

Supplementary Figure 1. Alignment of the C-terminal domains of 251 Proteobacterial SSB proteins. The alignment was done using PRALINE (Simossis and Heringa, 2005). The numbers above the sequences correspond to the numbering in the alignment using methionine 110 in the E.coli sequence as position 1. The consistency or conservation score is a value out of 10 and is indicated at the bottom of each sequence group. In the alignments, 10 appears as * to maintain spacing. In the alignment shown, the sequence of the C-terminus divided into 2 sections with the E.coli SSB (P0AGE0) occurring on the first line of each (pages 1 and midway down on page 4).

Unconserved 0 1 2 3 4 5 6 7 8 9 10 Conserved

	10	20	30	40	50								
sp_P0AGE0_SSB_E	MQMLGGRQG	GGAP	AG	GNIGGGQP	QGGWGQPQQP								
sp_P0AGE3_SSB_S	MQMLGGRQG	GGAP	AG	GNIGGGQP	QGGWGQPQQP								
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tr_Q3YUS5_Q3YUS	MQMLGGRQG	GGAP	AG	GNIGGGQP	QGGWGQPQQP								
tr_B7LL42_B7LL4	MQMLGGRQG	GGAP	AG	GNIGGGQP	QGGWGQPQQP								
tr_Q31TT7_Q31TT	MQMLGGRQG	GGAP	AG	GNIGGGQP	QGGWGQPQQP								
tr_Q327X2_Q327X	MQMLGGRQG	GGAP	AG	GNIGGGQL	QGGWGQPQQP								
tr_E3G2C8_E3G2C	MQMLGGRQG	GGAS	AG	GNMGGGQQ	QGGWGQPQQP								
tr_A8AN55_A8AN5	MQMLGGRQG	GGVP	AG	GNMGGGQQ	QGGWGQPQQP								
tr_Q7MZE3_Q7MZE	MQMLGGRAG	GGSF	QD	SQQSQGGG	WGQPQQPQQP								
sp_Q8ZJ06_SSB_Y	MQMLGGRQG	GGAP	AGGG	AAPQDGGA	QGGWGQPQQP								
tr_Q1CEA8_Q1CEA	MQMLGGRQG	GGAP	AGGG	AAPQDGGA	QGGWGQPQQP								
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tr_Q1C0V1_Q1C0V	MQMLGGRQG	GGAP	AGGG	AAPQDGGA	QGGWGQPQQP								
tr_B1JND3_B1JND	MQMLGGRQG	GGAP	AGGG	AAPQDGGA	QGGWGQPQQP								
tr_A4TRT5_A4TRT	MQMLGGRQG	GGAP	AGGG	AAPQDGGA	QGGWGQPQQP								
tr_D0JMW3_D0JMW	MQMLGGRQG	GGAP	AGGG	AAPQDGGA	QGGWGQPQQP								
tr_B2K1V7_B2K1V	MQMLGGRQG	GGAP	AGGG	AAPQDGGA	QGGWGQPQQP								
tr_Q66FF8_Q66FF	MQMLGGRQG	GGAP	AGGG	AAPQDGGA	QGGWGQPQQP								
