

Suppl File S2: Examples of Multiple Sequence Alignments for sCBRs

These are LARGE Kingdom alignments.

The sCBR ID is:

ASTRALDomainID_BiasSignature_Start_End_BiasPValue

The sCBRs are highlighted in pink.

(A) **d6m0qa_{P}_411_419_2.040e-05** mean AL2CO score = 0.35(±0.90)

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d6m0qa_      nrnppepekgfgiftqlfwskgnnpas
Q50925      NRPNPPEPEKPGFGIFTQLFWSKGNNPAS
F9ZIJ1      NRPAPPAPEKEGYAYFAQLFWSKGNSPAA
Q2YA36      NRPTPLPPDKEMFAGFTQLYWSKDNNPAA
Q223N2      -----PMDAK
A0A1W6SRU0   NRPAPMAPDKEMFAGFTQLYWSKDNNPAA
A0A0F7KIN0   NRPAPPAPDKPGFGQFTQLFWSKGNNPAS
A0A1I4XAV9   NRPTPLAPDKEMFAGFTQLYWSKDNNPAA
A0A1K1P0I0   NRPLPLPPDKEMFAGFTQLYWSKDNNPAA
M5DDF6      NRPAPPAPEKPGFAQFSQLFWSKGNNPAS
A0A1H7S0H0   NRPLPLPPDKEMFAGFTQLYWSKDNNPAA
A0A1H3PZT5   NRPVPPEPEKPGFGIFTQLFWSKGNNPAS
A0A1G5J0N2   NRPAPMAPDKEMFAGFTQLYWSKDNNPAA
A0A1G5SG74   NRPAPPEPEKPGFHIFTQLFWSKGNNPAS
A0A1H9SCG6   NRPNPPEPEKPGFMIFTQLFWSQDNNPAS
A0A1G4ZDW7   NRPAPMAPDKEMFAGFTQLYWSKDNNPAA
A0A1I3BHD1   NRPLPLPPDKEMFAGFTQLYWSKDNNPAA
A0A1H8VHN7   NRPAPPAPEKEGYAYFAQLFWSKGNSPAA
A0A1I2H304   NRPDPPPPEKPGFAIFSQLFWSKGNNPAS
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A0A1I4HHU7	NRPNPPAPEKPGFMIFSQLFWSQDNNPAS
A0A1H3R5V0	NRPAPPAPEKPGFGQFTQLFWSKGNNPAS
A0A2V3VDT8	NRPNPPAPEKPGFGIFSQLFWSKANNPAS
A0A4R1BIY1	-----PFDEK
A0A5B8RX05	NRPALPAPEQDEPGGFFSLFFAQKNQTTL
A0A840BPK5	-----PFDEK
A0A916J4W1	-----PFDEK

(B) d2q4ha1_{SM}_155_168_3.261e-06 mean AL2CO score = 1.04(±0.63)

d2q4ha1	-----vfknqga sagasmshshsqmm alpvv-----
Q9FK51	-----VFKNQGASAGASMSHSHSQMMALPVPPTVSSRLDGTKDYFEETGK
V7C4K9	-----VFKNHGASAGASMSHSHSQMMALPIIPPTVSARLASMKDHFDTGK
A0A072U914	-----VFKNHGAAAGASMSHSHSQMIALPIIPPSVSARLGSMKEYFDQTGK
A0A3Q7IH79	-----QVFKNHGASAGASMSHSHSQMIALPIVPPTVSARLDSMMEYYKQTGK
B9IPP8	-----VFKNHGASAGASMSHSHSQILALPIIPSSVSARFEGMNEYFEKTGK
M5W2M7	-----VFKNHGASAGASMSHSHSQIMALPVPVPAVATRLGSMKEYFDQTGK
B9SHG4	-----VFKNHGASAGASMSHSHSQIMALPIIPPSVSARLDGTKEYFDNTGK
D7LXS5	-----VFKNQGASAGASMSHSHSQIMALPVPPTVSSRLDGTKDYFDETGK
I1MNU2	-----VFKNHGASAGASMSHSHSQMMALPVIPPSVSARLTSMKDHFDTGK
A5C6V7	-----VFKNHGASAGASMSHSHSQIMALPIVPPTVSSRLDCMKGYFEETGK
M1AEW4	-----QVFKNHGASAGASMSHSHSQMIALPIVPPTVSARLDSMMEYYKQTGK
M4CD60	-----VFKNHGASAGASMSHSHSQIMALPVPPTVSSRLDGTKEYFEETGK
S8C1H7	-----QVFKNHGASAGASMSHSHSQIMALPIIPPTVSARIHSMKEHFERSGK
A0A061F9R4	-----VFKNHGASAGASLSHSHSQILSLPVPPSVSARIGSMKEYFNQTGK
A0A067EMC2	-----VFKNHGASAGASMSHSHSQLLALVIPPTISARINSTKEYFDQTGK
A0A067KUD1	-----VFKNHGASAGASMSHSHSQIILPVIPPSVFARLDGTKEYFDKTGK
A0A078GG55	-----VFKNHGASAGASMSHSHSQIMALPVPPTVSSRLDGTKDYFEETGK
A0A087G856	-----VFKNHGASAGASMSHSHSQIMALPVPPTVSSRLNGTKDYFDETGK

R0FC90	-----VFKNHGASAGASMSHSHSQIMALPVVPPTVSSRLDGTKEYFDETGK
A0A0A0L3Q5	-----VFKNHGASAGASMTSHSHSQIVGLPVIPPSVTTRLDSMKQYFNQTGK
W9RRZ1	-----QVFKNHGVSAGASMSHSHSQMLALPIVPPTVSARLDSMKEYFDQTQK
V4TTA4	-----VFKNHGASAGASMSHSHSQLLALPVIPTISARINSTKEYFDQTGK
V4KV20	-----VFKNQGASAGASMSHSHSQIMALPVIPPTVSSRLDGTGDHYEETGK
A0A058ZT74	-----QVFKNHGASAGASLSHSHSQIIALPIVPSNVSARIECLREHFNQTGK
A0A022RJY0	-----QVFKNHGASAGASMSHSHSQIMALPIIPTASARIDSTKEYFAQTGK
A0A0D3EEI7	-----VFKNHGASAGASMSHSHSQIMALPVVPPTVSSRLDGTGDYFEETGK
A0A0D2SST9	-----VFKNHGASAGASMSHSHSQMLSLPIPPSVSTRLNSMKEHFNQTGK
A0A0L9VKN1	-----VFKNHGASAGASMSHSHSQMMALPIPPSVSARLASMKDHFDTGK
A0A151T4Z3	-----VFKNHGASAGASMSHSHSQMMALPIPPSVSARLASMKDYFDQTGK
A0A165YBK9	-----VFKNHGASAGASMSHSHSQMIALPVIPTVSARIDSMKEHFDQTGK
A0A1S4C1U8	-----QVFKNHGASAGASMSHSHSQMIALPIPPAVSARLDSMREYYKQTGK
A0A1S2XI76	-----VFKNHGASAGASMSHSHSQLLALPIPPSVSARLASMKDFFDTGK
A0A1S3VIR6	-----VFKNHGASAGASMSHSHSQMMALPIPPSVSARLASMKDHFDTGK
Q19TV7	-----VFKNHGASAGASMTHPHSQMVGLPVPPSVTTRLDSMKQYFNETGK
A0A2C9VAS1	-----VFKNHGASAGASLSHSHSQIMALPVIPPSVSARLDGTKEYFDKTGK
A0A1R3JVQ6	-----VFKNHGASAGASLSHSHSQILSLPIPPSVSARLNSMKEYFNQTGK
A0A1Q3DBV3	-----VFKNHGASAGASMSHSHSQILALPIIPTVSADRIDGTKEYFDQTGK
A0A1J6JB59	-----QVFKNHGASAGASMSHSHSQMIALPIVPPTVSARLDSMREYYKQTGK
A0A1R3GWA5	-----VFKNHGASAGASLSHSHSQILSLPIPPSVSARLNSMKEYFNQTGK
A0A4P1RJT6	-----VFKNHGASAGASMSHSHSQILAVPIPPNVSTRLESMKSYFDQNGK
A0A1U7YE15	-----QVFKNHGASAGASMSHSHSQMIALPIVPPTVSARLDSMREYYKQTGK
A0A1U8HVG0	-----VFKNHGASAGASMSHSHSQMLSLPIVPASVSTRLNSMKEHFNQTGK
A0A251VRJ8	-----QVFKNHGASAGASMSHSHSQIIALPVIPTASTRLNSMKEYHNQTGK
A0A2G2YK81	-----QVFKNHGASAGASMSHSHSQMIALPIVPPTVSARLDSKKEYYKQTGK
A0A2G2VT83	-----QVFKNHGASAGASMSHSHSQMIALPIVPPTVSARLDSKKEYYKQTGK
A0A2G9H502	-----VFKNHGASAGASLSHSHSQIMALPVVPPTAAARIQSMKEYFGQTGK
A0A2I0L9H2	-----VFKNHGASAGASLSHSHSQIIALPVPPNVSTRLGSMKDHFSRTGK
A0A9R1WPN2	-----QVFKNHGASAGASMSHSHSQILALPIPTIASNRLNTMKEHHNQTGK
A0A2I4GSU5	-----VFKNHGASAGASMSHSHSQIIALPVVPANVSARLDSMNGFFHETGK

A0A2K3PBG0	-ALSAPNNVGTLVGVFKNHGEEKAGASMSHSHSQILALPIPPSVSARLGNMKDYFYQTGK
A0A2P5EMX1	-----VFKNHGASAGASMSHSHSQMLALPIVPPNVSARIEGMKEYFGQTEK
A0A2P5B5X8	-----VFKNHGASAGASMSHSHSQMLALPIVPPNVSARIESMKEYFGQTEK
A0A2P6RHM5	-----VFKNHGASAGASMSHSHSQMMALPIVPPAVAAARLDSMKDYFNRTGK
A0A2R6R525	-----VFKNHGASAGASMSHSHSQIMALPVVPPAVSARLDSMKEYFDQTGK
A0A2Z6PED2	-----VFKNHGEEKAGGSMHSHSQILALPIPPSVSARLGNMKDYFYQTGK
A0A103XDX8	-----QVFKNHGASAGASMSHSHSQILALPVVPPTASTRLDSMKEYHNTQGR
A0A2U1PK25	-----QVFKNHGASAGASLSHSHSQILALPIPTTVSTRLDSMKEYHNTQGR
A0A328E5T3	-----QVFKNHGASAGASMSHSHSQIILPIVPPTVSARLSSMEEYFQQTGS
A0A2Z7DDR5	-----QVFKNHGASAGASMSHSHSQIMALPVIPSTVSARLNSMKEYFVQTGN
A0A314Z4V0	-----VFKNHGASAGASMSHSHSQIMALPVVPPAVATRLGSMKEYFDQTGK
A0A392NUD2	-----
A0A445GIZ5	-----VFKNHGASAGASMSHSHSQMMALPIPPSVSARLTSMDHFDQTGK
A0A498IJM2	-----VFKNHGASAGASMSHSHSQIMALPIVPTAVAAARLDSMKEYFDQTGN
A0A0S3TAB0	-----VFKNHGASAGASMSHSHSQMMALPIPPSVSARLASMDHFDQTGK
A0A068V0Z0	-----QVFKNHGASAGASLSHSHSQIILPVVPTAASARIDCMKQHFEQTGK
A0A8X8WFE4	-----QVFKNHGATAGASMSHSHSQILALPVIPPTASARIQSMKEHFEQTGE
A0A4V3WL65	-----VFKNHGASAGASMTTHSHSQMMGLPFVPPAVSARLDSMKENFDQTGK
A0A4U5PVU0	-----VFKNHGVSAAGASMSHSHSQILALPVIPSSVSARLEGMKEYFEKTGK
A0A540L1S0	-----VFKNHGASAGASMSHSHSQIMALPIVPTAVAAARLDSMKEYFDQTGN
A0A5A7U3W6	-----QVFKNHGASAGASMTTHSHSQMVGLPVIPPSVTTRLDSMKQYFNETGK
A0A5C7IC11	CGYKTVAHYVARWAVFKNHGASAGASMSHSHSQILALPVIPPTVSTRLCSTKEYFDQTGK
A0A5D2XCB5	-----VFKNHGASAGASMSHSHSQMLSLPIVPASVSTRLNSMKEHFNQTGK
A0A5A7PC75	-----QVFKNHGASAGASMSHSHSQIMGLPVIPPSASARIQSMREHFDETGK
A0A5B6VU70	-----VFKNHGASAGASMSHSHSQMLSLPIVPPSVSTRLNSMKEHFNQTGK
A0A5J4ZKC7	-----VFKNYGASAGASMSHSHSQIMALPVIPPTVSTRINSMKEYFDQTGK
A0A5N6P247	-----QVFKNHGASAGASMSHSHSQILALPIPSLASNRLSSMEEYHNTQGR
A0A5N5J241	-----VFKNHGASAGASMSHSHSQLLALPIPSAVSARFEGMNEYFKKTGK
A0A5N6RJP1	-----VFKNYGASAGASMSHSHSQILALPVVPPTVSTRLDSAKEFFHETGK
A0A5E4FF82	-----VFKNHGASAGASMSHSHSQIMALPVVPSAVATRLGSMKEYFDQTGK
A0A6A4LKW8	-----VFKNHGASAGASMSHSHSQIILPIVPPTVSARLHSMKEHFDQTGR

A0A6A4QFB2	-----VFKNHGASAGASMSHSHSQILAVPIIPTNVSTRLESMKCYFDQKGK
A0A6A6M4N8	-----VFKNHGASAGASLSHSHSQIIALPIVPPAVSARLDGTKEYFDKTGK
A0A6D2L947	-----VFKNQGASAGASMSHSHSQIMALPVVPPTVSSRLDGTKDYFDETGK
A0A565CNH9	-----VFKNHGASAGASMSHSHSQIMALPVVPPTVSSRLDGTKDYFDETGK
A0A6J1DP04	-----VFKNHGASAGASMTSHSHSQMVALPVIPPSVSTRIDSMKEYFNKTAK
A0A6I9TLA4	-----VFKNHGASAGASMSHSHSQIVALPIVPPTASARIQSMKEDFAQTGK
A0A6J1IZ13	-----VFKNHGASAGASMTSHSHSQMMGLPVIPPSVSTRLDSMKQYFNQTGK
A0A6J0KBW1	-----VFKNHGASAGASMSHSHSQIMALPVVPPTVSSRLDGTKDYFEETGK
A0A6J1A689	-----VFKNHGASAGASLSHSHSQILSLPVPPSVSARVGSMSKEYFNQTGK
A0A6J5XVC3	-----VFKNHGASAGASMSHSHSQIMALPVVPPAVATRLGSMKEYFEQTGK
A0A6P5WUV9	-----VFKNHGASAGASLSHSHSQMLSLPIVPPSVSARLDSMSKEYFNQTGK
A0A6P5SY58	-----VFKNHGASAGASMSHSHSQIMALPVVPPAVATRLGSMKEFFDQTGK
A0A6P6SUB1	-----QVFKNHGASAGASLSHSHSQIIALPVVPTAVSARIDCMKQYFEQTGK
A0A6P3Z169	-----VFKNHGASAGASMSHSHSQILALPVAPPVSTRLGSMKEYFDKTGK
A0A9C6T7J3	-----LVFKNHGASAGASMTSHSHSQMIALPVIPPNVSARLGNMKDYFEKTGK
A0A6A1W7E7	-----VFKNHGASAGASMSHSHSQILALPVIPPDASVRLDSMKEFFHETGK
A0A7J6HQZ5	-----VFKNHGASAGASMSHSHSQMLALPIVPPAVSTRVESMSKEYFNQTGK
A0A7J9H1V9	-----VFKNHGASAGASMSHSHSQMLSLPIVPPSVSTRLNSMKEHFNQTGK
A0A7J8T974	-----VFKNHGASAGASMSHSHSQMLSLPIVPPSVSTRLNSMKEHFIQTGK
A0A7J7DS99	-----VFKNHGASAGASLSHSHSQILALPVVPPNVSTRLDCMKEYFARVGR
A0A7J7GKE2	-----VFKNHGASAGASMTSHSHSQMMGLPFVPPAVSARLDSMKENFDQTGK
A0A7J8M9P9	-----VFKNHGASAGASMSHSHSQMLSLPIVPPSVSTRLNSMKEHFNQTGK
A0A7J8UUY6	-----VFKNHGASAGASMSHSHSQMLSLPIVPPSVSTRLNSMKEHFIQTGK
A0A7J8ZYH9	-----VFKNHGASAGASMSHSHSQMLSLPIVPPSVSTRLNSMKEHFNQTGK
A0A7J9JF36	-----VFKNHGASAGASMSHSHSQMLSLPIVPPSVSTRLNSMKEHFNQTGK
A0A7J9LPG1	-----VFKNHGASAGASMSHSHSQMLSLPIVPPSVSTRLNSMKEHFNQTGK
A0A7J8XJ49	-----VFKNHGASAGASMSHSHSQMLSLPIVPPSVSTRLNSMKEHFNQTGK
A0A7N2M4Q6	-----VFKNHGASAGASLSHSHSQIIGLPVPPNVSARVDSMKQYFNETGK
A0A7N0VFH9	-----QVFKNHGASAGASMSHSHSQIMALPVVPPLVVSRAVSMKEFQAKFGA
A0A8S0UB89	-----TCEVFKNHGSSAGASMSHSHSQIMALPVVPSAVSSRIESMKEFFEQTGK
A0A484KNA0	-----QVFKNHGASAGASMSHSHSQIIALPIVPPTVSARLSSMEEYFQQTGS

A0A803MCA9	-----QVFKNHGASAGASMSHSHSQIIALPIVPPSVSTRLAAMKEHFEQTGN
A0A834H459	-----VFKNHGASAGASMSHSHSQIMALPIVPPTTSARLHSMKEHFDQTGR
A0A834VYP3	-----VFKNHGASAGASMSHSHSQILALPIIPPNVSARLGSMKDYFEQKGK
A0A830D8Y2	-----QVFKNHGASAGASMSHSHSQIMGLPIIPPLASARHQSMKEYFDQTGK
A0A835IYB6	-----VFKNHGASAGASMSHSHSQILALPIIPSAVSDRFEGMNEYFKKTGK
A0A8B8LU99	-----VFKNHGASAGASMSHSHSQMMALPIIPPNVSARLGSVKDYFDQTGK
A0A8B8N3B5	-----QVFKNHGAPAGASLSHSHSQIIALPIVPSNVSAQIECLKEHFDRTGK
A0A8J5YDI6	-----VFKNHGASAGASMSHSHSQMLSLPIVPASVTTRLNSMKEHFHQGTGK
A0A8J4QZ02	-----VFKNHGASAGASLSHSHSQIIGLPVPPPNVSARVDSMKQFFNETGK
A0A8K0GXL3	-----VFKNHGASAGASLSHSHSQILALPVVPPAVSARLDGTKEYFDKTGK
A0A8T2WL49	-----VFKNHGASAGASMSHSHSQILALPIIPSSVSARFEGMNEYFEKTGK
A0A8T1PAW8	-----VFKNHGASAGASMSHSHSQILALPVVPSDVSARLDSMNEFFRETGK
A0A978UDM2	-----VFKNHGASAGASMSHSHSQILALPVAPPVSTRLGSMKEYFDKTGK
A0A9J5X336	-----QVFKNHGASAGASMSHSHSQMIALPIVPPTVSARLDSMMEYYKQTGK
A0A9D3VIS5	-----VFKNHGASAGASMSHSHSQMLSLPIVPPSVSTQLNSMKEHFNQTGK
A0A8X7S5T2	-----VFKNHGASAGASMSHSHSQIMALPVVPPTVSSRLDGT KDYFEETGK
A0A8X7ZIJ2	-----VFKNHGASAGASMSHSHSQILALVIPSSVSARLEGMKEYFEKTGK
A0A9D5BHE4	-----VFKNHGAAAGASMT HSHSQMIAMPVIPPTVSARLGSMKDFYDQTGK
A0A9Q0J1K7	-----VFKNHGASAGASMSHSHSQIMALPIIPSSVSARLDGMKEHFDNTGK
A0A9Q0T1I6	-----VFKNHGASAGASMSHSHSQLLALPIIPSAVSARFEGMNEYFKKTGK
A0A9Q0V9I9	-----VFKNHGASAGASMSHSHSQLLALPIIPSAVSARFEGMNEYFKKTGK
A0A9Q0W9M7	-----VFKNHGASAGASMSHSHSQLLALPIIPSAVSARFEGMNEYFKKTGK
A0A9P1EFQ7	-----QVFKNHGASAGASMSHSHSQIIALPIIPPTVSARLGSMKEYFQQRGT
A0A9Q1RSR0	-----QVFKNHGASAGASMSHSHSQIIALPIVPPTVSARLDSMMEYYKQTGK
A0A9Q1L1H9	-----QVFKNHGASAGASMSHSHSQIIALPIIPPSISTR LTAMKEHFDQTGK
A0A9R0K9C0	-----QVFKNHGASAGASMSHSHSQIIALPIVPPSISTR LAAMKDHFEQTGK
A0A9W7HNU1	-----VFKNHGASAGASMSHSHSQIIALPIVPPNV SARLDGMKEYFNQTGK
A0AA38ZUR1	-----VFKNHGASAGASMSHSHSQIIALPIVPPTVSSRLDCMKGYFEQTGK
A0AA39SLE4	-----VFKNHGASAGASMSHSHSQILALPVIPPTVSTRLCSTKEYFDQTGK
A0AA38WNJ4	-----QVFKNHGASAGASMSHSHSQILALPVVPTTASARLDSMKEYHNTGGR
A0AA35Y5R7	-----QVFKNHGASAGASMSHSHSQILALPIPTIASNRLNTMKEHHNQTGK

