -VGLTAA FRLQVLIDLN
CRKPLSQ-DQ VLRILEHLIA MDNIQTEQLT ----- -VGLTAA FRLKVLPDIN
CRKPLSQ-DQ VLRILEHLIA MDNIQTEQLT ----- -VGLTAA FRLKVLPDIN
CRRPLSQ-DQ VLRISLEQLIA LEHIQFEEMT ----- -VGLTAA FRLEVTIANIN
CRRPLTQ-DQ VLRITLQLIV LADIQFEELT ----- -VGLTAA FRLEVLADIN
CRANHTV-VQ AMEVLARIIR KPSTSLEDLT ----- -VGLNTA FRWNILLDLH
CRTPLEA-TP SAEFVLKLCG MAEVDGNELA ----- -VALTAL FQTDVLEITA
CRTPLEA-TP SAEFVLKLCG MAEVDGNELA ----- -VALTAL FQTDVLEIT
CRKLSRKTYK PDKFVQFLIN WSGKNFLNEP -----N WERLHSVLMN FGLGQVLGKH
CRDQAG-YD AAQFVRWLRD LSGISMTSED ND-----N WSQVSLKKG YGVAALQQFE
CRRLDKR-YD AAQFVRWLAE WSRGETESET ESASASERGN GSALIHLLKT YGLGELLQYE
CRALNER-YD VGRFVRWLRE FSHVDMETKE N-----D WRPLLRLIK N YGLPTMWOYE

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DSNT----- ---YDIW-K QLMShRKHMD P-----NT TN--REPLTR EMFDKLWASL
DSNT----- ---YDIW-K QLLSNGEHMD T-----HT TN--REPLTR EIFDKLWAM
DSNT----- ---YDIW-K QLLSNREHMD T-----HT TN--REPLTR EIFDKLWAM
HYNK----- ---YEIW-K LLLARQEHMD P-----NT TN--RESLTR DQFDELWVRM
SDNK----- ---HEIW-K QLLSRRKDM T-----NT TN--REPLTR DKFDELWASL
GSEM----- ---TELWVT LILRHIEDMD E-----RE TR--RDAMTR GEFDRLEWHF
DSNL----- ---AAVWAQ LILRPSAEGD R-----NA SL--HQPLSR EQFDQLWRRL
DSNL----- ---ATVWAQ LILRPSAEGD R-----NA SL--HQPLSR EQFDQLWRRL
LNTL----- ---DIDKY-R WLTHIQPLWP QFWQENNEET QTVILQPLRG HQFORLFOKL
MEMQ----PE SRSDAELW-- -LLQLQPWP HSQAAATRNN CS--LSLLTR SRFRLYREL
NEEE-EEEA AEALSDAE-Q RLLQLQPWP N-PEDYLSDA GD--YEMLTH ASFRQLYREL
NERKPLSKSL KLKDAELW-- -LLQLQPWP VLPALLDD- ----FQPLNR TRFRQLYHAL

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PKIPFPFKEY YWRELSELEE KIM----- -SYGSEDDGF DSGDL----- --VTRIPPFW
PKMPFLFKEY YWHEMSELED KIM----- -SYGIKDDAS ARGDL----- --VTGIPSW
PKVPFLFKEY YWHEMSKLED KIM----- -SYGIKDDAS ARGDL----- --VTGIPSW
PKIPFPEKED FWYQVSQLLEA ELT----- -SIGSEKDEV PRDEL----- --VTWIPSW
PKKRSADKDL FWYQVSTLED EIM----- -SFGREDDGL PSDDL----- --VTWTPSW
PAAELEDKES FWRNVTVEE FLL----- -EHGEGEELA V----- --LKGPPAFW
P-APEETPDE WMPKVKELEE AIT----- -AKVEKDALG WLPDPTTDNA GTLFPVPAYW
P-APEETPDE WMPKVKELEE AIT----- -AKVEKDGLG WLPDPTTYNA GTLFPVPAYW
H-LNLDNRTL -WRSIKHLEK QIT----- -QIQDDIGT ES----- --VISLPVNW
QPLGVPEGKL -WQIQKLEK QLRLWLWLLH PSVLLDDASG VVDL----- -----TRW
QPLGVAERRL -WKQLHRLEQ QLC----- -RCAQQEQE QE----- --QMRPLMLW
QPLGVPOGKL -WLQVKLEK KLL----- -ICGIRELFG ELRESEHDEE HVMPSAFYW