tr_D0JDS4_D0JDS	MQMLGGRQG	GGAP	AGGG	AAPQDGGA	QGGWGQPQQP								
tr_E8NXJ4_E8NXJ	MQMLGGRQG	GGAP	AGGG	AAPQDGGA	QGGWGQPQQP								
tr_D5AZE3_D5AZE	MQMLGGRQG	GGAP	AGGG	AAPQDGGA	QGGWGQPQQP								
tr_A7FN86_A7FN8	MQMLGGRQG	GGAP	AGGG	AAPQDGGA	QGGWGQPQQP								
tr_A9ARS0_A9ARS	MQMLGGR	NSGGR	GD	SD	GHGGDGDFFEQ	GSRRQATAPA	ARQ	ASGQPP					
tr_Q5QWB9_Q5QWB	MQMLDSR	G	GPQG	GAPQQ	GQGFGGGQQQ	GGGYGGGQPQ	QQS	QQQQR					
tr_F6D9I3_F6D9I	MQMLGGG	N	R	QG	GQSAG	GMGSMGGDAY	DQSNYGAAPA	RPA	AASGGY				
tr_D0KVV4_D0KVV	MQMLGGR	G	G	SG	G	SGG	GQQESG	---	DY	EDDGYSTP	---	PA	RGAGRA
tr_C4L8J0_C4L8J	MQMLDGR	G	AGAP	QQGGN	MGAPAQQPQQ	GNWGRPSAPA	AAAPQGGATP						
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tr_A0KQ40_A0KQ4	MQMLGGRPQ	GGAG	QGMGG	Q	---	SQGNW	GQQQGMQSQQ	PMNQARPAQA					
tr_F4D7J5_F4D7J	MQMLGGRPQ	GGQG	MGQNM	GGQSQGNWQQ	PQQSMPAQQP	MNQ	QRPAPA						
tr_E6WHP7_E6WHP	MQMLGGRQQ	GAST	GGA	---	PM	GGQGGGNNNG	WGQPQQPQQP						
tr_C6CKS0_C6CKS	MQMLGGRAG	GGAP	AGG	---	NM	GGNMGGGNAP	QGGWGQPQQP						
tr_D2BVZ8_D2BVZ	MQMLGGRTG	GGAP	AGG	---	NM	GGNTGGGNAP	QGGWGQPQQP						
tr_E0SFA5_E0SFA	MQMLGGRTG	GGAP	AGG	---	GM	GNNAGGNPQQ	GG	WGQPQQP					
tr_F0KT99_F0KT9	MQMLGGRQG	GGAP	AGG	---	GAP	QDGGA	QGGWGQPQQP						
tr_E7AYX9_E7AYX	MQMLGGRQG	GGAP	AGG	---	GAP	QDGGA	QGGWGQPQQP						
tr_Q6LM83_Q6LM8	MQMLGGRQG	GGQQ	QQQQ	---	QQQGNWVK	PQQPAAAPQQ							
tr_D8MLY1_D8MLY	MQMLGGRQG	GGAG	APA	---	GGGGQGSN	NGWQPQQPQQ							
tr_E8XXD9_E8XXD	MQMLGGRAS	GGAP	AGG	---	GQPSAGGQ	QGGWGQPQQP							
tr_D0KLR8_D0KLR	MQMLGGRQG	GGAP	AGG	---	NAGGGQQ	QGGWGQPQQP							
tr_D4GHC5_D4GHC	MQMLGGRQQ	GGNA	PAA	---	GGGQGNNN	GWGQPQQPQQ							
tr_F2ERB9_F2ERB	MQMLGGRQQ	GGNA	PAA	---	GGGQGNNN	GWGQPQQPQQ							
tr_C9Y1E0_C9Y1E	MQMLGGRQG	GGAP	AGGN	---	MGGGQQQG	GWGQPQQQQQ							
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tr_E3DHH3_E3DHH	MQMLGGRAG	GGGA	P	---	AGGQGGGN	NNGWGQPQQP							
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tr_B7VI95_B7VI9	MQMLGGRAG	GGAP	AQG	---	GMGNNQQQ	GSWGQPQQPQQ							