(C) d3sjld_{A}_7_18_2.914e-08 mean AL2CO score = -1.01(±0.25)

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d3sjld_ -----getqgqaaaraaad
A1BB97    IGLGLGCSALA--LAASAQDAPEA-----ETQAQETQGQAAARAAAAD
A9HIB8    AAPLSVAALLGAAILQ-----PLVPPSGARAA
B2JN92    IAATL-----SFAAACIGSA
A0A9J9HDB1 -LR-----FA-----ALCLATAAPA
Q50420    AGQLAATALLA-ATCSAF-----AADAPTTVPSSLGAI
A1K7S2    RTCLAA--VL-IALAG-----GSA
C6WX30    AGKLAIAALLV-AAQPAF-----AED-QKAVPKQLAAV
C6XQB5    SCALGA----LIFLA-----SPVGFAQE---
H5WRS2    ---A----AALACALA-----STAVAAPQAPKAQ
C0N7A3    VGGIAAAALMT-AAYPAL-----AD-----
B8KXR2    -QR-----LAV-----LMALLMASLA
A0Z932    -SL-----FVALL-----TAIGMLVSAEEI
F1Z7Y8    SAASAMGLALAATIGA-----ICLPAAPALAG
I0JZ89    -----
U2E0W8    AGG-VA--A-----MAALAWSASA
K6Z5F1    -----
K0CBH2    AGLLA--L-----GSVL-IPPSL
K6Z5K0    AASLLL--LG---CTATPVAT-----DGV-KSLAQLETVDSNTVNIKPDPS
K2IVH7    FGLLLF-----TSLV-----SRAALAQDEPS
H6RJW5    CGLLL-----AVT-----AGCARPVDDPG
A0A0H3KP02 LAATL-----ALAATSAGGA
G4RF01    L--ALA----VGTAL-----TLPFAQENAD
Q49124    LGAAALAALIA--AG-----SAAAAESHGVATAKAAAAD
Q2G7P8    SVS----G----AAL-----AATPAAKAPY
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F6IE79	GLL----S----LTP-----SPNASAQDPGKF
K9DEQ3	FATAAMGFVLCAA-----ITAQAAPADT
M4RZL2	AGIAWAG---IASAA-----DTPPPAPASPP
M7PU72	AGKIAIATLLA-ASQPVL-----AGGAVPSQLGSE
N1MK08	FAAAAWGWALLVS-----PAQAAPA-DT
S5XJB0	LCAGLTCSVLA--LGTAYAETAAA-----PQTEGQKQAAEGAAK
S6AG49	AQTTLA--L-----GVALAGLGNA
T0K0G4	--MGCALLVTG-----TTLWA
U1ZL56	-----MLGL-----MVLAGGAQ
F1YVG1	S--LLRALL--GSAAI-----LTMGGTAAKAA
V5SBY2	IGGVATLGLLA--GGAAYAQEGPR-----GSELPKQLGQE
W0AE12	MLSASVGALLAAG-----MAHAAPATDP
W0PE43	ALITAFTSLAL-A--GA-----ATAAEPKIPTQLGKE
A4A7G1	LA AVL-----CVT-----QGLAAQPYG--
A0A023D170	N--FV--VPLLTA VLP-----CLAGLATPARA
W8X1W1	-IPTGA--GLLSAALL-----GSAVGVQA
A0A086P9C6	-GC-----IL-----SLCFATVIPA
A0A059DMU0	ALSLSA-----SWAN-----AQEAAIPD--
A0A024HGH9	ARTMLA--L-----GVSLAAAGGA
A0A069PTC1	MAAVL-----SGVLACQIQV
A0A074TIK4	PVLAAL----LLCAA-----APGAFA--Q--
A0A8A8D8M4	LAATL-----ACAAAWAGSA
A0A085FEK6	AASALC----CATML-----TFPLMAQEA--
A0A086Y511	ATICAA----CAVLA-----GQAAIAQEA--
A0A0B5DX78	AAAFLA----LSAIC-----G-QAFAQDE--
A0A0C4YG08	LSVLAL--PA-AAANA-----SDAAS
A0A0D6JKV1	LGGVASLSLFV--SGAAYAQQSPS-----GAEVPKHLDEK
A0A0J1HFZ5	LGALQL-AA---CSSNQEVS-----AGSDESSATQQATHQVTQPVT PNSS
A0A0N0JJK2	LATATLAVALAGGLPGALA-----PSAMAAPVAAP
A0A0N1C876	SAS----G----TAL-----AATPAAETRF
A0A0P6WHV1	REVFA-----TLL-----LASAAVLPTVAT

A0A0Q7E0E9	LSVCLA---CALAA-----AAPTLAQEA--
A0A0Q7D1N1	ML-----SAPCAAQTV
A0A0Q6EGD5	VLLALA---FGTAA-----FAPAHAAQEE--
A0A0Q2QX28	LGALFI---SGLIF-----LPTTNAATQ--
A0A0Q8R3S7	-TA-----LA-----ALCLAAAAPA
A0A0Q6BI19	LLFAIA---FSSTA-----LGSVQAADE--
A0A0J7XRT6	FAAALCGSLLASA-----ALAQAAPADT
A0A0W7Z1A5	-----MAFFA-----STASF-ASE--
A2WG71	LTATL-----ALAATSAGGA
A0A158IF31	MAAVM-----SGVVAWHLA-
A0A0U5EZH8	G--TAALVLGMMALGA-----FSVTSVKAWAD
A0A102D9N9	-AAL---HGAAMALA-----HPAAADTPTR
A0A124JU51	ALG---V---AAL-----LSAPAAAAENRF
A0A0N9UJL1	A-----ML-----LMSASAAGAQN
A0A125NTV3	LGGVASLVLI-AAGVANAQQGPS-----GAEVPKQLGAQ
A0A102DDU6	ALA---V---ASA-----QPA-L-AQAASV
A0A0S2KEG8	LAVMAS-----LAL-----SGAANAQWD--
A0A133XFV5	KLIALL--VL-AGLASG-----MAIGEPRR
A0A149PR24	WALLM-----LSSVAMATQV
A0A150L8H0	L-----N-----
A0A196MKB1	FAATLSAMLLGSA-----AVAGAAPADT
A0A1B3MRN9	FAAAALGWTLFAT-----AAWAAPAAET
A0A1E3GU71	AASMAMTAMFV-GGTQAV-----IAGGVPPQLGSE
A0A1E8CNJ1	-----
A0A1E7Z8Z0	PAL-----LMACV-GLPA
A0A1D9MCS4	LA-----LPLGL-----ALLA---PA
A0A1D9HBT7	--ATLA--AL-AAVCG-----VPAAC
A0A1S2CE83	ACCLV---V-----ASGL-IAASA
A0A1I3WIR9	TAAFVA----LVALT-----G-PAFAQDA--
A0A1M4MXS9	TAMALA---LMALA-----A-PAVAQEA--
A0A1Q8IW76	WALLM-----AGSAAISQV

A0A1N7RY02	WALLM-----VSGAAISAHV
A0A1U9KH93	A--FLRSL--GGVV-----LIAATASARAD
A0A1V0GYS5	MASGL----A--LGAAAAQD-----AQTDGQRAAAEAARL
A0A1Y6BCQ1	MGRVA-----TLLL-----VAAVAAVGGAQAA
A0A1X7J6I5	LATGA----A--F---AQ-----DSSPDETMTEGQRAAAEAARQ
A0A252B2Q1	S--WLGLLL--GSAAF-----FSA--ATVQAA
A0A246K5C7	-----MASASVSAAADY
A0A239KUF4	-RHL---LCGLSLCA-----G---AASA
A0A1G8ANR3	VCLLVC----SAFSQ-----APVALAETQ--
A0A1H7BPS8	IAATL-----SFAAACIGSA
A0A1H8IVS7	IGSGL----A--LGPSWAQTAEESQPAEAEAGEAAQTPAEEMTEGQRAAAEAAEK
A0A1H9RWD6	FATALSALLGSA-----AIAHADLADT
A0A1I0H738	LLTSFS---ALVAS-----GTFVAA--Q--
A0A1I2MJ34	VAALALSGPALYGI-----AAFAPAANAKD
A0A1I7LZ48	RRGV---AAGAAMCA-----LGAAGQAM
A0A1I3FQ37	L-----V-----ALGVSAASVA
A0A1I3TD09	TAAFVA----LAALT-----G-PAFAQDA--
A0A257LQY0	-RWAAW--CL-AATL-----GCGHMGAA
A0A255YLN0	-RPL-----TL-----VAALLLAGSA
A0A255Z6A5	-SLI-----AL-----CAAIALVAPA
A0A291GDG1	TAAFVV----LAALT-----G-PAFAQDA--
A0A2A4I8K1	---IAATALLA-----GATAAPAQS
A0A2A4B323	IAALLSA---AGV-----QA--QAQTPPR
A0A2A8HV00	TAALWLA---LGI-----AAVPGTATARE
A0A2M6UYR1	L-GAV----WAAAGLLC-----HAAPAARVA
A0A2N3LZ45	LTHVAF----GAFLV-----AAPA----AL
A0A2N5EMF6	LTLFTT----LGILS-----FTTSQAAEP--
A0A2N5Y225	LGA-----IVAVG-----H--AFAEDREV
A0A2I8DPH5	-TRAAR--AGGWALCAA-----LAAAAGAS
A0A2U3HZK8	MGALF-----YGLLACQLHA
A0A2S5KIC4	SASLLA--L-----VL-AGSQA

A0A2S8RZ29	LILSLS----VLAAS-----GAQVLA--Q--
A0A1H0H1E2	ANTTLA--L-----GVALASVPSA
A0A1H2EX98	ARTTLA--L-----GMALAG--AA
A0A1H2F3S3	-KRL---LRGFTLCI-----ALLAWPVTGV
A0A1H1YFW2	ARTALA--F-----TVALAS--VA
A0A2T5FZ30	LAAVISP---VTL-----QA--ES----
A0A323UUH5	KNCVAA--LL-IALGG-----ATA
A0A2Z2NRF1	PRRLLA--LAIFGICAAGSANA-----QTTKTDDEL
A0A315ABB6	M-GVL-----SALAGSLI-----FAASAHATAQSV
A0A2Z4UQF9	-AAL---LAGFLFT-----GVSTLSTSA
A0A369T7V0	-ASAMA--AALAGVLF-----AGTAAQVPE
A0A3D8JVF2	WALAM-----ACGATIAAHA
A0A398BT79	LLLSLS----ILAVT-----GSQVLA--Q--
A0A1W7M7Y5	-SLL---ALGASQAM-----AAPPKPAPPK
A0A3S4CAP5	CSALLA----AQLAA-----PVSVLAQDD--
A0A3N6NJG1	-RLIS---G-VAVLATVL-----LSAQAPVA
A0A3N7CFA9	L-M-----SL-----SVAAATAATPAAL
A0A3S3TT68	RLAPL-----AL-----AVASGTARAAP
A0A437J7B1	PVRALALALTLAG-----SSLSAAPADT
A0A410GFE7	-LP----GL--AACAL-----MALVSPAG
A0A418ZRX7	-----MTEGQRAAAEAAAQ
A0A423PIM0	---M-----LLGFT-----GAAALAADK--
A0A401J738	FAAAAWGWALFAG-----PTQAAPA-DT
A0A4Q7LIS5	AIGLLS-LLGVTGLATS-----FGALAQAGKARAV
A0A4R0XD57	IAATL-----SFAAACIGSA
A0A4R6RC52	RVAVLA----AAMAV-----AVPALAEDA--
A0A4V3BNW1	SFRVKS--LL-FGLCA-----GFAMQ
A0A4R2KBX4	LAAAMA----VPLTL-----AGG----PA
A0A4V2SDJ7	PAAV---L-----A-GALVAGSA
A0A4Y8UXA1	-----MS-----SGAANAQWD--
A0A4P7XM83	ITLGAV----LGVLA-----VGGAQADDD--

A0A4Y8UN28	SAAALL--LGSYG-CAPEAEQA-----DTS-----HADHVAPAVEIVADPS
A0A562NTZ2	LGLGMTCSSLA--LGTATAQEATAD-----DAALTSAGVTRNDGESQGAAGARTAAAD
A0A558NPA9	--I-----ATLL-----LSAVMPAAQ--
A0A4Y6V628	-----SITLFVALAV-----FST--PALAEP
A0A4Y3TVW3	G--LSSLLA--GGIA-----LLALPAFAGAA
A0A523Q339	R-RSL-----SGLC--VL-----LLSTAALAAPSTQ
A0A501PGL6	IGA----L-----CAACVWPAVG
A0A501WV29	FLVALS----VLAAA-----GTPALA----
A0A511X7F5	V--FATCLG----AA-----LLSSTTHARAE
A0A511XFQ7	A--TAVCATGLLA-----GSVSERALAS
A0A1I4E4L0	ALLGLS----FISLL-----ASAAFAQDE--
A0A5D0X323	-ASALLA---LALPG-----AA--IAAQGRL
A0A6C2CLF7	-----MS-----AGA
A0A5E4RPP3	MALTLW-----IMT-----AQAQAQTKTL
A0A6I5YKB7	FAAAFSALLLGSA-----TLAHADLADT
A0A5S9QH23	--LST-----LLSLL-----CLIQHVQLH--
A0A6N6VMG0	-MRV---WSSIAIA-----ALMLVMAPAT
A0A6C0U555	MAA-----LCGLG-----LGFAAVAAAGDQ
A0A6L6JDP0	TVLPIF----LASLA-----L-PAVAQET--
A0A7C9TIH4	RRLARL--PQALGLL-----LAAGLGLA
A0A6J5FID0	AAAVL-----AFA---CAA
A0A6S6ZV48	-SRALR--AGRWALCAA-----LASATGLA
A0A6N0WYA5	ALG----L----AVL-----PAH-AATPAESY
A0A7L5RWA2	LTLSVA----LGMLA-----TVPAFAEEP--
A0A7Y9QWY9	LGAVLL-A----CSS-----ATWAANKASAKPV
A0A7X0JRG8	ISW-----PLMLA-ALVV
A0A7Y7IV73	AAALAVSGLLGA-----AAPHDAARAA
A0A7W4KEC0	A--MA--AMLA-----APAG--AALAA
A0A7W6CEB8	RAAAV----LIGT-----VLASGAQA---
A0A840SJ55	IALGM----A--FGPASAEQQTPEQPAQEQQ-----AQGEQTTQTEGEREAAEAAQA
A0A7W6DDQ9	VAALAV-----GV-----AAIGFPAQATD

A0A7W4J5F5	A--FS--AMLM-----VSAA--TAHAD
A0A7W5ZZB3	-GLL---V--SSADA-----RPAKKAAPPK
A0A7W7B107	T-----LL-----FAASDAQAQQAF
A0A848G7N7	-----
A0A853FCE1	-----M--PASAQ-----EPKTPQVQ
A0A7U7EL64	MQAVMA--L-----GVSLA--GHA
A0A850PC06	---ARCAVLPALTCV-----SVAHAGPASAS
A0A7R7HAE8	IFLGLS---FATLM-----TAGPVLAQE--
A0A967B6I1	A--MLCSLA--SGLA-----LLAGATSGRAE
A0A936Z330	-GLSL-----LIAAGAA
A0A931HFP9	---MASTLLLGSV-----AALTVPQAQD
A0A917GPW5	LALVTS-----LVA-----CSAVNAQWD--
A0A919AKV3	VAT---A-----CFFCT-GALA
A0A974Y937	-----
A0A939DFR0	-----MS-----L-APTAAGAEDR
A0A916IQB5	RRLIPL--LL-AATLG-----AGAAV
A0A8B6X9Q5	ARLVRF--LL-AAGLA-----GAALS
A0A940SI03	IAATL-----SLIAACIGSA
A0A9N8RZ47	LAFAL-----AGTAMMSLHA
A0A977SHT6	AASTLC---CATML-----TFPVMAQEA--
A0A9J6RMI2	-----MA-----ASSYAAKAE
A0A9Q3YNS7	CTGLL--L-----AAAA-VSATA
A0A9X1DC07	AAA---RVLSSL-----TILALMTASSA
A0A9X3U0E8	-----MI-----SLCGTAAGAADF
A0A9W6JCY9	LGSAAFALLA--AG-----PAAAAETHGQAGAKAAAAH
A0A9X3H996	SGT---I---CGS-----ALAAPNTGPY
A0AA41Z7Q8	ALG---V---AAL-----PAL-AGAAPGTG

d3sjld_	I-----aaqqdd--ep-----rile--apa-pdarrvyvndpah-faavtq-qfvid
A1BB97	L-----AAGQDD--EP-----RILE--APA-PDARRVYVNDPAH-FAAVTQ-QFVID

A9HIB8	E-----PILQTE--ES-----DIVT--LPP-GGPHRVLVQDGVYRHSKDGR-VYVVD
B2JN92	H-----AIEKPE--EL-----TVQK--LPA-WHSHEVFVVDISMPSMTDAR-IYLYD
A0A9J9HDB1	L-----AQLQPE--EL-----TKES--LAETMQPHWVWLNDISFDRMLDGR-AYLVD
Q50420	G-----TTPTLD--NI-----TMEP--GLP-SDAKRVYVLDPGH-FHVTIT-VYTID
A1K7S2	Q-----AELQVE--IP-----KTVD---LPPNPYRIYLSDISGHIVDGR-LHVID
C6WX30	G-----SL-KID--NL-----SVAK--APP-VDKRFYVIDPGH-FNMTSQ-TYVMG
C6XQB5	-----PIAPE--EL-----TVEK---EIPDGENVYVLSSSWA--GASS-VLVLS
H5WRS2	P-----PELPAE--TL-----QRGG--TLVGATTERIYVGDAIAHIADGR-LRVFD
C0N7A3	-----IAIE--EM-----TLEV--APA-SDSKRVYVTDPGH-FQMTSQ-VFTID
B8KXR2	H-----AGVKPE--TI-----SVAK--LG-EPTPTWVFIKA-----YMGG-TNLFD
A0Z932	R-----PPLAVE-PTG-----IJET--LPGRYPADWFLVHDAAFFHMSDGK-VVVD
F1Z7Y8	T-----ASVEPE--DS-----DVAP--LPM-PKPSWFIQGRF----VQAG-TGVYD
I0JZ89	-----MDQLF-TVANRK-AFLID
U2E0W8	W-----SQLPPD-EIG-----T-VT--L-DKPGPHRAYIIDTQFDNATTGK-VVVVD
K6Z5F1	-----
K0CBH2	Y-----AALPTE-TVG-----Q-AE--LPFPPSPHRSYLIDFEFDNMVATR-VVVVD
K6Z5K0	L-----PPLPIE-KTG-----KIEV--LPAKYPESWMFVDEVSFQSQFGGK-MILD
K2IVH7	-H-----PPFEFE--TP-----TALA---AIAPGPNVFNVSQGWD--KASA-IKVG
H6RJW5	APLDGLRACPAAGS--VIGVFVGAGPTA---DAGDGPTVQGVDTWTLSVGGD-VRRL-
A0A0H3KP02	H-----AAEKPE--EL-----VVQK--MPP-WHPHEIYIVDISMPSMTDGR-IYVYD
G4RF01	AP-----EPIAPE--TL-----TVKE---TIDPGPNIFSNAQSWD--GASQ-IQVWS
Q49124	L-----AAGKAD--DP-----VVLK--AAP-INARRVFVYDPKH-FAAISQ-FYMID
Q2G7P8	P-----KPLPEE-PIP-----ASAK--LPSQWPASVVLHDFHFSSIVDGR-VMVVD
F6IE79	A-----QPLPVE-EVP-----SVQS--LPPLYPKDWVLIQDFHFNALIDGR-LAIVD
K9DEQ3	T-----AALEPE--TS-----DVVT--MEP-PKPNWFFVDGGW----DMPG-TSIFD
M4RZL2	P-----PILEAE--TS-----GTLT--LGP-AGAHRLYIAA-----GEG-FTIID
M7PU72	A-----TVQLMD--EP-----TILT--APP-SDAKRVYVLDPGA-FHMTSQ-IFTID
N1MK08	G-----TVLEME--TS-----DVLT--ITP-PKPTWFFVDGGW----DMPG-TSIFD
S5XJB0	L-----AKGEDD--EP-----HIGT--MPK-ADAHRVYVNDPAH-FAAITQ-QFIID
S6AG49	A-----AELPADAGIG-----Q-TT--LPFPPEPHRAYIVDVEFNMFVAGR-VTVVD
T0K0G4	Q-----SAPEPE--TS-----DVVK--MEP-PKPDWFFVDGGW----NMPG-TSIFD