MMPW--PNGN ITYE----- NLSQMAHMLD IKANEF---- -ILTYIYML KLVAEGVSTE
MMPW--PNGN ITYE----- NLFEIAHFLD LKTDEF---- -IVVYIYML KLVPEGLSKE
MMPW--PNGN ITYE----- NLFEIAHLLD LKTDEF---- -IVVYIYML KLVPEGLSKE
MLPW--PNRY LTYR----- DLYSVARLLA LRTPOF---- -MLTYMYLRL KLLPEGLSKD
MLPW--PHRN LTYR----- NLYQVAYLLK IQTPGF---- -MLTYIYLR LRVPEGRSRE
MLPW--PARL PDLW----- HFKRMLMLT IHPAQF---- -LLRYIYLR SLIPDPASCQ
MLPW--PTFE TGLS----- YVAHLSQYLA SQPPSLPPSL PAASFAAPRW RAGARGAS-P
MMPW--PTFE TGLS----- YVTHLSQYLA SQPPRF---- -LLHYLLLR LH--RDGERA
ILPLSRNFA PTEK----- YLQRLAHLN QQSSGL---- -LAPYLLRL QHRLEYSPEV
LLPL--PATT ESVEYLG-ET YLRGVSLLLA AQPPSL---- -VARYLQRL LHQLELQVP
LLPL--PAAS ARPSATRRPA YLSCVSALLA EQPVSL---- -LAAYLQRL LRLQLQAP
LQLEMPPELL TTLQLOP--- HVRCASDMLA AEPAPF---- -VARYLQRL LHKLDILPAP

SMHIDRDQCA EQSRQILSHP AAWLVEKNH- P---RLKEEP VLQDIFAEK QRFQKLLAN
SMHIDRDQCA EQSRQMLSHP AAWLVEKNH- P---RLKEEP VLQDIFEELK HRFQKLLAN
SMHIDRDQCA EQSTQILSHP AAWLVETTP- P---RLKEEP VLQDIFEELK HRFQKLLAN
SWLMDRDQCA EQSRQILSHP AAWLIEQNH- P---RLQEEP MLLDIFEELK QRFQKLRAN
SWLIDRDECA EQSRQILSHP AAWLMEKNH- P---RLQEEP VLQDIFEELK QRFQKLRAN
PWAIESNDCA LQARELLGHP VVWLMQEH- P---RLREDP VLQGLFGELK HRFQKLRAN
AWS-----AL PRVGLFITHA AWWLVEAAP- P-----
PWSFTRLECA AQGRIFITHA AWWLVEQH- P---RLQANG TLQSLFGELK QRFGLKLAN
SPRFSRLPCS TQTRQFLTHA AWWLMASSE- N---FDSWDF LMQKLFDIK QEFRELIKN
PLAFGRQCCA AQSRQLLTHA VVWLMQEAQL PQLQRQMRH SVQQLFAKLR RQFELKLLAN
AF--GRQCCA AQSRQLLTHA AWWLLQQQV- PHAQRIHTND TMHQLFEQLR QQFKLQLQVN
AF--GRQCCA AQSRQLLTHA AWWLLEQQQ- PLEQRQLTNA TMHQLFEQLR HRFELRLDN

RNNFTRSTQH FLLGKLKRM LRLSILPRNS SAQSMVRRIE RHYRDVHMNA SDYFGNLHIG
RNNFTRSTQH FLLGKLKRM LRLSILPRNC TAQSMVRRIE RHYRDVHMNA SDYFGNLNIG
RNNFTRSTQH FWSKK-KRM LRLSILPRNC SAQSMVRRIE RHYRDVHMNA SDYFGNLNIG
RNNFTRRTQQ FLVRKLRM LRLSILPRNA SALNMGQLID GHYRHMNA SDYFGNLYIG
RNNFTRRTQR HLMSKLRM LRLSILPRNS SAQYMRRID WHYRDVHMNA SDYFGNLYIG
RNQFSARVQA FLLAKLDRML LRLSVLPORG ---DKVSAIA EHYQHRLRNA SDYFGNMLQL
-----PPAA LLLKLERMS LRLSILPSTE AVESVEERVE QHYQLRINA TDYFGNLLAV
RNKFSAAQR FLLEKLERMS LRLSILPSAE AVESVEERVE QHYQLRINA TDYFGNLLAV
RNHFSKESQQ FLYDKLDRM LRLSVLPSGV RGSNLEQLL KYGDLTLN SDYFGNLLKL
RNQFDAATQR FLLDKLRM LRVGVLPTG TANEHRLQLE THYAALQLNA SDYFGNLRAL
RNRFDNATQS FLLQKLRM LRVGVLPSG SPEQQQQLE EHYAQLQLNA NDYFGNLLAL
RNQFRPSTQR FLLEKLRM LRVGVLPSG SAEQQQQTLE AHYAALQLNA SDYFGNLLTM

RRRQCRLY
RRRQCRLY
RRRQCRLY
RRRHCRLF
RRRQCRLF
KRRKPCRLY
SRTRCQLY
SRTRCQLY
PSRKCKLY
RRRICQLY
KHPLCQLY
IRNTCQLY