tr_B2VKC4_B2VKC	MQMLGGRSQ	GGGA	S	---	AGGQNGGS	NNGWGQPQQP							
tr_D0FWM9_D0FWM	MQMLGGRAG	GGGA	P	---	AGGQGGGN	NNGWGQPQQP							
tr_D2T8I8_D2T8I	MQMLGGRAG	GGGA	P	---	AGGQGGGN	NNGWGQPQQP							
tr_B6EM65_B6EM6	MQMLGGRGQ	GQGA	PAG	---	GQQQQQQG	NWGQPQQPQAQ							
tr_C6CA59_C6CA5	MQMIGGRAG	GAAP	AGGG	---	MGNNTTGN	PQQGGWGQPQQ							
tr_E1SAY5_E1SAY	MQMLGGRQQ	GGNA	G	---	APAGGGNN	NGWGQPQQPQQ							
tr_G0DZA5_G0DZA	MQMLGGRQG	GGAP	AGG	---	GQQ	QGGWGQPQQP							
tr_A6TGW7_A6TGW	MQMLGGRQG	GGAP	AGG	---	GQQ	QGGWGQPQQP							
tr_D5CCK4_D5CCK	MQMLGGRQG	GGAP	AGG	---	GQQ	QGGWGQPQQP							
tr_G2S0J9_G2S0J	MQMLGGRQG	GGAP	AGG	---	GQQ	QGGWGQPQQP							
tr_D3RG46_D3RG4	MQMLGGRQG	GGAP	AGG	---	GQQ	QGGWGQPQQP							
tr_B5XXX3_B5XXX	MQMLGGRQG	GGAP	AGG	---	GQQ	QGGWGQPQQP							
tr_C6DE92_C6DE9	MQMLGGRQG	GGAP	AGG	---	GQQ	QGGWGQPQQP							
tr_B2AGW6_B2AGW	MQMLGSRQG	GGGG	GG	---	DEGGYGGG	GGGGYSRESS							
tr_D0ZFE3_D0ZFE	MQMLGGRQG	GGAP	MGNQ	---	GQQGGWGQP	QQPQPSQGA							

Results colour-coded for amino acid conservation

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tr_Q5E7Z8_Q5E7Z-MQMLGGRQG GAPA-GGQ-----QQ QGNWGWQPQP
tr_B5FGN0_B5FGN-MQMLGGRQG GAPA-GGQ-----QQ QGNWGWQPQP
tr_B4EYJ2_B4EYJ-MQMLGGRGG QD-N-APS-----QG QGGWGWQPQP
tr_D3V5U1_D3V5U-MQMLGGRGG AS-Q-DAP-----AQ GGNWGWQPQP
tr_Q2NR22_Q2NR2-MQMLGGRQG GAAA-SGG-----QQ SGWGLPQQPQ
tr_F0LWT6_F0LWT-MQMLGGRQG GGMP-AQG-----GG MNQQQQQGGW
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tr_C3LRC8_C3LRC-MQMLGGRAQ QGGM-P-----AQGGMNV PAQQGSWGQP
tr_C3NS43_C3NS4-MQMLGGRAQ QGGM-P-----AQGGMNV PAQQGSWGQP
tr_C7BNE0_C7BNE-MQMLGGRAG GSFQ-EG-----QPQGGGW GQPQPQLQP
tr_D7DNA2_D7DNA-MQMLGGRDG AGSN-AS-----YDGGMDQ SSGSSDYDQV
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tr_Q3K618_Q3K61-MQLLGGRPQ QGD-----QQGGGN YQQQAPRQQA
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tr_D5X2Y7_D5X2Y-MQLLGGREG--GG-----GGGADD EGYSRNRET
tr_Q21RY1_Q21RY-MQMLGGREG--MG-----GPSDDDE GASGGYSRPA