U1ZL56	A-----QDKPRE--VL-----TGGH--SVSAPQENRIYVMDSVFMHLTESR-VHVYD
F1YVG1	E-----PVLQTE--QS-----DVIT--LPA-YSPTILVEDAVYTHNKDGR-VYVVD
V5SBY2	A-----TSDLED--NP-----VILS--APE-PDARRIYVTDPAH-FAVTTQ-HFTVD
W0AE12	N-----PVGESE--TS-----DVMP--LAA-PSPAWFYVDGGW----DMDG-TSIFD
W0PE43	A-----VSTLQE--EP-----KILS--APP-SNAKRVYVTDPGH-FNVTSTQ-VFSID
A4A7G1	-----SIVGD--AL-----KLG-----TPNDHWFSARGKQIAYLID
A0A023D170	A-----DTLEPE--QE-----YTEK--LPPTMGEHWALV-T-----TNGS-FTLYD
W8X1W1	A-----PPLPVE--QL-----TGGH--SVKVDPAERIYVMDAVFFHLTDSR-LNMYD
A0A086P9C6	S-----AQLAPE--EL-----TQET--LADTMQPHWVWLNDVSFDRMLDGR-AYLID
A0A059DMU0	-----PIEPE--EL-----ITET---EIAPGPNVFVSPSWI--GAGA-ISILS
A0A024HGH9	Y-----ADLPAE-TIG-----Q-ET--LPFPSPHRYIIDVEFESFVIGR-VTVVD
A0A069PTC1	H-----AAEKPE--EL-----TVAK--VPP-YSPHQVFVPDISFSSMTDAR-VHVFD
A0A074TIK4	-D-----TSIKPE--KL-----TIRP---HISDGPLFLVLDFGMN--GSSP-IYVYD
A0A8A8D8M4	N-----ATEKPE--EL-----VVQK--MPP-WHPHEVYIVDISMPSMTDGR-IYVYD
A0A085FEK6	-----EFVPE--TF-----SVKE---AIEPGPNIFVGKQEWG--GASS-IEVYS
A0A086Y511	-----IAPE--KL-----TVEE---RIAPGANVLTLDQSW--GQSR-INVLS
A0A0B5DX78	-T-----APIEPE--TL-----TVKE---RIDEGPNLFVLDQKWA--GPSS-VNVLG
A0A0C4YG08	T-----AELQPE--TL-----SVQP---LAPADDGRLYISDVAFKHMVDGR-LHVVD
A0A0D6JKV1	A-----TSQLED--DP-----QILS--AST-PDSRRIYITDPAH-FAVATQ-TFTID
A0A0J1HFZ5	L-----PSLPIE--TVG-----KVER--LPKVPESWIYVDETSFSSMFGGK-MILMD
A0A0N0JJK2	I-----ASVEPE--QS-----DVAQ--LTP-PKTSWFFINGGF----TSNS-SVIYD
A0A0N1C876	P-----KPLAEE-PIP-----IIET--LPAQWPASWVMVHDLHFASILDGR-VMIID
A0A0P6WHV1	A-----EDLRPE--KV-----TVAR---LDAATPRIYAVDIAINHIVDGR-AYVLN
A0A0Q7E0E9	-----EFKPE--SV-----GVKA---AIDPGPNVFVNKQEWG--GAGS-INVYS
A0A0Q7D1N1	S-----QPLPEE-AIP-----SVSE--LPAAYPPSWILVHDLHGASIVDGR-LVIAD
A0A0Q6EGD5	-----FEPE--QL-----SVEA---KVRPGPNIFVLDQSWK--GSSR-LNVLS
A0A0Q2QX28	-----FKPE--HV-----SVEK---EIKPGPNVFVIDQSWA--GSST-ITVLG
A0A0Q8R3S7	W-----AQLQPE--EL-----KLES--LAETMQPHWVWLNDISFDRMLDGR-AYLVD
A0A0Q6BI19	-----FEPE--QL-----TVEA---KVRPGPNIFVLDQSWR--GSSR-LNVLS
A0A0J7XRT6	K-----ASVEPE--ES-----DTLT--IDP-PKPTWFFVDGGW----DMPG-TSIFD
A0A0W7Z1A5	-Q-----KPFEP--VL-----TVEQ---RIAPGPNILVLDQSWK--GATR-INVMN

A2WG71	H-----AAEKPE--EL-----VVQK--MPP-WHPHEVYVVDISMPSMTDGR-IYVYD
A0A158IF31	S-----AAEKPE--EL-----TVAK--VPP-YSPHQIYVPDISFASMTDAR-VHVFD
A0A0U5EZH8	E-----PVVQEE--ES-----DIIK--LSP-VTPHRILVQDTVGTTHAKDGR-VYVVD
A0A102D9N9	P-----PVLQPE--TL-----SVVE--LKDRMQPHWVWINDISFNHMSDGR-AYLVD
A0A124JU51	P-----QPLAEE--SLP-----SVAK--LPAEWPLSWVTIHDFHFNAIDGR-IAVVD
A0A0N9UJL1	P-----QPLPEE--PVP-----TVSE--LPERYPDSWVVFVHDLHFNSLPDGR-AAIVD
A0A125NTV3	A-----TSELED--TP-----VILS--APA-PDARRLYITDPAH-FATTTR-TFTVD
A0A102DDU6	S-----AALPVE--PIP-----TVTA--LPAQWPRSWVLINDFNFNFSIVDGR-VVVVD
A0A0S2KEG8	-----SVVGD--VG-----ILE-----EIDHHWVTANRGNTIYMVN
A0A133XFV5	P-----PPLPEE--EI-----KVER--LAPADGNRLYVVDPAFGHMDVGR-THVLD
A0A149PR24	L-----ATEKAE--DL-----TIAK--MPA-YSPHQLYVMDVNFSSMTDAR-TYVID
A0A150L8H0	-----INND--ELA--VTNFSD---KLAEGSKVVVD-----
A0A196MKB1	S-----VALEPE--ES-----DVLV--IDP-PKPTWFFVDGGW---DMPG-TSIFD
A0A1B3MRN9	D-----AVPEAE--TS-----DVMT--IPP-PKATWFFVDGGW---DMAG-TSIFD
A0A1E3GU71	A-----TLDLMD--TP-----VILD--APP-SDAKRVYVLDAGA-FHMTST-YYTID
A0A1E8CNJ1	-----ME-----GFDQHWVTVRRGDTVFLVD
A0A1E7Z8Z0	I-----AELEPE--PIP-----SVAT--LPSVYPDSWIFAHDVNFNAMISGK-VVIID
A0A1D9MCS4	LA-----EEFTPE--VV-----TTKE---TIDPGANVFVSQQQWI--GAGS-IAVFD
A0A1D9HBT7	A-----EDLPPE--TL-----TVAQ--LPPADADRLYISDVAFRHMVDGR-LHVVD
A0A1S2CE83	N-----ARLPNE--TVG-----S-TT--LPL-PDDHRSYMVD FEFNNMVSTR-VVVID
A0A1I3WIR9	-----IEPE--TL-----TVKE---TIDEGPNLFVLSQEWK--GPSS-INVLG
A0A1M4MXS9	-----IEPE--TL-----TVKE---TIDPGHNVFVMDQAWA--GPSS-VYVVG
A0A1Q8IW76	L-----AVEKAE--DL-----TIAK--MPP-FSPHHLYVVDVNFSSMTDAR-TYVLD
A0A1N7RY02	L-----AVEKAE--DL-----TIAK--MPA-YSPHQIYVLDVNVSSMTDAR-TYVLD
A0A1U9KH93	E-----PIPQTE--QS-----DIVT--LAP-WSPHTILVVDVAVYQH GKDGR-AYVVD
A0A1V0GYS5	L-----AEGQAD--EP-----VVLN--APK-PDARRVYVQDPAH-FAAITQ-QFAID
A0A1Y6BCQ1	A-----QELKPE--EV-----TVAR---IPADTPKVYLADIINHIVDGR-LYILD
A0A1X7J6I5	L-----AAGEAD--EP-----VILN--APK-PDARRVYVQDPAH-FAAVTQ-QFVID
A0A252B2Q1	E-----PVLQTE--QS-----DVVT--LKP-YSPHTILVEDAVYTHNKDGR-VDVVD
A0A246K5C7	P-----QPLAEE--PVP-----SVAE--LPADYPDSWVLVHDLHFNSLPDGR-AAVVD
A0A239KUF4	F-----AAFVPE--QA-----RVEV--LGEHRDQHWFWIWGSNAPNMVDGR-AYLFD

A0A1G8ANR3	-----FVPD--HV-----SVEK---EIKPGPNVFVMDQSW--GTSM-VTVFG
A0A1H7BPS8	H-----AIEKPE--EL-----TVQK--LPP-WHPHEVFVVDISMPSTMDAR-VYLYD
A0A1H8IVS7	L-----AAGEDD--EP-----VILD--APA-PDARRVYIQDPAH-FAAVTQ-QYVVD
A0A1H9RWD6	K-----ASVEPE--ES-----DVMT--IDP-PRPRWFYVDGGW---DMPG-TSIFD
A0A1I0H738	-E-----VDIEPE--TL-----TVEE---RISEGEHVFVMDFGIN--GSSP-IYVLN
A0A1I2MJ34	P-----NGLEPE--ES-----DTAT--IEA-PQAGWFYVRGGW---EVDG-TAIYD
A0A1I7LZ48	A-----ADFEPE--RL-----KDGV---ALPADMPRVYVGDFSIGHLNDGR-VHVLD
A0A1I3FQ37	A-----PPLKTE--TL-----SIEP--VPK-PGPHWLYLVDAANSHMIDAR-LVIYD
A0A1I3TD09	-----IEPE--TL-----TVKE---TIDEGPNLFVLDQAWK--GPSS-VNVLG
A0A257LQY0	H-----AELPVE--QL-----TMEK---LLPIDPYRIYLSIPTMGHLVDGR-AHVVD
A0A255YLN0	T-----AQLVPE--EL-----VVES--LPEKLPPHWVWVNDVAFFNMDSGR-AYLID
A0A255Z6A5	R-----AELQAE--QL-----SVET--LPEKLPAHWVWVNDVAFFNMADGR-AYLID
A0A291GDG1	-----IEPE--TL-----SVKE---TIDEGPNLFVLDQAWK--GPSS-INVLG
A0A2A4I8K1	A-----PELQPE--TS-----DTMR--ADP-PNPWFYVEGGW---DSPG-TSIFD
A0A2A4B323	P-----PELPVE--ES-----DVAA--LPV-LGPRVVMVNTNW---GSTG-ARLFD
A0A2A8HV00	A-----AALEVE--DS-----DVAT--IGE-VTPRWVFLTSQW---GRPG-TRIVD
A0A2M6UYR1	M-----EPLPAE--TL-----TVS---RIAPEATQRVYVADIAIGHISDGR-IRVFD
A0A2N3LZ45	AE-----DAFTPE--QV-----SVKE---AIDPGPNVFVYQEEWK--GAGS-IAVFA
A0A2N5EMF6	-----FKPE--RI-----SVEK---NISPGPNVFVLDQNWK--GAST-ITVLS
A0A2N5Y225	P-----PPLPVE-PIG-----IIET--LPSVYPASWFLVHDVAFFHMSDGK-VWVID
A0A2I8DPH5	W-----ADLPVE--EL-----KGGT--RLPPATPHRLYVMDAAFNHLVDSR-VNLYD
A0A2U3HZK8	S-----AAEKPE--EL-----TVAK--VPP-YSPHRVFVTDVSFASMTDAR-VHVFD
A0A2S5KIC4	H-----ADLPAD-TIG-----Q-TT--LPFPPEPHRTYVIDAEFENQVASR-VIVVD
A0A2S8RZ29	-E-----TDLQPE--TL-----AVEA---RISEGNHIYLMMDGIS--GPSS-ISVLN
A0A1H0H1E2	F-----ADLPADKGIG-----Q-TV--LAFPPSPHAYMVDVEFENFVTGR-VVVID
A0A1H2EX98	Q-----AELPAE-ELG-----Q-VT--LPFPPEPHRAYVVDVEFENMIATR-VTVID
A0A1H2F3S3	L-----AEIQPE--QA-----GVEV--LPAHDGQHWFWIWGNRAPSMIDGR-ALLFD
A0A1H1YFW2	H-----AELPVE-TEG-----Q-VT--LPFPPEPHRAYIVDVEFQNMATR-VVVVD
A0A2T5FZ30	-----VVPQIE--ES-----DVAT--LPP-LSPHMLLLTGDG---SIKG-TRIID
A0A323UUH5	H-----AELPVE--IV-----TVEQ--LAPPNPYRIYLSVDSIGHIVDGR-LHVLD
A0A2Z2NRF1	P-----PPLPIE-ETG-----VVLS--LPESYPESWIMVDEASFFNHYGK-VIILD

A0A315ABB6	P-----PELPAE--TL-----TVT---SLADAPSTRVYVADVAISHIVDGR-IRVFD
A0A2Z4UQF9	R-----AADLPE--DP-----MGEVVSFSRQNHDRLVWVTDNMMPYQAHGR-GYLID
A0A369T7V0	G-----AKMPVA-EEH-----NTV---TLGEPGDHRVYVLDPVFPHLIAGK-VYVVD
A0A3D8JVF2	G-----AVEQAE--DL-----TVAK--VPP-YNPHQIDVLDVNFPSMTDGR-IHVLS
A0A398BT79	-E-----KDIQPE--TL-----AVEA---QISEGNHIYLMDMGIS--GSSS-IFVLN
A0A1W7M7Y5	L-----APLKPE--EL-----TTVE--LKEQMPPHWVLVNDISFLHIADGR-AYLID
A0A3S4CAP5	-----TFVPE--TL-----TARE---RLDPGPKVFVNVQNWG--GGPSFVRIYS
A0A3N6NJG1	C-----ATEKIE--TI-----TVDK---VPDWNPNWIYGIDDNFNTMAAGT-VQVYD
A0A3N7CFA9	P-----PELPPE--TL-----STS---TLDAAQQARVYVADVSAIHHDGR-IRIYD
A0A3S3TT68	E-----NLTEPE--TA-----TSAT--LPA-PSKDWFFVRGYF----ETGG-TSIVD
A0A437J7B1	V-----ASVEPE--EA-----NVAT--IPP-PALNWFYVDGGW----GTTG-TSIFD
A0A410GFE7	A-----QHLPVE--QL-----TGGH--HLPADASQRVYVMDSVFQHLTESR-LSIFD
A0A418ZRX7	L-----AAGEAD--EP-----VILN--APE-PDTRRVYIQDPAH-FAAVTQ-QFVID
A0A423PIM0	-A-----DSFEPE--QV-----TMES---AIDPGANVLVNQASWD--GASR-IHVFN
A0A401J738	G-----AALEME--TS-----DVLS--ITP-PKPTWFFVDGGW----DMPG-TSIFD
A0A4Q7LIS5	P-----EPLPPD-PPL-----TTLP--RIDAQHGKRVYVIDLAISHISDGR-IRVLD
A0A4R0XD57	H-----AIEKPE--EL-----TVQK--LPA-WHPHEVFVVDISMPSMTDAR-IYLYD
A0A4R6RC52	-----EFKPE--TV-----GLKE---TIDPGPNVFVYQQEWK--GAGS-IAVYG
A0A4V3BNW1	A-----HALEPD--VL-----TVTR---MAPADAYRVYIADPNFSSLVDGR-MHVID
A0A4R2KBX4	PA-----QDFVPE--TL-----SVKP---TIDPGPNVFVNQQQWI--GAGS-IAIFD
A0A4V2SDJ7	Y-----ADLPHD-EIG-----Q-AK--LPFPPEPHRAYIVDMEFDTMVATR-VSVVD
A0A4Y8UXA1	-----SIVGS--VT-----SIG-----EPTERWVSIRGGNTAYLVD
A0A4P7XM83	-----FEPE--VL-----TVEE---SIEPGANLFLLDQSWQ--GASR-LNVLA
A0A4Y8UN28	L-----PPLPIE-TIG-----TVET--LPERYPESWVLVDEVSFFKMSAGK-IIVLD
A0A4S1E2M2	-----
A0A562NTZ2	L-----AAGKDD--EP-----HILE--APA-PDSRRVYVNDPAH-FAAITQ-QFVID
A0A558NPA9	-A-----EPFKPE--VF-----TVEK---TIQPGPNVFMNEAAWG--GASQ-IHVFA
A0A4Y6V628	E-----PIPQTE--ES-----DIIK--LPP-WSAHRILVQDTVARHAKDGR-VYVLD
A0A4Y3TVW3	E-----PILQTE--QS-----DVAT--LPA-WGPHTILVVDAVYTHNKDGR-AYVVD
A0A523Q339	P-----PELPAE--TL-----GVG---SLAGTSTARVYVADVAISHISDGR-IRVYD
A0A501PGL6	Q-----AELEIE-EIP-----NVAT--LPSDYPDWIFVADGNFNAMIDGK-IVLMD