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tr_A9AF13_A9AF1-MQMLGGRGG SGGG-GGG-D EG-GYGGGYG GGGGGGR-GE QMER--GGGG
tr_Q0BBT0_Q0BBT-MQMLGGRGG AGGG-GGGSD EG-GYGGGYG GGGGGGRGGE QMERGGGGGG

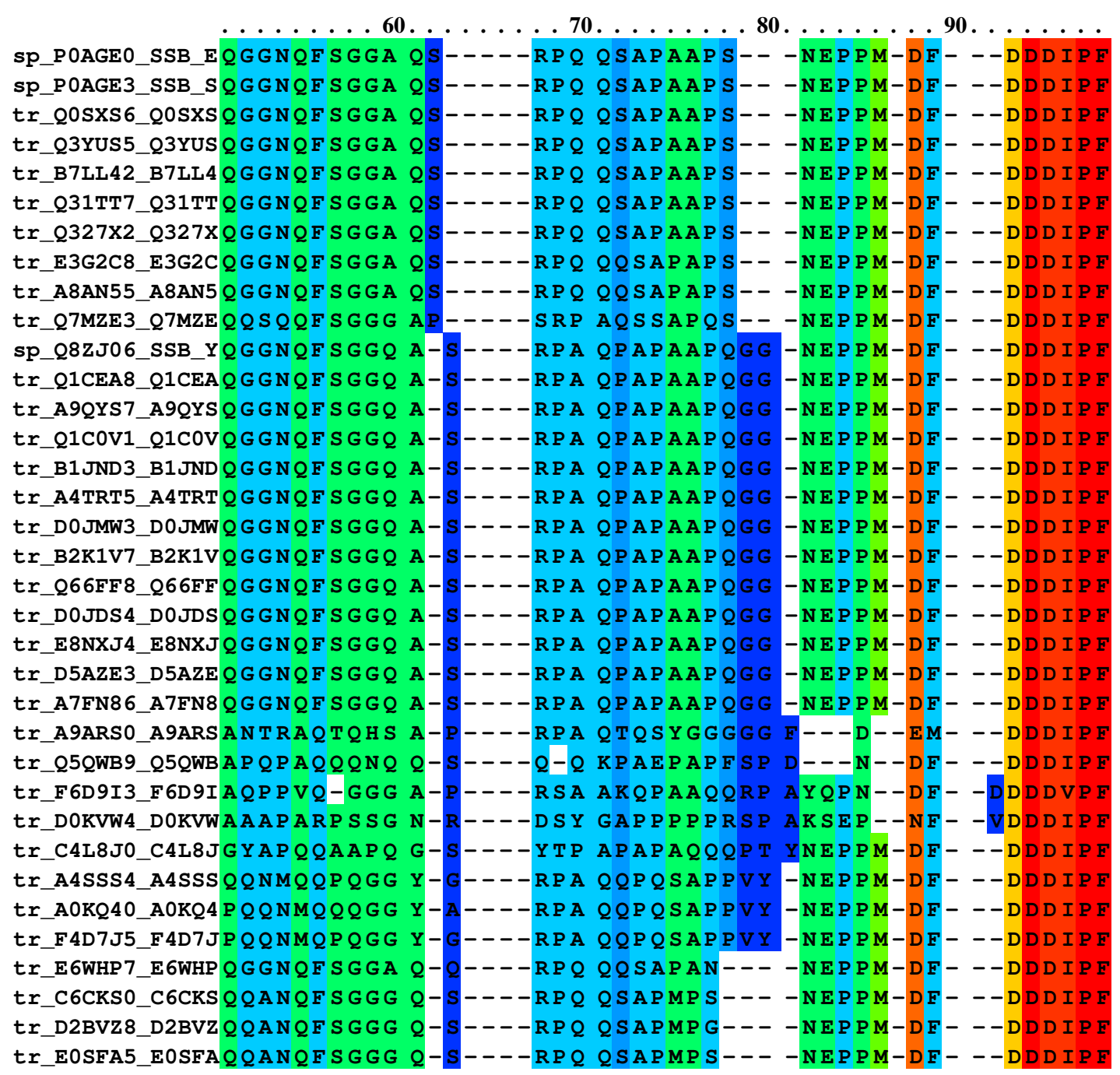
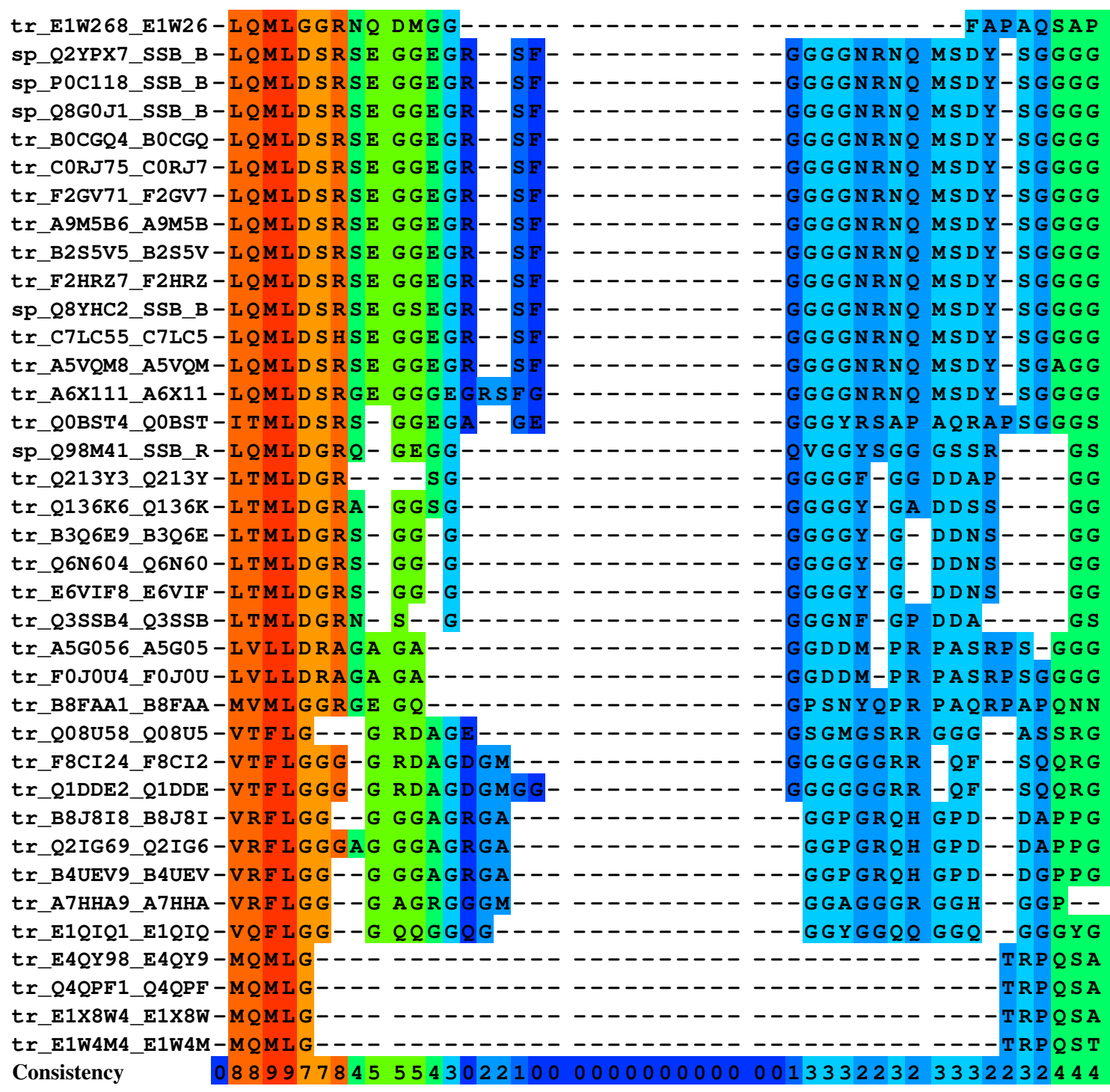
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tr_Q1BTJ1_Q1BTJ-MQMLGGRGG SGGG-GGGGD EG-GYGGGY--GGGGGR-GE QAER-GGGGG
tr_A4JHX0_A4JHX-MQMLGGRGG AGGG-GGGGD EG-GYGGGY--GGGGSRGGE QAER-GSRAG
tr_B1YN27_B1YN2-MQMLGGRGG AGGG-GGGSD EG-GYGGGYG GGGGGGRGGE QMER-GGGGG
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tr_Q63XJ3_Q63XJ-MQMLGGRGG SGGG-GGGGD DG-GYGGG--GGGYGG--GR DMER-GGGGG
tr_Q3JW59_Q3JW5-MQMLGGRGG SGGG-GGGGD DG-GYGGG--GGGYGG--GR DMER-GGGGG
tr_Q2T192_Q2T19-MQMLGGRGG S-GG-GGGGD DG-GY-GG--GGGYGG--GR DMERGGGGGG
tr_A3N5M7_A3N5M-MQMLGGRGG SGGG-GGGGD DG-GYGG--GG--GR DMER-GGGGG
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tr_E4QMN8_E4QMN-MQMLGARS GGGNA-----YEVMDQD QSASYQPRQS
tr_C6XAV2_C6XAV-MQMLGARS GGGNA-----YEVMDQD QSASYQPRQS
tr_Q3A6V5_Q3A6V-MQMLGRPGD DNSG-----GGG GYQRREPHPE
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sp_Q9CJP4_SSB_P-LQMLDSRNE RQQTG-----GYAPQ----TAAPQY
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tr_D5V760_D5V76-MKMLDSKSD SQNGANTG-----YEGEYSQP QTQQPASNQY
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tr_B6J234_B6J23-MHMLDNRGA GNSG-----NYGNH--SEGGASN-K
tr_Q0I5U0_Q0I5U-LQMLDSRNV ANSV-----EGQASY-Q
tr_B1XS47_B1XS4-MQMLGGKPV GGS A-----DGGESY-A
tr_A4T051_A4T05-MQMLGGKPV GGS G-----DGGESY-A
tr_D5C3D3_D5C3D-MQMLD-RAT GGS A-----PYNND--MNQGSAPG--
tr_Q3J6T1_Q3J6T-MQMLD-RAT GGS A-----PYNEDNS MPRGGTAGHP
tr_G2J0V5_G2J0V---LSLQGG KRDA-----AMDDD--SGYGAPAPR
tr_C7RIZ8_C7RIZ-MKMLGSREG MGSP-----ASSES--EYGGSMPS
tr_A1WZ36_A1WZ3-MQMLDSRGG GGG A-----A-----PMGGGGDQR
tr_B8GV27_B8GV2-MQMLGGR-G GSGG-----T-----GGFDDA-
tr_B7J938_B7J93-LQLVGARGG GGGG-----A-----ASFDEED
tr_B5EPC0_B5EPC-LQLVGARGG GGGG-----A-----ASFDEED
tr_C5BQ98_C5BQ9-MQMLDARGA GDGQ-----GYG-----GYDAPAPQ
tr_A6T3D2_A6T3D-MQMLGGRPG AGGG-----SAGM-----DDDYGSSA
tr_A4G9L8_A4G9L-MQMLGGRPG AGGG-----SSAM-----DDDYGSSA
tr_Q47IU1_Q47IU-MKMLGSRQG MGAP-----AGGG-----GGGSGYD
tr_Q122U3_Q122U-MQMLGSRQG MGGP-----GGDD-----GGGYEAPA
tr_Q3SLL6_Q3SLL-MQMLGSRSG GGGV-----ADM-----DDGFNQAP

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Results colour-coded for amino acid conservation


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tr_F0KT99_F0KT9 QGGNQFSGGQ T-S-----RPA QSAPAAQPQG GNEPPM-DF---DDDIPF
tr_E7AYX9_E7AYX QGGNQFSGGQ T-S-----RPA QSAPAAQPQG GNEPPM-DF---DDDIPF
tr_Q6LM83_Q6LM8 SVAPQQQQQA P-Q-----QPQ QAPQQPQQQY -NEPPM-DF---DDDIPF
tr_D8MLY1_D8MLY SGGNQFSGGQ Q-A-----RPQ AQPQONSAPA NNEPPM-DF---DDDIPF
tr_E8XXD9_E8XXD QGGNQFSGGQ Q-S-----RPA AQNNAPAQN -NEPPM-DF---DDDIPF
tr_D0KLR8_D0KLR QGGNQFSGGA Q-A-----QQR PAQNSAPAQS -NEPPM-DF---DDDIPF
tr_D4GHC5_D4GHC ANNNQFSGGA Q-S-----RPQ QQP SAPASNN -NEPPM-DF---DDDIPF
tr_F2ERB9_F2ERB ANNNQFSGGA Q-S-----RPQ QQP SAPASNN -NEPPM-DF---DDDIPF
tr_C9Y1E0_C9Y1E GGAQFSGGA Q-S-----RPQ QQAPAPS -NEPPM-DF---DDDIPF
tr_G0B8L9_G0B8L QGGNQFSGGQ Q-A-----RPA QNNAPAASS -NEPPM-DF---DDDIPF
tr_A1JRR5_A1JRR QGGNQFSGGQ QAS-----RPA QSAPAAQPQG GNEPPM-DF---DDDIPF
tr_E3DHH3_E3DHH QGGNQFSGGA QQS-----RPQ QQPQONSAPA NNEPPI-DF---DDDIPF
tr_Q6D0V9_Q6D0V QGGNQFSGGA QAQRPAQNA SSSQNNAPAQ SNEPPM-DF---DDDIPF
tr_B7VI95_B7VI9 QQQQYSAPA QQQP---KAP QQAPQQAQPQ YNEPPM-DF---DDDIPF
tr_B2VKC4_B2VKC QGGNQFSGGA QQQ---ARPQ QQPQNNAPA NNEPPI-DF---DDDIPF
tr_D0FWM9_D0FWM QGGNQFSGGA QQSR---PQQQ QQPQONSAPA NNEPPI-DF---DDDIPF
tr_D2T8I8_D2T8I QGGNQFSGGA QQSR---PQQQ QQPQONSAPA NNEPPI-DF---DDDIPF
tr_B6EM65_B6EM6 QNNFAPQQQQ QQ-----APQ QQAPQAAQPQ YNEPPM-DF---DDDIPF
tr_C6CA59_C6CA5 QPAASFSGGA QA-----PRP QSAPMPG -NEPPM-DF---DDDIPF
tr_E1SAY5_E1SAY GNNNQFSGGA Q-----SRP QQPQ SAPASN NNEPPM-DF---DDDIPF
tr_G0DZA5_G0DZA QGGNQFSGGA Q-----SRP QQQAPAAP -SNEPPM-DF---DDDIPF