A0A501WV29	-Q-----DALPAE--TL-----TVQE---RIPAGPHVYVMDMGIN--GSSP-IYVLN
A0A511X7F5	E-----PVLQTE--QS-----DIAK--LSP-AGPHRILVMDADYPHAKDGR-VYVVD
A0A511XFQ7	D-----PVLQEE--ES-----DVVR--LAP-VTPHRVLVHDEAGQHAKDGR-VYVVD
A0A1I4E4L0	-----IQPE--TV-----GNLT---IPRGTEIVFSVDLALNHVVDGR-VYALN
A0A5D0X323	P-----PPELEE--VS-----DVAV--MGA-PGPHRLMLAGGF----GSGG-AQIRD
A0A6C2CLF7	L-----AELAPE--SI-----TTGQ--LPPHPYRIYLSDAIGHIVDGR-LHVID
A0A5E4RPP3	P-----PPLAAE--TL-----RTAP--MPP-RNPHWLYAIDVAISHLVDGK-VVLYD
A0A6I5YKB7	S-----AALEPE--ES-----TVLT--IDP-PKPTWFYVDGGW---DMPG-TSIFD
A0A5S9QH23	-A-----EKFQPD--HI-----VTQR---QIAAGANVFLNELSWD--GASR-IHVFG
A0A6N6VMG0	A-----DELQPE--TL-----HVEK--VPDGPRDHWIWIWIGDLGAQHNVDTR-AMLFD
A0A6C0U555	P-----PPLPVE-PIG-----VVET--LPAEYPKSWFLVHDAFFHMSDGK-VYVLD
A0A6L6JDP0	-----FTPE--TL-----KVEE---RIAEGPNVLVMDQSWN--GAST-IDVLG
A0A7C9TIH4	Q-----AELPVE--QT-----RIEP--LAPATPERIYLTDPVMPHLVDGR-VIVID
A0A6J5FID0	T-----AAEKPE--EL-----TIQK--MPA-WHPHEIFIVDPSGDAATDGR-IYVYD
A0A6S6ZV48	W-----ADLPIE--EL-----KGGT--RLPPATPHRLYVMDTSFNHMOVDSR-VNLYD
A0A6N0WYA5	A-----KPLPEE-AIP-----SVTA--LPAQWPKSWVLINDFHFNIVDGR-VVVVD
A0A7L5RWA2	-----FVPE--KL-----TVEA---KIKPGPNLFVVDNWA--GSSN-ISVLS
A0A7Y9QWY9	P-----EPLPPD-PPL-----TTTP--VIDAKHGRRVYVPDLAISHITDGR-IRVLD
A0A7X0JRG8	Q-----AEIQPE-PLP-----VYET--LPKELPDSVLFAHDANFDALVAGR-VVVLD
A0A7Y7IV73	D-----PILQTE--ES-----DIVK--LSP-GGPHRVLIEDAVYRHNKDGR-VYVVD
A0A7W4KEC0	S-----PVLQAE--QS-----DVAT--LPP-VGAHWVLPAT-----DRDA-YTLYD
A0A7W6CEB8	A-----VPTEPE--TP-----NVAT--LAS-PNPGWIFYVRGGF----DTAG-TQIVD
A0A840SJ55	L-----ASGEAD--EP-----VVLN--APK-PDARRVYVQDPAH-FAAVTQ-QFVID
A0A7W6DDQ9	P-----HGLEPE--ES-----DIVT--IET-PKPDWIFYVRAGW---GIDG-TAIYD
A0A7W4J5F5	T-----PVLQAE--QN-----DVAT--LPP-VAPHWFLPAT-----AHTA-YTIYD
A0A7W5ZZB3	V-----PVLATE--DV-----TLVE--LKDRMPPHWVVVNDVVFTHLIDGR-SYIVD
A0A7W7B107	P-----QPLAEE-PIP-----VVET--LPERYPDSFVFVHDLHFKSIPDGR-AALVD
A0A848G7N7	-----MVK---MAPPTPQRMYLVDPAFNHMIDGR-LHIVD
A0A853FCE1	E-----IQAPME--KL-----TGGH--SLPEDATHRVYVMDSVFQHILTDSR-VNIYD
A0A7U7EL64	F-----ADLPVE-TIG-----Q-TT--LPFPPEPHRTYVVDVEFENLVAGR-VVVVD
A0A850PC06	D-----PILQTE--EN-----DIAT--LPA-IGPHVVFIEDPVYRHAKDGR-VLIVD

A0A7R7HAE8 -----IQPE--TV-----TNMT---IPDGTELVSVDLALNHVVDGR-TYVLD
 A0A967B6I1 E-----PVLQTE--QS-----DTVK--LAP-WSAHTILVVDVAVYQHNKDGR-TYIVD
 A0A936Z330 Q-----AQLAVE--TL-----AMEP---LAPADAHRIYLSDPTMPHLVDGR-IHVID
 A0A931HFP9 P-----HGLEPE--ES-----DTTT---IAP-PSPDWFYVRYGW----DADG-TAIYD
 A0A917GPW5 -----SVVGG--TS-----IIE-----GYDRYWVSVRSGGTVYLVD
 A0A919AKV3 A-----DDLPE-PTP-----NVVT---LPSEYSKDWIFAQDLNFVEPVGGK--IVVLD
 A0A974Y937 -----M-----TVGK---LAPAHPYRLYYTDVALPHLADGK-LTVID
 A0A939DFR0 P-----PPLPIE-PIG-----VIET--LPATYPESWFLVHDAAFFHMSDGK-VYVID
 A0A916IQB5 A-----EDLPPE--TL-----TVAP---LPPADENRLYISDVAFRHMVDGR-LHVVD
 A0A8B6X9Q5 G-----RAFEPE--TI-----DIAT---LSGDASQRLWLPDAVLSHIADGR-LLVVD
 A0A940SI03 H-----AIEKPE--EL-----TVQK--LPA-WHPHEVFVVDISMPSMTDAR-VYLYD
 A0A9N8RZ47 A-----AVEKPE--EL-----TTAK--MPA-YSPHQVYVIDANFPSMTDGR-VYVVN
 A0A977SHT6 -----EFVPE--TF-----SVKE---AIEPGPNIFVGKQEWG--GASS-IEVYS
 A0A9J6RMI2 M-----PPLAIE-EIG-----RIEK--LPASYPEDWVLIDESSFFNMYGGK-VIILD
 A0A9Q3YNS7 Q-----AQLPVE-KLG-----QNTT--LPFPDPHRSYIVDFEFNNMVATR-VVVVD
 A0A9X1DC07 V-----RAQEGE--TS-----EVSK--MEP-PKPEWVFVRGGF----GSEG-TSIYD
 A0A9X3U0E8 P-----EPLAVE-QTP-----NVLT--LPAKYPKNWVFLHDFYFPSIIDGR-VALVD
 A0A9W6JCY9 L-----AAGKED--DP-----VVLE--APA-INPRRVYVNDPAH-FASLTQ-QYVID
 A0A9X3H996 P-----APLGEE-PIG-----VVAP--LPAQWPASWVLIHDFNFASILDGR-VYVID
 A0AA41Z7Q8 T-----APLPEE-TIP-----SVTP--LPAQWPKSWVLINDLNFNAIVDGR-VVVVD

(D) d3pnlb1_{AS}_139_167_9.661e-06 mean AL2CO score = -0.62(±0.36)

d3pnlb1 mfrdgadgvisrgkaepgdktmcdvwwpvve**slrqsseqn-----l-svpv-aleaa**
 P76014 MFRDGDGADGVISRGKAEPGDKTMCDVWWPVVESLRQSSEQN-----L-SVPV-ALEAA
 K8E7T6 ILQAGLDSIEKRGAKEKTMIDTWVPVIEAIKTNK-----LT
 Q1R0P1 MLAEGRQSLEQISDASVGDKCLDLTPAIDGYRHALDAG-----E-DFPQ-ALQAL
 A5G1S6 VLAAGVAGVVARGKAAPGDKTMIDALTPAVAALAAAA-----SLPE-ALARS
 A7MG44 ALLAGLAQMKHYGGAAPGDRTLIDALQPALEALRDK-----GIAAA

A7NkW3	AVEGAINGLMARGKANVGDKTMDALVPALHALKQAIADG-----I-DDHE-ALRQS
D9QAF6	LIDGALEGITARGKATPGEKTMVDAWSLASAAARSAADNG-----A-TAAE-VLARA
Q1YEP1	AFCAMAKGIQDRGKAERGDKTMDAWLPAAEAIGEAAERG-----D-DLAA-CFRAA
D1CI02	GLRDAIEAIQQLGKAQPGDKTLLDALVPFVEALEEGVRGG-----Q-DLRS-AWRQA
A0A0H3DEV8	ALRAGLEGVQARGKAVAGDATMVDALIPAVAAAEKAAGDG-----G-DVAA-LLTAA
A9KNP0	VLDAMLQAIISRGNAQKGWKTMDCLAPAVECYQACIAQG-----L-DEKV-TADQV
D7C870	ALRTGVDAVAQLGGAAPGDKTMLDALLPALDALAT-----DGG-SFAAA
D7DPP9	AFAGGVQAIQRGKAGLGEKTMVDLIPVSNEFVLQATQN-----N-DIKL-ICAKL
Q82NL7	ALRAGVDAMQLGGAAPGDKTMIDALVPAVDALSD-----SFAAG
F9USY1	LLAAALAGIEKRGGATTGDKTLIDVWAPVVQAVQAGE-----LT
B9DU17	ILSEGLAMIQKRGKAEKGEKTMVDVWIPVIEALG-QGQLE-----K-----ETI
F8A062	LLEAGLDGIVARGKATTGEKTMVDAWSPAADAAAKAAAE-----A-DPRG-VLVAA
Q5HKK0	VLKAFADGIQQRGKVELNEKTMVDVIERAREAVEK-----NETVDLDKL
Q4L473	VVTEFANAIAQRGKVQRDEKTMFDVVDREAREALEN-----DETITSEIL
Q8R8K0	IFEAALQGIKDRGKAQAGDKTMIDSIEPAYKALKESLENN-----I-ALPE-ALKRA
Q8XDH5	MFRDGADGVISRGKAEPGDKTMCDVWVPVVESLRQSSEQN-----L-SVPA-ALEAA
A6L9P2	MFAGGLANVQQQTQAKRGDKTMMDALIPAVEAMQACTSDD-----I---KE-VLNAG
Q6LL47	MLQDGMVGIVQRGRAEVGDKTMDTWNGIMTSLKQD--QN-----I-SVYD-ALNTA
Q63NN9	ALAAGFAGVQAISDAKIGDKTLIDTLAPAAAAFHEALRAG-----D-DFRH-ALAAM
Q65S46	VLKDGIVAGIVSRGHAELGDKTMCDVWLPVVNQLEQE-DGN-----Q-PLDA-LLKSA
C7R307	LLVAACEGIEMRGHAVTGEKTMVDAWESAVKAAQVAALSG-----A-DTQQ-VLVAA
A1SLY2	FAAAAANSIAQRGKTQVGDKTILDGIHAAAETLRSASDSG-----Q-----AAAIV
B8D1L0	MLNAALEGVKALGDAKVGDKTMMDTLIPAVKTYDKAIEGG-----K-GFKE-ALEEM
B7LGV9	MFRDGVVGIVSRGKAEPGDKTMCDVWVPVVESLRQSSEQN-----L-SVPV-ALEAA
B7MKA1	MFRDGADGVISRGKAEPGDKTMCDVWVPVVESLRQSCEQN-----L-PVPA-ALDAA
A0JRA4	AIQAARDGVVARGKAESGDKTMVDAWTPAVDAAAAQAAAG-----DG-DVRK-VLLAA
A0KQ90	MLSDGVEGIVSRGRAEPGDKTMCDAWWPALAALQQAEEQQG-----L-PLPE-ALDKA
A0QU92	ALRAGVDGVVQRGRAEANDKTMFDALAPALDALDAALEGD-----T-DLPG-ALAAA
C7LYL5	TLSLFRDAVLERGHAELGDKTMVDVLPALASLAAELGTQ-----R-SFAE-AAATA
Q9CKH0	FLVAGSSAVFARGGAKPGDKTMVDALVAAEKKAEEVSHE-----PLNV-ALLSI
A0A3N4B7H8	MLKGGLADLQEVTDARVGDKCIMDTLIPASAAFELAQQQQ-----Q-SFVE-SLHRM

Q8YA19 MIINGAAAVQHRGKAELGDKTMMDAFLPGVEVLQNRDANA-----E-PI-E-TFSTF
 Q8DY42 ALGAGLEMIQKRGAELNEKTMVDVWHGVIEAIEKNE-----LT
 Q8ENK9 GLQAGLDGIKQRGKATTGEKTMIDVWDPVVQLFKDDE-----NV-APSTI
 C7MWZ8 ALNAGLDGVVARGKAIEVGDMVDALKPVEAAQAACKDG-----VAA-MLSAA
 D1AJM4 AVKEAVEGIKQRGNASVGDKTMVDTIEPFYAAFKKAVQEE-----K-NLKN-SFAEG
 D5UD19 LLEAALDGIVARGRAGAGEKTMVDAWTPAVAAAVEAADHG-----A-PPSA-VLAAA
 C7Q5T1 AFDAGLAGVQKLGAAPGDKTMVDALVPALDAFGAAARAG-----E-SDAA-AAEKA
 D7GCR5 ALRAGLEGVTQRGKSAVGDKTMVDALAPAVERLEADAAAG-----D-KLAN-ALKHA
 A0A384LQB2 MFRDGADGVISRGKAEPGDKTMCDVWVPVVESLRQSSEQN-----L-SVPV-ALEAA
 Q6MTW9 CLNDAVSGIKLRGKANIGDKTMVDVLEPVSDLIKELINKN-----E-SAKE-ILNKA
 B2TZU4 MFRDGADGVISRGKAEPGDKTMCDVWVPVVESLRQSSEQN-----L-SVPV-ALEAA
 C3KP63 ALEHAIDAVARRGRASPGDKTLLDVLYPVHAEVV---RR-----A-----GLAGI
 A6VPA2 VLTNGVTGIISRGRAELGDKTMCDVWLPVIAELEA--NQT-----E-PEVK-LFERA
 A7ZKX1 MFRDGVGDVISRGKAEPGDKTMCDVWVPVVESLRQSSEQN-----L-SVPV-ALEAA
 A0A7I6GZ14 MFRDGADGVISRGKAEPGDKTMCDVWVPVVESLRQSSEQN-----L-SVPA-ALEAA
 Q5WJG3 ALKQAAEGIAQRGKAAPGEGTLLDVWSTVANEAK-ETGMD-----W-----NQL
 A9H2V8 LLAAGVAGVAARGKAVAGDKTMLDALIPAVAALSGTQSGP-----DTPQ-ALARA
 B2J6P9 LLQAGLDGVLQRGKAQLGDKTMVDVLSPAVTAFGQAVGES-----K-GTLE-AMQQA
 B2JWR9 VFAAGVDAVAQRGKAGIGSKTMMDVLIPVASRFAEMADED-----AAPEAVLDAL
 K5Y1C8 MFAGGLANVQKQTKAQKGDKTMMDALIPAVEAIQACPSDD-----I--KE-ILEAG
 Q9K7G5 SIEAGLNGILKRGKATTGEKTMVDIWKPVVESLMAEQQLS-----K-----ERI
 G2SM22 LLQEALSGIKKRGAQPNDKTMVDVWNKVVS KADDSS-----LT
 Q6AFI5 LLTAARDGILSRGRAEPGDKTMIDAWTPAVDAAAAAQAAG-----E-SPSA-ILAAA
 B0S302 ILKITTESVKLVGNCKLNDKTILDCIYAAEKSFEENKNEN-----T---IR-LMKKI
 B8I2J6 TLEAALKGMQAFDKAKVGDKTLMDTLVPAIEGYKAALAEG-----K-DFKA-ALEDM
 C8WGF7 MFAGCLAEMQDITTAQVGDKTMMDALIPAVKAAQACAAPD-----D-GPVD-VLMAA
 D2SH30 ALRAGYDGVVARGKAERGDKTMLDALGPACDALDEALAAG-----K-ALDE-ALGAA
 G2NB77 AFGAGVAAVAQLGGAKAGDKTMLDALLPAVEALGE-----SVGAA
 A0A0H2V747 MFRDGADGVISRGKAEPGDKTMCDVWVPVVESLRQSCEQN-----L-PVPA-ALDAA
 Q893Q0 ILETSLGVKARGKAQRGDKTMIDAIAPSLEVVKNGIKEG-----L-DEKK-ILENM
 Q835L6 IVQQGLAGIQMRGKAEPGDKTMVDVWAPVAEVIGTEQ-----FN

Q7NC54	SFYRALLDCKNKYQLRIGAKSFYDILYPVLKYLYLNNDLS-----T---QE-LMAES
A3MYF4	IFKAGVEGIIARGRAEPGDKTLCDVWLPLLDELAQA-DHS-----Q-PEAV-LLNQA
C9YYH4	ALRAGVDAVRALGGAAPGDKTMVDALVPAVDALAE-----SFGAA
C4LG95	VVESAVGGVEKRGKATEGEKTMVDAWAPAARAARSAADEG-----K-SPAE-VLRAA
D7DWU8	FLQSGLDGVIERGKAQLGDKTMLDVLSPAVVAFEQAVNEG-----M-GTVE-ALRVA
A6TVH6	VLEAELNGIMERGKAKPGYKTMIDALYPAVTRFKESLEKG-----L-DNHT-ALQEL
D9TSY8	MFEAGLSGIKERGKAQAGDKTMIDAIEPALNELKKSLEDG-----L-KFNE-ALSIA
Q03BZ6	LVDAAAKGIAKRGQAKTGDKTMLDVWAPAADLIK-QGKLD-----D-----AAI
D9QZW4	LFEAYEAGVADLGKAKLGDKTFLDGFHPGVQTLKAELEAG-----V-SLRE-AFGKA
B1YE66	AFKEATDGIKMRGKSEFGQKTMVDIWTDPFYEALEQESDLN-----A-----
D4GL25	MIREGAEGVINRGKAEPGDKTMCVWLAVVASLRQSSEQN-----V-SLTA-ALDAA
D5E5M2	AFSFANENLKARGKTEYRNKTMYPDILFAVEQ---ATKDV-----K-DFNE-FVKKA
Q2RUQ3	MIRAGLDGVVEIGSAKPGDKTLLDSLAPAVDAFDAAQAEG-----R-SFAE-SLDAM
Q2JZR2	AFAALAQQIQERGKAEPGEKTMVDAWKPAADAALAAWASG-----T-PLSQ-SLDMA
I2BC43	MIREGADGVVSRGKAEPGDKTMCVWLVPADALRRASEQH-----L-SITD-ALEMA
Q9FC12	ALRAGVDAVRTLGGAAPGDKTMVDALVPAVEALGD-----SFAAA
Q92WN5	LIQAVASGIGERGKGQRGDKTMLDVWLPAADAAAQAVAAA-----K-STAA-FWADV
Q12FM9	ALAAGVEAIKSRGKADLGEKTMVDLIPASRLLLRLAEEG-----C-DQGT-LCARL
A4YWS0	ALGRAIEDVKARGKSEAGQKTMVDLIPVQAFAADG-----DD-LATRL
A9WUM9	VLTAARDGIVARGKAEPGDKTMIDAWTPAVEAADA AVENG-----L-AADE-VLAAA
A9W9R1	ALEAALAGIVARGKAQRGEKTMVDALAPAIEALQSALAEG-----K-SLGR-ALLAA
D1C9M9	AFDAALEGIKARGKASPGEKTMVDALTPAVDALRAAVEQG-----L-DLPT-ALDHA
D2B9Y6	ALQAALAGVQRLGSAAEGDKTMVDALAPAVRALSRATQEG-----K-DPEE-AIGAA
D1B6Y5	AMAEGVRGIVALGKAKEKGEKTMIDALYPALEALSSGSDEA-----S-----ALEGA
A0A140NCI1	MFRDGADGVISRGKAEPGDKTMCVWVPVVESLRQSSEQN-----L-SVPV-ALEAA
C3PGU3	LIEAALEGITVRGKAAEGEKTMVDAWAPAARAARGAADAA-----K-SPAE-VLRAA
A9G640	CLEAGLDGVKRRGKASPGDKTMVDALSPAVDALKAALSAPAPTGDPARS-SLMD-GLARA
A3CK11	VIQAGLDMIQKRGKAVPGEKTMVDVWSGIPISLQ-SGDLT-----L-----EKI
B0K761	IFEAALDGIKQRGKAEAGDKTMIDSIEPAYKALKESLENN-----I-ALPE-ALNRA
Q72DE9	MLEAGVAGLVSRGRPVLQDKTMYDAWAPALDAFRAALGKG-----D-DLAL-ALDAA
Q9CIV7	LIYAGLEAIQKRGKAQVGEKTMVDIWSAFLNDLQTDS-----AS

Q6NEE0	LIAAALEGIQARGKASEGEKTMVDAWAPAAHAAATAADEG-----A-SPAG-VLARA
C6WHH1	ALRAALDGVVARGKAQVGDKTMVDALSPAAAAAAGLGAG-----VGE-VLAAA
C8XFT9	ALTAGRDGVVARGKAELEDKTMVDALTPAVNAARAAADAG-----G-DVAA-VLRAA
D7AWT1	ATANGWATLHRLGSAEVGDRTMVDAPASEALAGAVASG-----A-GLHA-GLRAA
D1BZN2	LLEAALEGITARGHATTGEKTMVDAWHPAAEAAA--AADG-----Q-PVLA-VLRAA
A6X6C1	IVEAVTRGIQERGKGQRGDKTMLDAWIPAMEVAIDARTHS-----L-ASQE-MWSKI
E1R8P9	AFQAGLEAIKKRGKAHVGDKTMLDALVPAVEKMEVLAGEG-----K-DIPT-MLGGA
E2Q762	ALREGVTAVAGLGGARPGDKTMLDALEPAVVALAG-----APE-AFGRA
B7KD17	LLQAGVEGVIQRGKANLGDKTMVDVLTPAVEVYQKAIAQG-----D-TIKE-ALVKT
A5N619	MLEQALVGIMRGRGKLGKTMIDAIEPAVNSLRYSISKG-----L-DSVK-SLENV
Q1H2B4	AFHASVEAIKQRGKADAGEKTLTDLTPVADTF SRLTAVN-----A-EPAQ-VFDAI
E3J2C4	GVDAGTATVQRLGKARPGDKTMVDAMVPAVGALAAAVADG-----L-DLAD-GVALA
Q87SQ7	ALKSGVDGVVSRGKAELGDKTMCDVWLPVLSVKASLENG-----M-SADH-LLNEM
Q881Q7	-----MQDITEAGIGDKCLMDTLIPAVEAFEQAHANG-----A-SFNE-ALDAM
Q8RHZ7	TLNSMIEGIQKRGKAVLNEKTMLDTIMPTYNFLEKSFNEG-----K-NLKD-IKNEV
Q8EW70	IFNQMIEAIKTRGNSQVGEKTMLDLTPAQQAFFKKAveen-----K-DIVE-CFKEM
Q89PB0	VFGSGVNAVVSARGRSQAGEKTMLDVLPVLET LRTA--AG-----QP----DLIARV
C6BY70	VIEAGVEGILQRGRPDLGDKTMYDLWAPVLEVVK EKAGNG-----D-DVLA-IVEAA
H0TUV4	ALGRAIDEVKARGKSDAGQKTMLDVLPVQAAFA---TG-----GA---DLTDRL
Q313B6	LLESGVEGIVSRGRPVEGDKTMYDIWKPALDAYTQAVQAG-----A-ALDA-ALDAA
Q32H07	MFRDGADGVISRGKAEPGDKTMCDVWVPVVESLRQSSEQN-----L-SVPA-ALEAA
C6WWI2	AFTAGVEAVQQRGKAGLGEKTMLDVLPVAAQQFSALAASN-----A-DIKT-TCQAL
C6XCW2	LFATGVAGIQHRGKAQVGEKTMMDVLIPVSALFTQLASTH-----A-EIDADILNAI
A0A094YZF9	ALREGEKALRQRGKAVLGEKTMIDVWSPVVAELEKANSLN-----H-----EKM
F4XFL5	MFAGCLSEMEDITTAKVGDKTMMDALIPAVQAAQQTQGDC-----KA-ILEAA
B5HKC0	ALRTGVAAVAQLGGAKAGDKTMLDALEPAVAALGD-----STE-SFAAA
I2F888	LFQAMVDGVQKVGKAQLGDKTLTLDALIPFKESLKESAKLN-----E-PIEA-AFDKA
I6RZA4	IIEEGKNGIQARGKAEAEKTMLDVWLPVTEALK-NNRLT-----E-----EVI
A3YTX8	ALRQAVDAVKARGRS DAGQKTLLDVLPVHAALA---RG-----A-----TAAEI
J0MWJ2	AVEAGVGGIVQRGRAEAGDKTMLDAWFPALDSLRSRG-----A-DLRA-ALQAA
E5BF30	IFKAMIEGVKKRGKASLGEKTLTDLTPVYDLLQHRLEQG-----E-DILS-NTEEI

F3NT86	ALRTGVDAVRQLGGAAPGDKTMIDALVPAVDALGE-----SFDAA
E0QM99	VLHAGLQGVLDGRGKAELQDKTMVDAMTPALEAFDAVAATG-----LTA-AATAA
C4IDX1	MLNEALEGIKMRGKSVEGEKTMIDTLSPALEASEKALEEG-----K-SYED-VLSAL
I9GRJ3	MFAGGLIGVKKQTKAQRGDKTMMDALVPAVEAIQATNSSD-----I--KE-LMAMG
H0HYA5	ALAKAIDAVAARGKSQAGQKTMLDVLVPVQTAVA---AG-----K-----TTPEV
F3B1P8	VLKAMLEAIMSRGQAKAGYKTMIDSLYPVKAYEEALREN-----D-DDKT-LCEKV
G5K1Y5	ALQAGIDMVQKRGAKEVGEKTMVDVWTPVIKSLKEET-----LI
F3PPM2	MFAGGLANVRRQTKAQKGDKTMMDALIPAVDAIQSCPSDD-----I--RE-IMNAG
F5T169	VYSAGVESIKARGKADIGEKTMLDTLIPVMQSLQSDTEQN-----A-DKTT-VLSNI
H3NBU3	ALEAGRDGITKRGKSSVGDKTMVDVWTPALELLADGD-----VS
G9PIG6	ALEEATSGLEARGHATSGDKTMADAWRPATVAAREAAEIG-----E-DEVG-VLSAA
A6EMJ5	SIESGLKGIKSRGRASLGEKTMVDVLEPAVNSISASINSN-----A-SMEQ-ALTHM
W0IWI1	MLAGAMTGVSLGDAKVGDKTIIDTLAPAEAAAYREAIAAG-----A-TIPD-ALARM
C7HTR7	AFSDGVDGVLMRGKAQVGDKTMVDVLYPVAEALKND-----S-SFEEI
H0QJK9	ALAAARDGIVARGKAESGDKTMVDAWTPAADAAAAAADG-----DTLA-VLIAA
A4AIN0	ALRAGLDGVVARGKAEAGDKTMFDAINPALDAWDAAVAGG-----A-DIAA-AASAA
F0Z4L2	YLDAGRTGLYEIVDARIGDKTLVDALSPAVDALRQADGKR-----E-SFAA-ALDEM
K0YPL4	LIGGALAGIQARGKAERGEKTMVDAWGPPAYDAAKAAAESG-----A-TPEQ-VLAVA
I8UJC4	GFQEACAGIAARGKSEVGQKTMLDVWVPFTEALA-TRQNV-----D-----ETI
C8PCR8	LLEAALAGIKKRGGATIGDKTMVDVWVSVVIEAIKEDA-----LT
C2L0R3	IFSTSLTSLKKRGKAKVGDKTMVDALEPAVLAALEEGAKEG-----L-DLIE-GFQRA
D9X7S5	ALRAGVDVMTLGGAAPGDKTMIDALVPAVDVLGD-----SFAAA
C6PVN6	VMNAALGGIKMRGKAELEDKTMVDAIVPAIESLNEVSSN-----E-DTVI-ALEKA
G2GMN3	ALRAGVDVMTLGGAAPGDKTMIDALVPAVDALGD-----GFAAA
D0GNQ9	ALEAGISKIKERAGSKENEKTILDALVPATEKFEKAIKSD-----K-TISE-ILKET
G6FMN8	MLQAGLDGVVGRGKAQLGDKTMVDALSPAVTAFGQAVTAG-----E-NILS-AMQKA
E0NGR7	LLVAATAGVQKRKGKAILGEKTMVDVWEPISEKA---T-----FT
C6JM61	TWNEMIKGIEMRGKAVLGEKTMLDTQIPAYEAFKLKADAG-----A-GIKE-CFEFA
D6U6Y4	LLAAMVEGIQARGKARRGEKTMLDALLPALEAARKAESEE-----L-EMPQ-LLQVC
G3ITN9	IFTSGVDAVKQRGKADAGEKTMLDVLIPVAASLRQAAADS-----V-ALPV-ALDNV
E6MJW9	MFEAAIGGIQQRGKAVAGEKTMIDAVMPAKEAYDAGIAAG-----K-SIAE-ALADA

C0W3K3	AMEAGVAGVQARGRSQAGEKTMLDAWLPALEAMRGQ-----S-DLAA-GTAAA
C8NCE6	AIADGSAGLVARGQAAAGDKTMVDVWLPVAEVLKQAAASG-----V-SLKD-ALQAA
E8LGV2	MLAQAKEDFEDISKAKIGDKTMVDALYPALEAGMTAEG-----DAKA-VFAAM
H5X503	VLRALEGVVARGKAEVGDATMVDALSPAVEAAEAAKGEG-----IAA-QLAAA
A6DNZ7	SFESGLARVMKIGKSAEGDKTLIDALAPGIRALKASSQAG-----E-SLGV-ALNKM
B1FVY6	MFAAGVEAVAQRGKTGVGSKTMMDVLIPVAARFKELAAVE-----SPALRKAVLDEL
F9QEG7	MLLAAAEGIKMRGKANVGEKTMLDVLEPFATTFDQLTKNG-----E-KNKS-ALEKA
I1D5G2	ALRAGLDGVVVRGKAEVGDATMVDALKPAVEAAERAEGDG-----VAA-VLSAA
H8GRD8	AFAQGVESVKLRGRADAGEKTMLDVLPAAQSLQKSAAAS-----E-GLKE-SLAEI
E3CX22	ALQEGLNGIVALGKAQVGDKTMVDTLVPALSTLAAE--AE-----G-DERS-AWDKT
G7M3Z5	MLNEALEGIKMRGKGQAEDKTMIDAIEPALNAINEGIEKG-----F-EVKE-ILRTA
B1CB33	MMEEAINGVKMRGKSEAGEKTMLDAMIHAYDAFKEG--LC-----D-GAKS-AIKKA
G4CVL8	ALDAGLAGIVARGKAEVGDKTLVDALSPAVDAVKKVAADG-----G-SAAE-ALAKA
F9EGT1	AIGAGVSGIARRGRAEAGEKTMLDAWYPALDALRAS-----T-DLVP-ALEKA
I8TY96	MLEAAIAGIKERGKATTGEKTMLDALVPAYEAFQDGAKTG-----K-SVIE-CLELA
G5IBQ9	MLKGSLEAMEDITTAKVGDKTMMDALIPAVEAAVAAGQAG-----G-DVMA-VLTAA
G5KIC1	HLQAALEMIQKRGAIEGEKTMDVWIPVIEALKTDS-----LT
F9ELQ8	ALNSMIEGIQRRGKAVLGEKTMLDTIIPYTNFLEKSFNDG-----K-SLKE-IKNEV
A8RYY3	MMDTAVQAVEQRGKATVEEATMLDAMVPSLKTMKDAAAEG-----K-SVRE-ALEAG
G8TSR2	AIDVFVTALKERGKAELGDKTMMDVWLPARETLHERLDAG-----D-SGWE-ALQYV
G8S8S8	ALHAGLEAVRRLGGAAPGDKTMIDAYAPALAVFERSVAGG-----A-DLAG-ASAEA
G8PBG1	LIPAGLAGIERRGNATEGEKTMDVWKPAAEAVSAGK-----LT
F7KPB8	MLAAGLEGLYGIVDARPGDKTLVDTLNPCVECVKSAAEAG-----K-DYAV-ALDEM
G8QU73	LFQAYFDGVANRGKAKIGDKTFLDGLNPAIEALKDSIGEG-----K-TLQE-ASQDA
D4E0S0	MMQEGVEGVVMRGKAEPGDKTMCDAWWPVVGSRLRQSAQQQ-----L-SVAQ-ALQRA
F1T4X2	MLQCGLDQIQKRGHAEELGEKTMVDFWSPAIEQLRRGE-----LS
I4BYG6	AFREGLQGVALGKAQLGDKTMVDALTPAIEALEAAAKQG-----L-PLKE-GLKRA
J9Z1A9	IFAQGVEAVKQRGKADVGEKTMDVLIPVANCLQDGVQNN-----K-EINE-ILTEA
F9ZQA6	ALAAGLAGLQRLGKAEEKGDKTMVDALLPAIDTLQSS-----A-DLQKA
I1A7E4	FVSNFAGSLEMLGKVTLGEKTMYDVWKPLSEKLNPLPEIS-----E-NTKKELVNYI
C9MZ82	ALENGISKLKEKANSKEGEKTILDSLCPATKVFANNIDKG-----K-TVLE-ILKEA

K0K2T4	ALQAALEGVVARGKAVVGDKTMVDALTPAVAAAESVASTG-----A-DVAG-VLTAA
Q49VJ6	LLNSFSEAIQKRGKVELNEKTMFDVIERANQAIQQ-----GENLTLDVL
Q5FJ65	LLDAALAGIQKRGGAEPGDKTMVDVWYKLVDPDIKDGS-----LS
I3D7P6	MLKNGVEGIVSRGHAKLGDKTMCDVWLPVLDELEQA-DLH-----Q-PLCT-LLESA
I4F4L6	ALRAGLDGVVARGKAEPGDKTMLDALAPACDALDAALAEG-----R-PLGA-ALTA
Q1WRP5	LMELALAGIKKRGGAEAGDKTMVDVWTVLVPKLDNS-----LT
D7A0Q6	TLGRAVEAVARRGRSGPGDKTLLDVLYPVQAEVA---GR-----A-----APARI
Q1AX45	ALEAALAGVKQRGRAEVGDKTMVDALEPAVRAARQAEGKG-----VAA-MLRAA
A4FMZ5	ALKAGMEGVAARGKAVTGDKTMIDALSPAVIDAAKAAADAG-----E-GPVK-VLSVA
D6ZIF3	LLVKAAEGIAERGGAQPGDKTMLDAWYPAATNAAAIVAKG-----A-TLEE-VLRVA
Q60CU3	AFGRGVEAMKARGKADRGEKTMVDVLPVADVLSAAEHA-----I-APGQ-LAEV
A8LNW4	LIAGARDKMQRGKAEELGGKTVLDSLDYVARTTDKADDK-----ASAA
F2N7D3	AFHAGVLAVHNLGKAEIGDKTMVDVLPVDDLLAGWRGEG-----E-GRHA-SAAEV
F2R6Z8	ALASGVAAVSQLGGAQAGDKTMLDALGPAVEGLRE-----SFAAG
E3DLJ7	IGEEAVAGVQKRGKAEQGEKTMIDTMIPAVNSLKESKEQD-----H-DLET-ALKKA
E3G7K1	MMREGADGVINRGKAEPGDKTMCDVWLPVVESLRQSSEQQ-----L-TVAQ-ALQTA
E3GPD1	ALEAAIEGIKQKRGKSTTGEKTMIDVPAKEAYDKAVGEG-----K-GIAD-ALADA
E3H7Q4	ILKASIDGIQMRGKAVKGEKTILDSLPAYEAYEKSLSDE-----E-SGTK-ALEQA
K2QR18	FWRAYTDGIAERGKAKVGDKTLLDVLDPMTKALEAAAAAQG-----D-SLTM-ALSSA
H6LKL8	AFDEAVGGIQYRGKAVKGEKTILDSMIPDAIKTSIANG-----K-TMTE-ALVDA
J2ZU17	LLAAGLAGIQKRGGATTGEKTMVDVWAPVVAAAK-AGNLT-----E-----QVI
J2VAZ1	AFIAMAKGIQDRGKAEIGDKTMIDAWVPAEAVEAAKARG-----A-SLTE-LLDAA
K2N9I0	IVEAIRDAISARGKASVGDKTVVDSFDYLTRYLAQGPVS-----LETA
I0JQA6	ALKEAVAGIKQKRGKAEAGEKTMIDVWEPLADKMSEVQ-----DF-DRQLI
E4RNI0	IGQSAVDGIQKRGKAEQGEKTMIDAIIPAVDALKESKENG-----D-DLEE-ALQKC
F4CPQ6	ALRAGLEGVVARGKAEAGDKTMIDALSPAVIDALDAALADG-----D-PLAE-ALRAA
A0A0H3GYP2	MIREGADGVVNRGKAEPGDKTMCDVWLPVVDVSLRQSSEQH-----L-SIAA-AMDAA
F8JV61	ALRAGVDAVAQLGGAAPGDKTMLDALVPATEALAFALDAG-----A-GLAE-ALAAA
I0I650	VLEAGRDGVVQRGRAELGDKTMIDAWTPAVAALREALDAG-----Q-PLSA-ALRAT
I0HCV6	GLHAGLEAVRKLGGAEPGDKTIVDAWKPAADAFEAAVAAG-----G-DLTA-AAGEA
F5X6F7	DVKAGLEMIKKRGKAEIGDKTMVDVWEPVLKDLETNS-----LT

F5XQ38	MFRAGVEGVAARGKAVLGDKTMYDALAPACDALDAALAAG-----S-DLSA-ALDSA
C5BWZ3	LVDAALEGIVARGRAQVGDKTMVDAWTPAARAAQEAADDG-----A-APAG-VWAAA
D2PZT9	ALKAGVGGILARGKAELGDKTMYDAWAPALDAYDEAVAGG-----S-DLRG-ALVAA
K4RFM8	AFRTGVEAVMTLGGAAPGDKTMIDALLPAVDALDA-----GFGAA
A8AFT8	MMREGAEGVTSRGKAEPGDKTMCDVWGPVVESLRQSCEQH-----L-SVQA-ALDAA
B7UQ88	MFRDGADGVISRGKAEPGDKTMCDVWVPVVESLRQSCEQN-----L-PVPA-ALDAA
E0U9C1	LLQTAVQGVIQRGKASLGDKTMIDVLVPAVGRYQEAIARE-----D-TIQE-ALFKT
Q73K63	GFSKFNEEIMKKGGAKPGKTLVDTLVPVEKFVRENLGK-----I-PDRE-LIKES
A0A0H2YY24	MFRDGADGVISRGKAEPGDKTMCDVWVPVVESLRQSCEQN-----L-PVPA-ALDAA
A0Q3F2	ALKEALTGIKMRGKADIDDKTMIDTLVPAIDVLEKALNEG-----K-NDLD-ILKDV
D3F3G8	ALEAGAAGVQRRGKAEPGDKTMVDALLPARDALATAAADG-----A-SLAE-ALRAA
D3R2L5	VLNAMLTDIQERGKAKPGMKTIDALAPAVERFKLGLVNK-----E-NIES-IFSEI
F4BL99	VLEAGLEGIQKRGKAVAGEKTMVDEWIPVVEAVKSKT-----LT
F4F7H7	GLGSALAGIRELGGSAPGDKTLVDAIHPAVAVLESPSTGS-----A-GLVA-ALDRA
G4T0K8	AFAQGVEAVKRRGKADAGEKTMLDVYIPVADYLKQAEVNS-----T-PWTE-ILEQV
F4H6I8	LLEAALEGIVVRGKATTGEKTMVDAWTPATEAAVAAADGG-----A-GPAD-VLAAA
K6UNQ1	ALQAGVDGVIARGKAEPGDKTMIDALAPAVEAFKASTD-----GLAA-ALTAA
B0TAR9	MLAAAIQGIKDRGKATRGEKTMLEDALEPAFEAFVQGLEAQ-----K-PLVE-CLEAA
A0A0H3EI07	MFRDGADGVISRGKAEPGDKTMCDVWVPVVESLRQSCEQN-----L-PVPA-ALDAA
D6EB63	MFANALAEISDISGAQVGDKTLMDAFVPAIEAIQACEG-N-----E-AA-LFEAA
Q2G0E9	LIQAFAEAVESRGKVTLNEKTMVDVVARAAEKLKN-----GETLTFNDL
F9ZY89	AFQLAVAAVKQRGKADVGEKTMLDVWVPVAETLKRAVSEG-----Q-QLNV-ILDQV
E6SH85	MFKAALAGIQERGKAARGEKTMVDALGPAVEALEAALGRG-----A-GLGE-ALAEA
F7V0N8	MFAGCLAEMRDITNAQVGDKTMMDALVPAVEAAQACTDDD-----A-AA-VFAAA
D4MT14	AFEAAVEGVKQRGKSDKGEKTMLDAMIPALEAIWQTYGET-----K-DAQS-AWKAG
A0A8B1NT48	GLGAGVEAVAQLGGSAPGDKTMLDALVPGIEALAT-----SFDAA
A0A0H3MXE5	TLQAGLDMIQKRGKAELGEKTMVDVWIPVISALRESQ-----LT
I1YIS9	IYAAGVAAVKARGKADIGEKTMLDTLIPALVSLQASVRSN-----D-SLMQ-AMQSL
F5YG98	MLRSGLLALYDIVEARPGDKTLVDTLAPACDAMDKDAEEK-----M-NLVA-ALERM
F6EM32	LLHAGLEGVVARGKPEPGDKTMFDALAPAVEAVDDALDDG-----A-SLSD-ALAAA
F6FRU1	MLEAALEGITTRGKATTGEKTMVDAWQPAVDAATRAAQDG-----A-DPVA-VLRAA