tr_A6TGW7_A6TGW QGGNQFSGGA Q-----SRP QQQAPAAP -SNEPPM-DF---DDDIPF
tr_D5CCK4_D5CCK QGGNQFSGGA Q-----SRP QQQ SAPAP -SNEPPM-DF---DDDIPF
tr_G2S0J9_G2S0J QGGNQFSGGA Q-----SRP QQQ SAPAP -SNEPPM-DF---DDDIPF
tr_D3RG46_D3RG4 QGGNQFSGGA Q-----SRP QQQAPAAP -SNEPPM-DF---DDDIPF
tr_B5XXX3_B5XXX QGGNQFSGGA Q-----SRP QQQAPAAP -SNEPPM-DF---DDDIPF
tr_C6DE92_C6DE9 QGGNQFSGGA Q-----AQQ RPAQNSAPAQ SNEPPM-DF---DDDIPF
tr_B2AGW6_B2AGW GGGYGGGRGA QGG---GGQQ GGAARRPQP ASNGFE-DM---DDDIPF
tr_D0ZFE3_D0ZFE FSGGQSAPRQ QSQ---GGGY SAPAQPAAPQ SSEPPM-DF---DDDIPF
tr_E0T9B7_E0T9B FSGGQSAPRQ QSQ---GGGY SAPAQPAAPQ SSEPPM-DF---DDDIPF
tr_C5BF00_C5BF0 SGGQAAPRQ QSQ---GGY SAPAQPAAPQ SSEPPM-DF---DDDIPF
tr_Q5E7Z8_Q5E7Z AQQNNFAPQQ QQ-----APQ QQAPQAAQPQ YNEPPM-DF---DDDIPF
tr_B5FGN0_B5FGN AQQNNFAPQQ QQ-----APQ QQAPQAAQPQ YNEPPM-DF---DDDIPF
tr_B4EYJ2_B4EYJ QASQFSGGA PS-----RPA QPAAAPAP -SNEPPM-DF---DDDIPF
tr_D3V5U1_D3V5U QASQFSGGG QQ-----PSP SRPAQSPAPQ SNEPPM-DF---DDDIPF
tr_Q2NR22_Q2NR2 GNNAQFSGGN AP-----ASR RAQNSAPAP -SNEPPM-DF---DDDIPF
tr_F0LWT6_F0LWT GQPQQPAMQQ HK-----PMQ QQAPQQSQPQ YNEPPM-DF---DDDIPF
tr_A7MPL6_A7MPL GGAQFSGGA Q-----SRP QQQAPAPS -NEPPM-DF---DDDIPF
sp_P0A2F7_SSB_S QGGNQFSGGA QS-----RPQ Q-SAPAPS -NEPPM-DF---DDDIPF
tr_F8VMK2_F8VMK QGGNQFSGGA QS-----RPQ Q-STPAPS -NEPPM-DF---DDDIPF
sp_P0A2F6_SSB_S QGGNQFSGGA QS-----RPQ Q-SAPAPS -NEPPM-DF---DDDIPF
tr_B5BJX8_B5BJX QGGNQFSGGA QS-----RPQ Q-SAPAPS -NEPPM-DF---DDDIPF
tr_B4TDN8_B4TDN QGGNQFSGGA QS-----RPQ Q-SAPAPS -NEPPM-DF---DDDIPF
tr_B4TRI3_B4TRI QGGNQFSGGA QS-----RPQ Q-SAPAPS -NEPPM-DF---DDDIPF
tr_B5F2C9_B5F2C QGGNQFSGGA QS-----RPQ Q-SAPAPS -NEPPM-DF---DDDIPF
tr_C0Q532_C0Q53 QGGNQFSGGA QS-----RPQ Q-SAPAPS -NEPPM-DF---DDDIPF
tr_E8X9Q5_E8X9Q QGGNQFSGGA QS-----RPQ Q-SAPAPS -NEPPM-DF---DDDIPF
tr_E1WEU6_E1WEU QGGNQFSGGA QS-----RPQ Q-SAPAPS -NEPPM-DF---DDDIPF
tr_C9XCZ9_C9XCZ QGGNQFSGGA QS-----RPQ Q-SAPAPS -NEPPM-DF---DDDIPF
tr_B5R7V4_B5R7V QGGNQFSGGA QS-----RPQ Q-SAPAPS -NEPPM-DF---DDDIPF