K9ETT1	ILSAGLSGIQKRGKAEVGDKTMVDLWSGALDLIK-EGQLT-----Y-----QKL
M2XUI3	ALAAGQAIVQRYGEAEVGDKTMVDALAPAVEAMRRSLHDG-----E-PSQH-VLEAG
K9CFB7	LFTCGIEAIRRRGHAERGDKTMMLDTLPIRDAFLPENAE-----K-SLRE-CLEDA
G0VNU3	AMEAAVDGIKMRGKATEGEKTMMLDALCPALKVMQDEVAAG-----K-SLKE-ALQDA
D7UV97	VIEAGQEGIEKRGKSHAGEKTMMLDVWEPVVNSLHQDE-----LS
C8RYK0	LVVAMADGIKARGQAEELGDKTMIDVWYPAGHAAIAAAAEG-----G-SPAE-VARAL
K8WHA8	LIKAGTDGVVSRGKAEPNDKTMCDVWWPVSEALENN--AS-----L-PLND-AIAIA
E6LEU6	AVQAGLEMIEKRGKATVGEKTMVDIWASVLADLQ-QDQLT-----V-----ARV
C0W168	FIEGGLGGIQARGKATTGEKTMVDVWTPALEAKAAAANG-----A-SAVE-TLEAA
M4U7Q4	MLSAGLDGIIERGRAQPGDKTLCVWVWPAIDAGQQALDNN-----L-PLNI-ALQNI
K9RKI5	LLKTGLDGIARGKTQLGDKTMVDSLHPAVMAFEQAINDG-----A-DVKN-AVEKA
K9TAS4	LLQAGLNGVLDRGKAQLGDKTMVDALSPAVTAFQTAAAE-----K-DMRQ-AMQQA
K9U7Y7	LLRLGLEGVIQRGKAQLGDKTMIDVLSPVVDNFQKSVDNN-----Q-TTLV-AMQQV
L1L3V1	ALRAGVDAVMTLGGAAPGDKTMIDALVPAADALRD-----SFAAA
L0RXD0	FVANFAKNLQILGKVQLNEKTMVDVWNPFCCLKSEFNEIN-----L-EAKNELLEYL
K9WJ60	FLQATVDGVVQRGKAHVGDKTMMLDTLAPAVDAFKDAIAEG-----A-STPE-ALQKA
K9ZQU8	LLQSGLDGVIERGKTQLGDKTMVDVLSPAVVAFEQAVGQG-----M-GTVE-ALQMA
K9XI13	LLQAGLDGVLQRGKAQLGDKTMIDALSPAVTIFTQAINQG-----K-TTSE-AIQHA
K9VA65	MLQAGFAGLVERGKTQLGDKTMVDTLSPAVIAFQQAVNDG-----K-VMRD-AMQLA
L5NDP0	MVQEAEGLKQRGKAEVGEKTMIDVWSPVAEAVKEEG-----TW-EPVKW
L0EJ60	MFEAMVQGIADRGKARVGDKTILDSLAPATEAMGAARQRG-----A-GLDQ-MLKEA
F4LS03	MFKQGVEAVEFRGKASVGEKTMVDVLRPAVDEFEKAMKEN-----L-APKE-IMEAF
L7FGQ5	ALRAGVDAVMALGGATPGDKTMIDALVPAVDALTD-----SFAAA
L0KF84	AFGKAIEAVAARGKSQVGQKTMMLDLVRPVDHALA---GG-----R-----TAAEI
F4EWM0	AFSASVAGIKMRGKSTIGEKTMMLDALCPAERAMREAVEAK-----K-TLKE-ALEAA
L8TMK9	AVSAARDGIVARGKAEVGDKTMVDAWAPAADAATAAADTG-----GP-EVLS-VLVAA
M3BS32	ALRAGVDAVMKLGGAPGDKTMIDALLPAVDALGE-----SFAAA
K2FJ00	AVEEALNGMKQRGKAEQGEKTMIDVWHPVADFLKNGQ-----NV-NAGKL
G9QI21	ILKAGLEGIQKRGKAVPGEKTMVDVWVPVIEALESN-----LT
M7NIQ8	YWVAFGKGIKERGQAEVGDKTMVDTLPEFFRTLEEEYASS-----R-DFSE-SFSRA
M7PNV0	VFSAGVESIKARGKADIGEKTMLDTLIPASQSLQQDAANG-----V-PLET-SLSHM

M5DZ01	IGETAVAGIQKRGKAEAGEKTMMLDTIIPAVDALKESKKN-----D-SVEE-ALQQC
N4WJ21	LFTHSLSAIKTRGKAEIGDKTMIDALQPAVEALQNTHV-E-----Q-DLLT-ALKQA
C9ABG8	IVEEGLTGIKMRGKAEFEDKTMIDVWQPVAEALK-KGELT-----K-----DTI
M9W192	CLIQAVEGIKLRGKAQLNDKTILDVLPVSELIQELIKTR-----L-DAKE-ILTKA
N6XD13	LILAALEGIQARGKAERGEKTMVDAWGPASDAAAKAASEG-----A-DEIA-VLEAA
N9VEI0	VYDAMLQEIMKRGKTEPGQKTMIDALYPALRAYREGLDAG-----R-RDEE-IIQDF
R4KG11	MALSAVKGVSERGKAKVGDRTMLDALSPAVALVASLIEK-----S-ILTE-AFTKA
R4LHW9	ILRAGLDGVIARGKAEPGDKTMVDTLTPAVEALESALAAA-----R-PLPE-ALRAA
R2SJE3	LLSAAIAGIEKRGNSQPGQKTMIDLWVPAVEALK-TDSLT-----P-----EKI
R2Q950	IVNQGLQGIQARGKAVAEDKTMVDVWIPVAAALKNGE-----LT
R3TPV0	MIKNGIAAVQHRGKAQVGDKTMIDAFPLGLEVLETYQVEE-----D-PY-Q-FFEKF
R4UJY9	AYLAGIKAVKTLGKSDVGEETMLDALIPAVKILESNNLN-----NK---DLYKQM
R4T9Z9	ALRAALEGVQARGKAVGGDATMVDALIPAVSAAEGASGDG-----VAA-ILAAA
S1P0N7	LMAQGLNGIQLRGKAEVGDKTMVDVWSPVVAALKEEN-----LT
R9KQ22	IMEAVIGGIKLRGKAERGEKTMIDALEPAMDALAKGIEAG-----D-SPED-CLAKM
S0FK13	MLNCAVEGIQKRGGAQLGDKTLDDALIPAAQSLRISANS-----L-SISE-ASKLA
S0J6Y9	MMEAVIGGIKMRGKAERGEKTMIDALEPALEALTKGIEAG-----E-SPED-CLNHM
R9IRK6	MMEAVIGGIKMRGKAERGEKTMIDALEPAMEALTKGLEAG-----E-TPED-CLAHM
S3B602	ALRTGIEAVAQLSGAAAGDKTMLDALLPAVDALEDS-----GGT-NFAKA
S2XG65	ILKAFEDAVAQRGKVTREEKTMVDVISRAREAVEN-----GERVDLEKL
S2YZ61	ALRAGVDVMTLGGAAPGDKTMIDALVPAVDALRD-----G---GFAAA
S2W6B3	AFRAGVEGVVARGKAQAGDKTMLDALFPAADALDA---G-----S-DLGS-ALKKA
S3X4B0	ALQAGVEGVAERGRCMLGDKTLFDVLAPAVDAFAA-----DFVD-PWGAA
S4AMF0	ALRTGVDAVAALGGAAPGDKTMLDALVPAIDALPT-----SFAAA
R7RQ76	MLLEALNGIKARGRASIGEKTMVDSLEPAINELKVSIDNK-----F-NELE-CLEKM
S4MG33	ALRAGVDVVRTLGGAAPGDKTMIDALVPAVDALGD-----SFTAA
S9SCC0	IIPAIRDGIAHRGKAVPGQKTMMLDTWHPAAEAVIGGATAA-----EV
S9S516	LLADVRDRMLARGGARLGDKTMVDMMLDAVIRATDGLDAPE-----A-----MAIAA
S5VBA9	ALRAGVDGVMALGGAAPGDKTMIDALAPAVDALPD-----GFAAA
T0TK32	LIYAGLEAIQKRGKAQVGEKTMVDIWSAFLKDLQTDS-----AS
S0LAM8	VLEAGALGIKKRGKAELEEKTMMLDVWWPCVEELKENQ-----LT

T5KTF2	ALRAGLDGIVARGKAEAGDKTMFDAMAPAADAMDAALAAG-----S-SVAE-ATRAA
U1GE01	AFKADLDGIMTRGKAEPGDKTMVDALAPAVEALQTDAEAG-----R-TLQE-ALDHA
U1MTZ3	VLTAARDGIVARGKAESGDKTMVDAWTPAVEAASA---AG-----D-DVRA-ALAAA
U1N326	ALVEAATAIKARGKSEVGQKTMVDVWDPFLSDLNESDDFD-----A-----
U2T4X1	LLTAARDGIVSRGKAEPGDKTMVDAWTPAVDAAAAAAEASG-----A-SPA-----
U2TE92	MGKGAIAGVMERGKTKVGDKTMLDALAPAVDALEAASVAG-----K-SMKD-AWQDA
U2TIQ4	FYRAFADGLAKRGKTQLGDRITILDALDAGAVKAAEVDPAE-----G-FLA--VATAA
U2UUY7	VLLSMLDAITARGQAKEGDKTMIDSLAPAVKKYKECLDRK-----E-DAEL-LCEEV
U2N6F3	MLKDALDGIKMRGKAKAGEKTMIDALEPALEAINKGIEQG-----L-ESKE-ILKLA
U4VFA1	MLHAGLEGIQSIGSAKVGDKTLLDTLVPAIEAFDEATAAG-----K-SFAE-ALEAL
U5F6K8	ALENAVQGLMDLAGAKVGDKTLVDTIYPACQAYQAAINQD-----A-EFSQ-CLREM
U4K1X7	ILSEGLIGLQDISDAKVGDKCIMDTLVPVEAMQKSVREE-----F-SFEG-SLSNM
U7VCP6	AAEAMVEGIKMRGKAQCGEKTMIDTIVPVVEVLKNNKEDS-----L-D--A-LLKKI
U7UHV1	AFAAAIEGVKMRGRAEKGDKTMLDALCPAYEALALSLADG-----E-ELAL-AVKKA
U7UNX5	ALKTMVEDMKKRGKTEVGSKTMIDALNPAVEEELKHLNSR-----EEDLVK-IFENV
U5MP41	ILQVSLDGIKMRGKSIEGEKTIIDTLSPSIEAGRKALDEN-----K-SQND-VLIAI
V2YGV3	IFAKALEELSDMSGAKVGDKTMMDALIPASQAIAAYEGGD-----E---AG-LFAEA
U5T5E1	MLEAGQQAVVNVGSAQIGDKTLLDTLSPATEVFANT---P-----G-TFEE-RLAAA
A0A2I5TCR4	LLATAVTAMTQRGKGELGQKSVLDIVNALANELTSISTFD-----E-----MKHTA
U5VX81	VLRAALEGVVARGKAVAGDKTMYDALAPAVDALDAALAAG-----K-SLGD-ALAAA
V7IAM1	ILEAKLTAIMERGNAKPGYKTMIDPLYTAAVRMKAGMEAG-----M-DDTS-IISEM
A0A084A2U3	MIQEGAEGVMMRGKAEPGDKTMCDVWGPVVESLNQSLEQQ-----L-SLPQ-ALQQA
V5DRA3	VFMKAVEAVKQRGKAERGEKTMIDVLIPVAELLLQNAD-----QPE-VLEQV
V6KYB2	ALRAGVEAVAQLGGAAEGDKTMLDALFPALAALDAALAGG-----E-ESAV-ALAAA
V6JJD1	ALRSGVDGVMALGGAAPGDKTMIDALVPAVDALAD-----GFAAA
V6Q9X7	ILEAGRDGIRKIGKSDRGEKTMIDMWFPVIEALKENK-----LT
V2Y558	ILEAMLDAIMSRGQAKPGFKTMIDSLYPAVEEYKNCLETG-----V-SDEE-LCDRV
G9WKH9	VFFTSLASLKKRGKAKVGDKTMVDALEPAVLALKEGSEDG-----L-DLTE-GLQKA
V7EEK5	ALQAAAQGITDRGRARPGDKTMLDAMQPAATAYAGALSQG-----D-SLPA-ALRAA

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d3pnlb1	ssiaesaags	titmq-arkgrasylder-sighqdpqatsvmfmmqmlalaake-----
P76014	SSIAESAAQSTITMQ-ARKGRASYLGER-SIGHQDPGATSVMFMMQMLALAAKE-----	
K8E7T6	TEVIEYSVNATKDMK-ATKGRASYLGER-SIGHIDPGAASSGYLFETMMEAGVCNE----	
Q1R0P1	RHGAQRGCDSTLELE-AKIGRAARLGER-SRGHLDAGAVSCCLLLTRLADSTERRLEKAA	
A5G1S6	AAAAREGAEATAPLV-ARKGRASYLGER-AIGHVDPGATSSAMLLAALAEAAAG-----	
A7MG44	AQAAEQGAKATAQMGQARAGRSSYVGSNDLAGVEDPGAVAVAGVFKAITQGE-----	
A7NkW3	VAAAEQGMKNTIPLV-AKKGRASYLAER-SAGHQDPGATSSYLMFKAMMDAWTK-----	
D9QAF6	AESAEQGAESTIPMV-ATKGRASYLGER-SVGHKDPGATSSALFLKAAADAAKECTAS--	
Q1YEP1	ARAAEEGAEATKAMR-ASKGRAARLGDR-SLGHDPGAASTALIVGVMATQLTG-----	
D1CI02	LPVAEEAARATAGLV-ARKGRSSRLGAR-GLGHPDPGAVSLTYILRAVEPALPA-----	
A0A0H3DEV8	ADAADTGAESTVDLV-PRKGRASYLGER-AVGHLDPGARSSALLLRAFAEAAR-----	
A9KNP0	KQAAIDGAESTRDME-AVRGRATYQANK-GVGHLDPGAVTMSYQIATLMDFVKEHCE---	
D7C870	SEAADKGALATVPMML-ARKGRASYLGER-SIGHQDPGATSSALLFAALAEVASS-----	
D7DPP9	IQTAEQGMLSTKDLI-ATKGRAAGLGER-AIGHIDPGAKSCQLMIETVCHLLLPK----	
Q82NL7	RAAAEEGAVATTPLQ-ARKGRASYLGER-SIGHQDPGATSSALLIAALEEASVE-----	
F9USY1	QDVIDDAVASTPMV-AKKGRASYLGER-SVGHLDPGAVSSGYLFTLLDTEGIL-----	
B9DU17	W----DAVKATEPLV-ATKGRASYVGDR-SKGHIDPGSYSSGLLFEAMLEAEVV-----	
F8A062	AQAAAQGAASTIPLV-ATKGRASYLGER-SAGHLDPGARSSSELLLAQVQVAP-----	
Q5HKK0	Q----SFANETKDMV-ATKGRASYFNEA-SKGYIDPGAQSSVYILNAIIGGE-----	
Q4L473	Q----QFATDTKEIE-ATKGRAAYFKKD-SIGYIDPGAQSMVYVLSALIGDDIE-----	
Q8R8K0	VNAAKEGMEYTKNIS-ARKGRASYLGER-SIGHIDPGATSSYLMIKALADVILL-----	
Q8XDH5	SSIAEFAAQSTITMQ-ARKGRASYLGER-SIGHQDPGATSVMFMMQMLALAAKE-----	
A6L9P2	AKAALDGAETVPMK-ANFGRARNYGER-SIGFADSGATSWSCMFASFAEVL-----	
Q6LL47	VANAEVAMKSTIPMQ-ARKGRASYLGER-SIGHQDPGATSTYLLFTALRNASAQ-----	
Q63NN9	SAAAERGKESTRWLQ-ARVGRASRLGER-SVGTLDAGAASCCLILCSLASSIGARLN---	
Q65S46	VEKANISLQATIPLI-AKKGRASYLAER-SAGHQDPGATSTTYMLEALYNAVK-----	
C7R307	AQGACAGADATVAMR-ASKGRSSYLGER-SVGHRDPGAQSTALILKAAAQTATNGEFHDS	
A1SLY2	VDAAARAVEETRSLQ-SRRGRASWLQER-SIGLADPGATAFQRFVEAWSRVDGPSS----	
B8D1L0	QVAAEKGKESTKDLV-AKVGRAARLGER-SRGVLDAGATSCNLILQAMANTIRDLLISE-	
B7LGV9	SRIAESAAQSTITMQ-ARKGRASYLGER-SIGHQDPGATSVMFMMQMLALAAKE-----	
B7MKA1	SSIAESAAQSTITMQ-ARKGRASYLGER-SIGHQDPGATSVMFMMQMLALAAKE-----	

A0JRA4	AEAAEAGAVATDPLI-ARKGRASYLGER-SAGHRDPGAVSTALILRAAAGAAG-----
A0KQ90	VAAAAAGTEATIQQ-ARKGRASYLGER-SIGHQDAGATSTLLLLTALRDRARL-----
A0QU92	ATAAEKGRDATESMI-ARKGRASYLGQR-SVGHIDPGATSAAMLIAAAATAAGSTS----
C7LYL5	ASVASERAESTIPLV-ARKGRASYLGER-SAGHEDPGAASMAFFACLGEVS-----
Q9CKH0	AKAAEEGAENTRHQV-AVFGRAKSLGER-SLGYVDPGAVSMSFIIKYMAEFVNQ-----
A0A3N4B7H8	KHAASMGRDSTLDLV-AKIGRASRLGER-SRGVLDAGATSCCLILTQLADSVERRLP--
Q8YA19	VDAMHAGAQSTIPLI-AKKGRALRLGER-AIGHLDPGSESSWMLMNIILENLKKAV----
Q8DY42	EDRIDSLVDATKGMK-ATKGRASYVGER-SVGHIDPGSFSSGLLFKALLEVGGV-----
Q8ENK9	EETAKRAMNDTKELK-ATKGRASYFKEK-SIGHIDPGSASSYYIFSALATSIKGA----
C7MWZ8	ADAADGANSTKPLV-ARKGRASYLGQR-SIGHLDPGARSTALLLRAFAEAAR-----
D1AJM4	LEAAEKGMLSTKDIQ-AKRGRASYLGER-SIGTVDPGARSSYLILKTIYNQI-----
D5UD19	AQGAHTGAIATVPLV-ATKGRASYLGER-SAGHLDPGARSSSELILVAAAQAAAAAD----
C7Q5T1	AAAETGMQDTPPLQ-ARKGRASYLGAR-SIGHQDPGATSTALVFRALAEVLQS-----
D7GCR5	STAAQQGRDATVDLV-ARRGRASYLGER-SKGHLDPGAASLTMLIESAARTLS-----
A0A384LQB2	SSIAESAAQSTITMQ-ARKGRASYLGER-SIGHQDPGATSVMFMMQMLALAAKE-----
Q6MTW9	VQLAYLKVEETKNII-AKKGRASYLGQR-SVGHIDPGSYSSYLILKCISENI-----
B2TZU4	SSIAESAAQSTITMQ-ARKGRASYLGER-SIGHQDPGATSVMFMMQMLALAAKE-----
C3KP63	SEQAERAASLTFGMR-AMRGRAAFLGDR-SIGHVDPGAKSCALLTAAICRFLEEQCPA--
A6VPA2	VKKAESVAATIPLV-AKKGRASYLGER-SVGHADPGATSSMLIKALANAVQGA-----
A7ZKX1	SRIAESAAQSTITMQ-ARKGRASYLGER-SIGHQDPGATSVMFMMQMLALAAKE-----
A0A7I6GZ14	SSIAESAAQSTITMQ-ARKGRASYLGER-SIGHQDPGATSVMFMMQMLALAAKE-----
Q5WJG3	EASAREGMEATKDMV-VKRGRGAILGEQ-SVGHIDPGAVSSYYLFTLCNTMKAGE----
A9H2V8	AEARQGAEATIPMI-ARKGRASYLGER-SAGHEDPGAASSALLLTALADTAG-----
B2J6P9	VAIAQKGLQETIPMQ-AKKGRASYLGER-SIGHQDPGGTSAYLMLKSLLEVLENSQTTDH
B2JWR9	PEVAEAGMLATRDML-ATKGRASFLGER-SRGHIDPGARSSQLMIDAVCARLAQDKE---
K5Y1C8	AKAALAGAASTVEMK-ANFGRARNYGER-SIGYADSGATSWSCMFESFAQAL-----
Q9K7G5	Q---QFVSETKEMK-ATKGRASYLGER-SLGHLDPGAVSSGYLFEAMIDGGILS----
G2SM22	NADIEAAVESTKDMV-AKKGRASYLGER-SVGHLDPGAVSSGYLFEALLEAEESL-----
Q6AFI5	ADAAEKGAATEPLV-ARKGRASYLGGR-STGHRDPGAQSTALILRAASETAA-----
B0S302	SVDCKLACDNTANMA-ANKGKARHNAIY-SVGVIDPGAYSLFLFFDTLYKYVLKKRRTK-
B8I2J6	KSEAEKGKESTRDMV-AKIGRAARLGER-SRGVLDAGATSCNLILKSMADAIIELL----

C8WGF7	AEAAEEGARASEGFA-SKFGRARSYGDR-TIGTPDAGAVSTSLFLRGLANGASLPRS---
D2SH30	AEAAAQGRDATEPLV-ARKGRASYLGER-SAGHVDPGAASATLLEAAATALAGRG----
G2NB77	GDAALAGALATVPLR-ARKGRASYLGER-SIGHEDPGAASAALLVAALAEAAGTGDGGRA
A0A0H2V747	SSIAESAAQSTITMQ-ARKGRASYLGER-SIGHQDPGATSVMFMMQMLALAAKE-----
Q893Q0	KDEALKGVNYTKDII-ARKGRASYLGER-SIGHQDPGATSSYLILNEIYKYVCGK-----
Q835L6	EEKIEQFAEATKDWV-AKKGRASYLGER-AIGHIDPGAASSALLFEELVKVINQ-----
Q7NC54	QKILDENFNKSLLLK-SKVGRASYHGKR-SIGIYDPGTVFIYIILEGIIKIYDQ-----
A3MYF4	VEKAENFAKATVPMT-AKKGRASYLGER-SVGHADPGATSSYYLIKALAEAVK-----
C9YYH4	RAAAEAGAAATTPLQ-ARKGRASYLGER-SIGHQDPGATSALLIAALAATAGTPEATDV
C4LG95	ADAANKGAEATVDMT-ATKGRASYLGER-SVGHKDPGATSSAYFLAEASKAVDA-----
D7DWU8	VSAAEQGLQETIPML-AKKGRASYLGDR-SVGHQDPGGTSAYFMLRSLLKVVDQSQKKGGR
A6TVH6	KQGAIDGMNSTKEME-AVKGRAYYQAQK-GVGHIDPGAVTMCYQIEVLVDYLCK-----
D9TSY8	VNASYSGVEMTKKIA-ARRGRASYLGDR-SIGHQDPGATSAYLMIKTVANYVDKLQQ---
Q03BZ6	D---KLVASTEPMI-AKRGRASYLGEK-SVGHIDPGAASSTGELLKAYLDATA-----
D9QZW4	AEAAWEGFEQTTTTLI-AVHGRAATRGEA-SRSLKDPGAAVAALIMKAVADQ-----
B1YE66	--TLDQALADTKERV-ATKGRASYFGDA-TVGVQDPGALSSSLLLSIVEVLS-----
D4GL25	CQQAESAAQSTITMQ-ARKGRASYLGER-SIGHQDPGATSVMFMMQMLAAAARE-----
D5E5M2	YHAAKDENEFIKNIA-ARSGRASYLGER-SIGVNDPGATTIYLIFELLNKEVK-----
Q2RUQ3	TLAAERGRDATRDMI-AKVGRAARLGER-SRGALDAGASSCCLILGTLACGVKKRLA---
Q2JZR2	EQAARQGCEATKDMT-AAKGRSSRLGER-VIGHIDPGAASAAIVIASIAKFVEQHDSCRI
I2BC43	CQVAGQAAQATITMQ-ARKGRASYLGER-SIGHQDPGATSVLLMVQCLAAAANA-----
Q9FC12	RTAAVEGAEATTPLQ-ARKGRASYLGER-SIGHQDPGATSSALLFVALEETAGE-----
Q92WN5	TAAAENGASATRSMV-ATKGRAARVGER-SLGHMDPGAASAVLIIRAMAQTLREG-----
Q12FM9	KEEAELNMLATRDMI-ATKGRAHFLGER-ALGHIDPGAKTSQVALFAVCDMLTIGAAS--
A4YWS0	PAVAAEAADATVPMK-AIRGRASFLGER-SIGHMDPGARSSSLLVQAICSVFNEV----
A9WUM9	AAAAEDGGRDTESSL-ARKGRASYLGER-SVGHRDPGAQSSALILRDAANTARTAL----
A9W9R1	AAAAEAGAKATIPML-AMKGRASYLGER-SIGHQDPGATSTAYLLRALAMTCSRNEEEA-
D1C9M9	AAAARTGMEATIPML-ATKGRASYLGER-SIGHQDPGATSSYLIVQAIADVRENSG---
D2B9Y6	ASAALAGSEATVPMQ-ARKGRASYLGPR-SVGHEDPGAASSTALILAALRTVVTR-----
D1B6Y5	VSAAEEGMKSTIPML-AKKGRASYLGER-SVGHQDPGATSAYLLLSCLEAVVA-----
A0A140NCI1	SSIAESAAQSTITMQ-ARKGRASYLGER-SIGHQDPGATSVMFMMQMLALAAKE-----

C3PGU3	ADAAAAGAEATIPMV-ATKGRASYLGER-SAGHKDPGATSSALFIAAADATETLKEEA-
A9G640	AEAAQAGALATVPLI-ARKGRASYLGER-SAGHQDPGATSCSLLLRSLAATAGV-----
A3CK11	G---SLVEATKDLK-ATKGRASYVGER-SIDHIDPGSASSGLLFEALLETEAG-----
B0K761	ANAAKEGMEYTKNIS-ARKGRASYLGER-SIGHLDPGATSAYLMIKSFSDVVNLS----
Q72DE9	VDAAGEGMRATIPMQ-ARKGRASYLGER-SIGHQDPGATSTVFMLTALRDVVRG-----
Q9CIV7	KDNLEKVVKASAGLL-ATKGRASYLGER-SIGHIDPGTQSSAYLFETLLEVVA-----
Q6NEE0	AAAAAQGAADTEPMV-ATKGRASYLGER-SVGHRDPGATSSAYFLQAAADAASEGTA---
C6WHH1	AAAAEGGARATVPLV-ARKGRASYLGER-SAGHMDPGARSTALLLGALARVAAG-----
C8XFT9	ANDAAMGAAATIPLQ-ARKGRASYLGAR-SIGHQDPGATSTAYLLEALAAVAEEKAP----
D7AWT1	AEAAREGADGTSELL-GRRGRTSYVGEA-ALGSPDPGAVTVALFYRAAQGVVGV-----
D1BZN2	AAAADAGSTATIPLV-ATKGRASYLGER-SAGHEDPGARSTALLLAAAVAAAEQ-----
A6X6C1	LEVAEKGTDSRSMV-ATRGRAARLGER-SLGHVDPGAASAIILRAMRDSFTEAN----
E1R8P9	VEAAEAGLASTIEMV-AKKGRASYLGER-SKGHQDPGATSSYYLLKAALETWK-----
E2Q762	AAAAAEGALATVPMR-ARKGRASYLGER-SMGHQDPGATSSALLVAALAEERTEGEAP-
B7KD17	VATAEQAMKNTIPLM-AKKGRASYLGQR-SIGHQDPGATSCYLILKTLGETVEG-----
A5N619	RNAAFIGVKSTESII-CKNGKASYLGEK-SIGYPDPGATSSYLMLNAIYEKVKELCAVEK
Q1H2B4	QQAAEQGMLSTKDMV-ATKGRAAFLGER-AIGHIDPGARSSQIIIHTIAELAKQQAV---
E3J2C4	AEAARGGALATEALR-ARRGRASYVGDV-ARGVLDPGALTVALFFDSCHG-----
Q87SQ7	VELAETNAVATIEML-AKKGRASYLGER-SIGHQDPGATSSLLMIKALQQAIAGN-----
Q881Q7	KNAAAQGRDSTKDLM-AKIGRASRLGER-SVGVLDPGAVSCCLILTQLADSVQPRLKAG-
Q8RHZ7	IEVAKNSMEATKDII-ATKGRASYLGER-SVGHIDPGAMSSYIMIKTVCENI-----
Q8EW70	DAKAFEGKESTQNII-ATRGRASYLKDR-SLGSLDPGSVSSYLIINTIYKSLSGE-----
Q89PB0	RTTAAEAVERTAPMQ-ATKGRASFLGPR-SVGHVDPGARSSCVLVQAVCASLEGQQ----
C6BY70	LPVGEKALADTIPLQ-ARKGRASYLGER-SIGHQDPGATSSYYMLETLKEVLS-----
H0TUV4	ATVAREAADATVPMK-AIRGRASFLGER-SIGHMDPGARSASLLVQAVCNVFNEA-----
Q313B6	VAAAEKGLEATVPMQ-ARKGRASYLGER-SIGHKDPGGASSCMMLGALRQSIGG-----
Q32H07	SSIAESAAQSTITMQ-ARKGRASYLGER-SIGHQDPGATSVFMFMMQMLALAAKE-----
C6WWI2	MQTAEEGMLATKALI-ATKGRAASLGER-AIGHIDPGAKSCQLMINAVCNQVLASQL---
C6XCW2	KAEEKGM LATRDML-ATKGRAAGLGER-AIGHIDPGAKSCQVMIHAVCDMLLGQAH---
A0A094YZF9	RATAESCMKATEILE-AKKGRAAYLGKR-SVGHIDAGAYSSYLLFLSLAETLAKRGE---
F4XFL5	AQAAQEGAKASEQFV-SKFGRRARSYKEQ-TIGTPDAGAVSTALFFRGLAQGI-----

B5HKC0	REAAEQGASDTVPLQ-ARKGRASYLGER-SIGHQDPGATSSALLLAALADTAEGAA----
I2F888	ATKAEEGAESTKTIV-ATKGRARYLGVR-SIGAYDAGARAVAVILSDIQKNFFNKTN---
I6RZA4	E----EAKEHTKDLV-AKKGRASYLGER-AIGHIDPGAASSAIFFETLLTNIES-----
A3YTX8	RAVALEAAEATKPLR-AQRGRASFLGER-SIGHVDPGARSCALLVAAVTDVLEAPESAP-
J0MWJ2	AAAADAGRAATESMR-AMKGRASYLGER-SIGHIDPGASSTALIVRALADVVDGCAS---
E5BF30	KTVAKQGMESTKDII-ATKGRASYVGER-SLGHIDPGAASSYMMIKVICEEIK-----
F3NT86	GAAAEEGAVGTTPLR-ARKGRASYLGER-SIGHQDPGATSSALLIGALKEARGE-----
E0QM99	GKAARAGAEATTPLL-ARKGRASYLGER-SVGHQDPGATSSAYLFETLAKVVS-----
C4IDX1	IKKAKEGMENTKNII-ATKGRASYLKER-SLGHKDAGATSMYLILNTIVEKSI-----
I9GRJ3	AEAALKGAAETVNMK-ANFGRARNYGER-SIGYADSGASSWSCMFDAFAKALL-----
H0HYA5	ADIADQAAEATKPLK-AIRGRASVLGDR-SIGHMDPGARSSALITRAIAGTLEPRV----
F3B1P8	KKAAIDGANETAKME-AVKGRATYQADK-GVGHLDPGAVTMSYQLVCLMEAVEEKL----
G5K1Y5	KDAVEEMVLATKAIQ-ATKGRASYVGER-SVGHIDPGSFSSGLLFEAMIEAEVI-----
F3PPM2	AEAAIAGAESTLEMK-ANFGRARNYGER-SIGHIDSGAASWSCMFASF AEALN-----
F5T169	KTAATQGMQSTKDM L-ATKGRASFLGER-ARGHIDAGARTSQLILCVIADELSKI-----
H3NBU3	TDDLAQLAEDTKELK-AKKGRASYLGDR-SVGHIDPGAMSSVYFFQALVEAEAVK-----
G9PIG6	ARAAADGARDTEPLQ-ARRGRASFLGER-SCGHRDPGAQSSALIFQAALDAARACSLEPI
A6EMJ5	VNEAEKGMKSTVNMI-ARKGRASYLGER-SVGHQDPGATSSYFILKALKESIN-----
W0IW11	TEAADRGRDSTKDLV-AKLGRAARLGER-SRGVLDAGATSCALILKTLARAFGANP----
C7HTR7	LKIAQEKMEKTKEIK-ARKGRAAYLGDR-SIGHIDPGAYSSYLCIKSIVGDLND-----
H0QJK9	AEAAEAGAVATDPLV-ARKGRASYLGER-SAGHRDPGAASSALILRAAAGAAA-----
A4AIN0	LAAAEKGRDSTEPLV-ARKGRASYLGER-STGHLDPGATSSSTLLFQALADTVTS-----
F0Z4L2	KKAAVRGRDSTKELI-AKFRSSRLGER-SRGVLDAGACSCCIILTAMADGILELL----
K0YPL4	SEAAHKGALATEPLQ-ATKGRASYLGER-SKGHLDPGAVSSAILAKALEAAEVE-----
I8UJC4	T----QALQTCQALS-AKKGRAAYFGDN-AIGKQDPGAQSSALLLRPFAEVM-----
C8PCR8	TEKIEAAVLATKDMI-AKKGRASYLGER-SINHIDPGSQSSGYLFESLLEVINNK-----
C2L0R3	ALAAEKGM EYTKTIK-ARFGRAKYFGDK-AIGLQDAGATSVYIIFQAMSDFLKGEKN---
D9X7S5	RTAAEEGAVATTPLL-ARKGRASYLGER-SIGHQDPGATSAALLVAGLVEASGE-----
C6PVN6	KDSALKGVLHTKEII-AKKGRASYLGER-SIGHQDPGATSSYMLNNTIYECIKEISQK--
G2GMN3	RAAAEEGAVATTPLR-ARKGRASYLGER-SVGHQDPGATSAALLIAALGEAGDE-----
D0GNQ9	YDKAAKGSENTKEMK-AVHGRAAYHDEK-TLGHIDGGAYVGKLIFEGIYNFYKTK-----

G6FMN8	VAAAEKGMQDTPMQ-AKKGRASYLGER-SVGHQDPGATSVYMLQSLLDVIS-----
E0NGR7	AEDVDRAVESTKPMI-AKKGRASYLGER-SVGHLDPGAVSTGYLLKTLLAVEAK-----
C6JM61	ELKGKAGMESTKNIA-ATKGRASYLGER-SIGHLDPGSVSSYLIKTINDELKG-----
D6U6Y4	SSAAEAGMKSTIPLL-ATKGRASYLGER-SIGHQDPGATSSTLMLQALAETYR-----
G3ITN9	ARTAIAGMESTRDML-ATKGRASFLEER-SRGHIDAGAKTSQLMICALVDVLAKHLTAPA
E6MJW9	EDAAWKGVAYTKTII-ATKGRASYLGER-SIGHQDPGATSITYMVQAARAVAEAK-----
C0W3K3	ARAAQEGRGATAAMR-ATKGRASYLGQR-SVGHIDPGAASTALVLQALQAETATSQEEQ
C8NCE6	ARTAQEQAEATIPLV-AKKGRASYLGER-SAGHKDPGAASSALLQCLAEAV-----
E8LGV2	GKAAAEAGAEKTADMV-ARFGRAKNVGER-SLGTKDPGATSISILLTAMAAAI-----
H5X503	ADADEGARSTVPLV-ARKGRASYLGER-SVGHLDPGARSTALLLRAFADAAR-----
A6DNZ7	HQAALEGIEVTKTLV-ANKGRSRYAGER-GLGHQDAGATSVTLIIKCFAEQATKEA----
B1FVY6	PQVAEQNMLATRDML-ATKGRASFLGER-SRGHIDPGARSSQTMITAVCAHLARNPV---
F9QEG7	LKVAYDSKELVKNKP-ATKGRASYLGER-TIGIVDPGSQSMYYILETLVENYND-----
I1D5G2	ADAAEEGANSTKPLV-ARKGRASYLGER-SIGHLDPGARSTALLLRAFAEVAQ-----
H8GRD8	VRTAEAGVEATRNMML-ATKGRASFLGER-TLGHLDAGAKTAQLMISAIAEALASSAAPT-
E3CX22	VAAAEQGMTSTIPLV-ARKGRASYLGER-SAGHQDPGATSTYLLLNCLRAAALGES----
G7M3Z5	KEAAYKGVEHTKEII-AKKGRASYVGER-SIGHQDAGATSSAIMLETIYEAL-----
B1CB33	LQASMDGVEYTKTIK-ATKGRASYIGDR-SIGHQDPGATSFTYMMECINDII-----
G4CVL8	AEAANEGRDATIEMV-ARRGRASYLGER-SRGHQDPGATSMAMLVGSAARCLSGAES---
F9EGT1	AAAADAGRTATGPML-ATKGRASYLGER-SVGHIDPGAASTALLLRALAEVMGGRAS---
I8TY96	CEAAQQGVEFTKTII-ATKGRASYLGER-SRGHQDPGATSSYIMLKALLEHLRRQ-----
G5IBQ9	KEAAVRGAKESEQYI-SKFGRAKSYKEQ-TIGTPDAGAVSTSLLFVGLCDGFRES-----
G5KIC1	IEKIKNVVEATKDLK-ATKGRASYVGER-SIGHIDPGSYSSGLLFEAMIEAEVD-----
F9ELQ8	IEVAKNSMEATKDII-ATKGRASYLGER-SVGHIDPGAMSSYLMIKTVCENI-----
A8RYY3	VRAAWAGAEHTKDLV-ATKGRASYVGER-GLGHQDPGATSSYMLEVIAGLV-----
G8TSR2	ARHARIWAEATIPT-ATKGRAAYLGPR-SQGHLDPGALSSAIWWECEWLEEGVAR-----
G8S8S8	AEAAAAGAAATVPLR-ARKGRASYLGER-SIGHQDPGATSTSLIFQALAAVS-----
G8PBG1	SKLIDESVEKTRDMQ-ATKGRASYVGER-SIGHIDPGSMSSGYLLKTLLKVGE-----
F7KPB8	QECAEKGKESTKEMV-AMYGRAARLGER-SRGVLDAGATSCCIILKAMADGMKKVLE---
G8QU73	SLAAQKGYEATVGML-AIHGRAATRGEA-SRQLLDPGAAVAALLMKAFVALQ-----
D4E0S0	AECAQQAVEATIAMQ-ARKGRASYLGER-SIGHQDPGATSVMLMVKTLAEIAA-----