tr_D0ZRX0_D0ZRX QGGNQFSGGA QS-----RPQ Q-SAPAPS -NEPPM-DF---DDDIPF
tr_B5QZ80_B5QZ8 QGGNQFSGGA QS-----RPQ Q-SAPAPS -NEPPM-DF---DDDIPF
tr_B4T1V0_B4T1V QGGNQFSGGA QS-----RPQ Q-SAPAPS -NEPPM-DF---DDDIPF
tr_Q57GX2_Q57GX QGGNQFSGGA QS-----RPQ Q-SAPAPS -NEPPM-DF---DDDIPF
tr_B5FQS9_B5FQS QGGNQFSGGA QS-----RPQ Q-SAPAPS -NEPPM-DF---DDDIPF
tr_F5ZYC5_F5ZYC QGGNQFSGGA QS-----RPQ Q-SAPAPS -NEPPM-DF---DDDIPF
tr_A9MGM8_A9MGM QSGNQFSGGA QS-----RPQ Q-SAPAPS -NEPPM-DF---DDDIPF
tr_A9N1N6_A9N1N QGGNQFSGGA QP-----RPQ Q-SAPAPS -NEPPM-DF---DDDIPF
tr_A4W5H1_A4W5H GGGNQFSGGA QS-----RPQ QQSAPAPS -NEPPM-DF---DDDIPF
tr_D2TRS6_D2TRS QGGNQFSGGA QS-----RPQ QSAPAAAPS -NEPPM-DF---DDDIPF
sp_Q9KUW2_SSB_V QQPAKQHQPM QQ-----SAP QQYSQPQY -NEPPM-DF---DDDIPF
tr_A5F8S9_A5F8S QQPAKQHQPM QQ-----SAP QQYSQPQY -NEPPM-DF---DDDIPF
tr_C3LRC8_C3LRC QQPAKQHQPM QQ-----SAP QQYSQPQY -NEPPM-DF---DDDIPF
tr_C3NS43_C3NS4 QQPAKQHQPM QQ-----SAP QQYSQPQY -NEPPM-DF---DDDIPF
tr_C7BNE0_C7BNE QQSQQFSGGG AP-----SRP AQSFAPOS -NEPPM-DF---DDDIPF
tr_D7DNA2_D7DNA PSSANQSSAK QA-----PAQ STAKAATS -GSGFD-DF---EDDIPF
tr_E8TXV4_E8TXV APAPRPAPPA ARP-----APA PAPAAQPPRA -ASGFD-DM---DDDIPF
sp_P66847_SSB_B RAPAQRPAAA P-----QRP A--PQAA -PAANL-AD---MDDDIPF
sp_P66846_SSB_B RAPAQRPAAA P-----QRP A--PQAA -PAANL-AD---MDDDIPF
tr_F4LFE5_F4LFE RAPAQRPAAA P-----QRP A--PQAA -PAANL-AD---MDDDIPF
sp_P59928_SSB_B RAPAQRPAAA P-----QRP A--PQAA -PAANL-AD---MDDDIPF
tr_s1W7_Q2L1W7 RAPAQRPAPQ Q-----QRP A--APMGG -GAANL-AD---MDDDIPF
tr_F4GWZ8_F4GWZ QQRSQRPAPQ ------RP A--APQAS -PAANL-AD---MDDDIPF
tr_G0AGI2_G0AGI QQNTSAPAAP ------AR Q--APASR -PAPNF-SD---MDDDIPF
tr_A9IHN6_A9IHN RAAARPPAQ R-----PAP AAAAPAAG -GAANL-AD---MDDDIPF

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tr_Q4K563_Q4K56 SRPAPQPQRE S-----R-P APQQAAPQ-- --PAPDF-DS--FD DDIPF
tr_Q3K618_Q3K61 PRPQQSAPQQ R-----SAP APQQAAPQ-- --PAPDF-DS--FD DDIPF
tr_Q7NWU0_Q7NWU -APAP-RQEA P-----AAP R--RQEPK-- --PAPRM-DD--MD DDIPF
tr_D5X2Y7_D5X2Y SGRAPSRPAP S-----RAP A--PAASK-- --PASDF-SD--MD DDIPF