F1T4X2	CDSIKALVDATEPLR-ATKGRASYTGER-SCGHIDPGAASSGMLFCALLEQGV-----
I4BYG6	LDMAEKGMKDTIPLV-ARKGRASYLGER-SAGHQDPGATSSYLILKAICEALGV-----
J9Z1A9	VQVAEKGMLSTKDLL-ATKGRASFLGER-AKGHIDPGARSSQLMIKTVCESVIQK----
F9ZQA6	AEAARQGLAATIPLI-ARKGRASYLGER-SRGHADPGAASASLILECLAGDDASTS----
I1A7E4	D----QLVKKTENMV-ATKGRASYLKER-SLGTIDPGSFTSSVILKHLIKEL-----
C9MZ82	SDAATKGSEATKNMM-AVHGRAAYHGEK-TIGHVDGGSYVGKLIFEGIYNYYKEKAELY
K0K2T4	AEAAEQGAESTVPLV-ARKGRASYLGER-SAGHLDPGARSTSLLLRSFAGGAR-----
Q49VJ6	Q----SYADMTKDIE-ATKGRASYFKED-SKGHVDPGAQSSVYILNALIGDES-----
Q5FJ65	EDKIKDAVEATKDMI-AKKGRASYLGER-SKGHIDPGSESSGYLFETLLETEGLL----
I3D7P6	VKKAKISLEATIPLV-AKKGRASYLAER-SVGYQDPGATSTMYMLEALYQAVK-----
I4F4L6	AAAAGAGRDATVPLV-ARKGRASYLGER-SAGHQDPGATSTALLDAAVTALSRGEG---
Q1WRP5	QADIDAAVESTKDMV-AKKGRASYLGER-SVGHLDPGAVSSGYLFTALLEAGVM-----
D7A0Q6	AECAQSAARATEMML-ARRGRASYLGER-SVGHEDPGASSCALLTTTICLYLKEHAAP--
Q1AX45	AEAAGEGAEATVPLT-ARKGRASYLGAR-AAGHKDPGAASTAYLLAAAAARAVEGS-----
A4FMZ5	AEAAHVGAQATEPLV-ARKGRASYLGER-SAGHIDPGARSTALLLSAFSEAARGGR----
D6ZIF3	ADAAAKGAEDTVSMS-AAKGRASLLGER-SIGHKDPGATSSALILAEAAKAAAH-----
Q60CU3	SRAAEAGMESTRDML-ATKGRASFLGER-AIGHVDAGARSSQLMISAIAEVVAESAW---
A8LNW4	AEAVDRALEDFRDKP-ATVGRARIFGEK-SIGLDDPGMLAMQSVVRAAVDK-----
F2N7D3	IALAEEKCESTRDML-AKKGRASYLKER-SIGHLDPGARSCSLLIEVMCQQLEKKEAAHA
F2R6Z8	RAAAEEGALATVPLR-ARKGRASYLGER-SVGHQDPGATSSALLFAALDETAGAESPEVP
E3DLJ7	KASAEEGMKATIEMQ-ATKGRASYLGER-SIGHQDPGATSTYLIKTVVDELY-----
E3G7K1	TDVAEAAAHAATIPMQ-ARKGRASYLGER-SIGHQDPGATSVLFMMQMLTAAARE-----
E3GPD1	EAAAWDGVYTKTII-ATKGRASYLGER-SIGHQDPGATSITYLIQAAKEAGEQAGA---
E3H7Q4	VIAARDGVYTKTIK-ATKGRASYLGDR-SIGHADPGATSTKLILEAILEVL-----
K2QR18	ETVAEEALEATKSMV-AQHKGAAAFQEK-TVGLQDAGATVGFFLIRRMSQFAANH----
H6LKL8	EQAAWEGVEYTKTII-ATKGRASYLGER-SLGHQDPGATSMAYVFQAAKEVALKAGN---
J2ZU17	T----DAVQATEPMK-ATKGRASYVGDN-SIGHLDPGSVSSGYLFSSELLKAGVTA----
J2VAZ1	GKAAETGAEATKAMI-ASKGRSARLGER-AIGHIDPGAASAILIRAMGRGLG-----
K2N9I0	QRAANDALDQMRPMP-CRIGRARMFAER-SIGSDDPGMLAVAKLLD-----
I0JQA6	LDTAQSTMESTKDLV-ATKGRASYLKER-SKGHIDPGAMSSYYVFEALADCIKGDE----
E4RNI0	KAKAEEGMKATIPMQ-ATKGRASYLGER-SIGHQDPGATSSYLMIKTVVDELYKYKD---

F4CPQ6 AAAAAAGRDATIPLV-ARKGRASYLGER-SAGHQDPGATSVTMLVAAAADALA-----
 A0A0H3GYP2 CEVAERAAHATITMQ-ARKGRASYLGER-SIGHQDPGATSVLFMVQMLAAAAKE-----
 F8JV61 RSAADEGAAATVPML-ARKGRASYLGER-SVGHQDPGATSAALLVAALASAAGAATGDAR
 I0I650 VAAAEAGMRATIPMQ-ARKGRASYLGER-SIGHQDPGATSTHLILLALADALADKDAKSA
 I0HCV6 AVAAREGARATAGLL-ARKGRASYLGER-SVGHQDPGATSAALLFRALSEQTGNSG----
 F5X6F7 IDRINEYVQATSPLK-ATKGRASYVGER-SIGHIDPGAFSSGLLFKALIEAEE-----
 F5XQ38 AAAAAQGRDFVTPLV-ARKGRASYLGQR-SADHQDPGATSAVLLIQAAATALGSPAN---
 C5BWZ3 ASAAQEGAVATEPLV-ALKGRASYLGER-SAGHRDPGAESTALLAAAAARAAQEAA----
 D2PZT9 AEAAAQGRDATVPLV-ARKGRASYLGER-SAGHQDPGATSTTLLESAARTLG-----
 K4RFM8 RAAAEEGALATIPLQ-ARKGRASYLGER-SIGHQDPGATSAALLVAALAEANGE-----
 A8AFT8 SAQAEAAAQSTITMQ-ARKGRASYLGER-SIGHQDPGATSVMFMMQMLAAAAKE-----
 B7UQ88 SSIAESAAQSTITMQ-ARKGRASYLGER-SIGHQDPGATSVMFMMQMLALAAKE-----
 E0U9C1 VTTAETEMKNTIPLV-AKKGRASYLGPR-SAGHQDPGATSCYLILKALLETVKDDS---
 Q73K63 EKIAKEGSDSTRNMK-SVHGRAYYAEK-SIGILDGGSYAGYLVFKALNNYLKDK----
 A0A0H2YY24 SSIAESAAQSTITMQ-ARKGRASYLGER-SIGHQDPGATSVMFMMQMLALAAKE-----
 A0Q3F2 KDAAFKGV EHTKEIV-AKKGRASYLGER-SIGHQDPGATSCALILESIYEEVKKLQ----
 D3F3G8 ASAADAGADATIPLL-ARKGRASYLGER-SVGHLDPGAVSSALLLRTAADAWGESTE---
 D3R2L5 KQVAADGAEATKGME-AVKGRASYQKNK-GVGHLDPGAVTMSYQIGVLC DVISKEIKAE-
 F4BL99 SSFIDETVEKTIDMK-ATKGRASYLGAR-SIGHIDPGAMSSSYLFKTM MKAGVYDE----
 F4F7H7 ATAAEQGRDATAAMV-ARMGRGSYLGDR-SRGHIDAGATSMAMLLRCLHASAE EVTS---
 G4T0K8 CDTANQGMEATR DML-ATKGRASFLGER-TRGHIDAGAKTAELMICAIATVLAK-----
 F4H6I8 ARAATDGAQATIPLV-ATKGRASYLGER-SAGHLDPGARSTELL LAAAAQAAA-----
 K6UNQ1 ADAAAQGRDATTPLV-ARKGRASYLGER-SAGHQDPGATSTAMLLAAAAKAFSA-----
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 Q2G0E9 Q---QLADNTKDMV-ATKGRAAYFGEE-SKGYIDPGAQSMVYILNALIGDEDNA----
 F9ZY89 CAAAEAGVESTRDML-ATKGRASFLGER-SKGHIDAGAKTAQLMIEAIARQIRSAA----
 E6SH85 ARAARQGSDATIPMV-ATKGRASYLGER-SRGHRDPGSLSATLMMEAAAETLPGGTEA--
 F7V0N8 AAAAAEAGAKASEGFA-SKFGRARSYGEQ-TIGTPDAGAVSTSLFFCGLADGARS-----
 D4MT14 TRAAEDGVEYTKTII-ATKGRASYVGER-SIGHQDPGATSFTFMMETVEEAL-----

A0A8B1NT48 AAASEKGALATVPML-ARKGRASYLGER-SIGHQDPGATSSALLLAALAEVAK-----
 A0A0H3MXE5 TEIIHKAVQGTKDIA-ATKGRASYVGER-SIGHIDPGSFSSGLLFEAMLEAGL-----
 I1YIS9 QQAAEQGMLSTKDML-PTKGRASFLGER-ARGHIDAGARTSQLILSAIADEVIQNQ----
 F5YG98 KTAASGWESTKDME-ARFGRSSRLGER-SRGSVDAGATSCKIILKAMADGILEVAR---
 F6EM32 VTAANAGRDATIPML-ARKGRASYLGER-SVGHQDPGATSAALLITAAARAFG-----
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 K9ETT1 D----QIVEKTKEMK-AHKGRASYLGDR-SIGHIDPGAMSSKYLFEAFIKGGVFD-----
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 K9CFB7 LSAGREGAEYTKTIV-ARRGRAALIGER-SIGIEDPGAMSSLIMFRALCSYLRG-----
 G0VNU3 AAAAEKGV EYTKTII-ATKGRASYLGER-SLGHQDPGATSSLYLLQVLAEMA-----
 D7UV97 DDVVEAALQKTKDIK-ATKGRASYLGER-SIGHLDPGAYSSALLFHTMLETEVD-----
 C8RYK0 RMAAEQARETTVTMI-AARGRASRLKER-SLGHLDPGGASAAIILAAIADTLASAA----
 K8WHA8 VDAAKQGVESTIPMQ-ARKGRASYLGER-SIGHADPGGMSVFLMLETLQKAI-----
 E6LEU6 Q----EYVQASADLK-ATKGRASYVGDR-SIGHIDPGTCSSGYLFEALLEASK-----
 C0W168 ALAARAGAEATLEMK-ATKGRASYLGER-SIGHLDPGSVSSAIIFEQAVKAAKAGA----
 M4U7Q4 CQRAEEAVTRTIEMQ-AKKGIASYLGAR-SVGYPDPGATSTLLILKALKKAQLES-----
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 K9TAS4 VAAAEQGMKDTIPML-AKKGRASYLGER-SIGHQDPGATSSYMLKSLLAALCES-----
 K9U7Y7 VIVAEQAMKDTIPML-AKKGRASYLGDR-SIGHQDPGATSTYMLKSLLAALCES-----
 L1L3V1 RSAAEEGALATTPLQ-ARKGRASYLGER-SIGHQDPGATSAALLIAALADTAQAPAASEA
 L0RXD0 Q----YLVAQTKDMM-ATKGRASYLKER-SIGTIDPGSFSTGIILKNFLKEL-----
 K9WJ60 VSAAEAGMKSTIPLV-AKKGRASYLGER-SSGHQDPGATSTYFILKALLDTVNTH-----
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 K9XI13 TTAAEQGMQATIPML-AKKGRASYLGDR-SINHQDPGATSVYMLQLTLSEVLDMTSD---
 K9VA65 VVAAEQGMKDTIPMI-AKKGRASYLGER-SIGNQDPGATSCYIMLKCLCDALQK-----
 L5NDP0 KEAAETAMEATESLQ-ATKGRASYLKER-SVGHLDPGAVSSFYLFELASVEGAE-----
 L0EJ60 AEAQKGAERTASMQ-SRHGRASRYLER-SIGHQDPGATVGALIVQGFADYVNKTSSAQ-
 F4LS03 IDTARKGAESTIDMI-AKKGRAMRLGER-SIGHLDPGAASSTMILEVFADCFPC-----
 L7FGQ5 RTAAEEGALATVPLQ-ARKGRASYLGER-SIGHQDPGATSAALLIATLAETAGE-----
 L0KF84 ANVADAAA EATVPMK-ALRGRASFLGDR-SIGHMDAGARSTALLVRTLAQIIGGKA----
 F4EWM0 AVAAEKGAERTKDLV-ATKGRASYLGER-SLGHDPGAVSSSFMLRAMADAM-----

L8TMK9	AEAAEAGAVATDPLV-ARKGRASYLGER-SAGHRDPGAASSALILRAAVGAAA-----
M3BS32	RDAAREGAVATTPML-ARKGRASYLGDR-SIGHQDPGATSAALLVSALLEAGPGDGEAGG
K2FJ00	VEVAEQAMEGTKDTV-ATKGRAAYLQDR-SKGHIDPGSTSSFYLFQALADVWKEGE----
G9QI21	KETIQEAVNQTKDMK-ATKGRASYLGER-SIGHLDPGAVSSGYFFEAMLEGGILNE----
M7NIQ8	VDAAKAGMESTKDLL-SKRGRSSRLGDR-SIGAQDPGATSAYLIVSKFQEYLQGELAQAK
M7PNV0	QQSAITGMESTKDML-ATKGRASFLGER-ARGHIDAGARTSQLMLCAIADEVIKYNN---
M5DZ01	KIKAEEGMKATIDMQ-ATKGRASYLGKR-SIGHQDPGATSSYLMIKTVVEELY-----
N4WJ21	TNAANEGVEKSKEYV-AKFGRAKTLGER-AIGYQDAGATSVWIIFDSMTNWWVENHVK---
C9ABG8	E----AAKEHTKELV-AKKGRASYVGER-AIGHVDPGSASSAILFDSLLTVIEKN-----
M9WI92	VDLAYKQALYTKTII-AKKGRASYLGQR-SIDHIDPGCWSAFLILETIKENI-----
N6XD13	AAAAAEGAAATEPMK-ATKGRASYLGER-SIGHLDPGAMSSSIILAKALEAAKKA-----
N9VEI0	MEGAANGAKRTKEME-AVKGRASYRSDK-GVGHLDPGAVTLAMQLECMGNMILNTLK---
R4KG11	FDAARHGVENTKQLK-PVFGRAAYYRDK-PLGTPDSGAVAIMFVFKGIKEGLNK-----
R4LHW9	VTAAEQGRDATIPMV-ARKGRASYLGER-SAGHADPGATSAAMLLTAAATALSGQD----
R2SJE3	D----EIVEKTKEIK-ATKGRASYVGER-SIGHIDPGAMSSGYLFSMMEAGVFK-----
R2Q950	SEVIEAAKEHTKDLV-AKKGRASYLGER-AIGHIDPGAASSGILFKTLTLDTIKD-----
R3TPV0	IEVMKKGAESTIPLV-ANKGRAMRLGER-AIGHKDPGSESSWMLMDIFNKNLKVRSI--
R4UJY9	ALAAQEGAEATITML-KTKGRASYLKER-SVNHMDPGAKSVSLIFEAVSEALQ-----
R4T9Z9	ADAADKGAESTVDLV-PRKGRASYLGER-AKGHMDPGARSTALLRAFAEAAQ-----
S1P0N7	VEKITAAKEATKDLV-AKKGRASYLGER-AVGHIDPGAASSALLFTTLLTYI-----
R9KQ22	CEAAKEGVEYTKTIR-ATKGRASYLGDR-SIGHQDPGATSALITLEAVRAFYLEQVK---
S0FK13	AVSAVQGGEKTRSYV-ASKGRASYLGER-SLNYPDAGAVAIGVIFTGISKKIEDILK---
S0J6Y9	CDAAKEGVEFTKTIR-ATKGRASYLGDR-SIGHQDPGATSSLITLEAIRAFYLENIK---
R9IRK6	CKAAKEGVEYTKTIR-ATKGRASYLGDR-SIGHQDPGATSSLITLEAIQTFYLENIK---
S3B602	RAAAERGAEETTPLQ-ARKGRASYLGER-SVGHQDPGATSAALLVAALAAAHGDNAGEDA
S2XG65	Q----ALADATRDIE-ATKGRASYFKKE-SLGYVDPGAQSSVYILNALIGDEKK-----
S2YZ61	GTAAEQGALATTPLQ-ARKGRASYLGER-SIGHQDPGATSSSLLVAALAEADGE-----
S2W6B3	QEAAEAGRDATEPMV-AHKGRASYLGER-SAGTIDPGSASATMLVSALASA-----
S3X4B0	ARRADSSRLQTADMI-ASKGRAAFGLTR-SLGVDPGATSASWLMAAGAEVMPSS-----
S4AMF0	RAAAHEGALATTPLQ-ARKGRASYLGER-SIGHQDPGATSSALLFEALAETAEEAAHE--
R7RQ76	VNSAKLGMENKTNIV-ATKGRASYLGER-SIGHLDPGAVSCYLILKTIFEEVKKIKG---

S4MG33	RTAAEEGAVATTPLQ-ARKGRASYLGER-SIGHQDPGATSAALLVAGLAEAAAGE-----
S9SCC0	LRTATEGAEATRAMT-ATLGRAERLGAR-AVGHPDPGAVSALMLIEEILARIVPPPAD--
S9S516	LRAADETLEDFRDRP-NRIGRARMFADR-TVGMDDPGMLAFHRLLRVTGAEVPHA----
S5VBA9	RAAAEEGAVATTPLQ-ARKGRASYLGER-SIGHQDPGATSSALLIAALQEAAASGA-----
T0TK32	KENLEKVVKASAGLL-ATKGRASYLGER-SIGHIDPGTQSSAYLFETLLEVVA-----
S0LAM8	EEKITAYVHHTKELV-AKKGRASYLGER-AIGHIDPGAQSSGYLFETLIK-----
T5KTF2	ADAAAAGRDATLPLV-ARKGRASYLGER-SAGHLDPGAASTAILFDTLAAAVADTA----
U1GE01	AQAAAQGRDATVGM-ARRGRASYLGER-SKGHDPGATSLALFIESAARCLPVQV----
U1MTZ3	AAAAAEGAVATEPLV-AHKGRASYLGER-AVGHRDPGAESTALILAAAAETT-----
U1N326	--KLDQLVGATEDMV-ATKGRASYFGEN-SRGTVDPGALSSSIVLKAIMKEVE-----
U2T4X1	-----
U2TE92	FEAAKEGVEKTKTMQ-SVHGAAAYYREK-SVGRQDPGATAIMYIVRGIAEGVR-----
U2TIQ4	VEGAKAGVEATKDMI-PKYGKAAVFAAK-AKGIADQGAVAGCYLDTAILNYFQAKSA---
U2UUY7	KKAAEEGAENTKKME-AVRGRASYQADR-GLGHLDPGAVTMSYQLVTLMDFAAEKSREK-
U2N6F3	KEAAYNGVEYTKTII-ATKGRASYLGER-SIGHQDAGATSSAIILETIYEAIQ-----
U4VFA1	VLAAEKGRDSTIDLV-AKIGRASRLGER-SLGVLDAGATSCAILKELSDGARVRFQ---
U5F6K8	AKGAEAGKESTKDLV-AKIGRAARLGER-SRGHLDAGATSCWIILTMANAMLAQLQSQE
U4K1X7	EEAAKAGAESTKDLV-SKIGRSSRLGER-SVGVLDAGAVSCSLILSQAQSTISRLQS--
U7VCP6	QITAKDGMESTENML-ATKGRASYLGAR-SIGHIDPGAMSSYLIIDTICKNLK-----
U7UHV1	VAAAEAGVAYTKTIA-AAKGRASYLGER-SIGHQDPGATSSLFMLQVIAGHIA-----
U7UNX5	KNAAINGAESTKDMP-AIRGRASYQKDK-GIGHLDPGAVTMAYQIELLCDYILNNKIGK-
U5MP41	IDAAKKGMENTKNII-ATKGRASYVGER-SLGHQDPGATSMYIILCTIAEELKF-----
V2YGV3	AKAAAEGAEASKQFV-SKFGRAKSYGEK-TIGTPDAGAMSMYSYFFQGLAQS-----
U5T5E1	KAAAMAGRDSTQDMI-ARIGRSSRLGER-SRGVLDAGATSCCMILCILDVNVSRRLA---
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U5VX81	VKAAEEGTAATIPMV-ARKGRASYLGER-SAGHDPGATSMTMLFTAAATTLSGEG----
V7IAM1	KRGAVEGMEATRGME-AVKGRATYQTNK-GVGCLDPGAVTMCYQLELLADCMKP-----
A0A084A2U3	AVRAEQAAQATITMQ-ARKGRASYLGER-SIGHQDPGATSAMLMMQTLAEVVGAAG----
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V6KYB2	GRAAADGAS-----
V6JJD1	RAAAEEGAVATIPLQ-ARKGRASYLGAR-SIGHQDPGATSSALLIAALEEAAEG-----

V6Q9X7	AEAIASFAEETKEIK-ATKGRASYLGER-SIGHLDPGAVSSQYLFETMLEAEVI-----
V2Y558	KKAAKDGADSTSNME-AVKGRATYQADK-GIGHLDPGAVTMSYQISELMNIAKERII---
G9WKH9	AEAAKKGMEYTKTIK-ARFGRAKYFGEK-AIGLQDAGATSVYIIFQAMADFVKGEEQ---
V7EEK5	ADAAAQGAAATAAMR-ARRGKSSYVGDR-SIGTVDPGAASVALLFAAMAQIGAPAP----