tr_Q21RY1_Q21RY PASRPAASAP A-----ARP APAPAQAK-- --PSSGF-DD--MD DDIPF
sp_P44409_SSB_HR QTNNGNSYQ S-----SRP APQQAAPQ-- --AEPPM-DG--FD DDIPF
tr_E4QWX7_E4QWX RQTNNGNSYQ S-----SRP APQQAAPQ-- --AEPPM-DG--FD DDIPF
tr_E3GSS4_E3GSS RQTNNGNSYQ S-----SRP APQQAAPQ-- --AEPPM-DG--FD DDIPF
tr_A5UG51_A5UG5 RQTNNGNSYQ S-----SRP APQQAAPQ-- --AEPPM-DG--FD DDIPF
tr_E1X9I4_E1X9I RQTNNGNSYQ S-----SRP APQQAAPQ-- --AEPPM-DG--FD DDIPF
tr_A5UAP0_A5UAP RQTNNGNSYQ S-----SRP APQQAAPQ-- --AEPPM-DG--FD DDIPF
tr_Q4QNT8_Q4QNT RQTNNGNSYQ S-----SRP APQQAAPQ-- --AEPPM-DG--FD DDIPF
sp_Q8DCJ0_SSB_VA QPSYQKQAP A-----QQQ PQSQPQY-- --NEPPM-D--FD DDIPF
tr_E8VT21_E8VT2 AQPSYQKQAP A-----QQQ PQSQPQY-- --NEPPM-D--FD DDIPF
tr_Q7MHB8_Q7MHB AQPSYQKQAP A-----QQQ PQSQPQY-- --NEPPM-D--FD DDIPF
tr_B0BP65_B0BP6 NSGYGYDQTA S-----RSA PQAAPKAQ-- --AEPPM-DN--FD DDIPF
tr_B3H1C5_B3H1C NSGYGYDQTA S-----RSA PQAAPKAQ-- --AEPPM-DN--FD DDIPF
tr_A3N0E5_A3N0E NSGYGYDQTA S-----RSA PQAAPKAQ-- --AEPPM-DN--FD DDIPF
tr_E3HRP1_E3HRP APAQR-PAPQ Q-----RPA PAAAPASS-- --GANLA-D--MD DDIPF
tr_B8F401_B8F40 NNFNG-GN-A T-----RPQ PAQKPAQ-- --AEPPM-DN--FD DDIPF
sp_Q87LA3_SSB_VA QQQYNAPQQ Q-----QQA PQQPQQY-- --NEPPM-D--FD DDIPF
tr_B2TX90_B2TX9 GGNQFSGGAQ S-----RPQ QSAPAAP-- --NEPPM-D--FD DDIPF
tr_D3VBV3_D3VBV ASQQFSGGA P-----SRP APSPAPQS-- --NEPPI-D--FD DDIPF
tr_C6WZ85_C6WZ8 YNQAPPSQSQ A-----KPA PAAKPA-- --GSGFD-D--FE DDIPF
sp_Q8Y2B4_SSB_RM SR-GE GGGG Q-----GGG ARRQAPS--N GFE-DM-D--DD IPF
tr_B2UEU3_B2UEU YTRGEGGGG Q-----GGG ARRQAPS--N GFE-DM-D--DD IPF
tr_C6BBX7_C6BBX YSRGEGGGG Q-----GGG ARRQAPS--N GFE-DM-D--DD IPF
tr_A9AF13_A9AF1 GRASGAARGG A-----S GGG QSRPSAPAGG GFD-EM-D--DD IPF
tr_Q0BBT0_Q0BBT GRAGGAPRGG A-----A GGG QSRPSAPAGG GFD-EM-D--DD IPF
tr_B1JYM4_B1JYM GRASGAARGG A-----G GGG QSRPSAPAGG GFD-EM-D--DD IPF
tr_A0KAK0_A0KAK GRASGAARGG A-----G GGG QSRPSAPAGG GFD-EM-D--DD IPF
tr_Q1BTJ1_Q1BTJ GRASGAARGG A-----G GGG QSRPSAPAGG GFD-EM-D--DD IPF
tr_A4JHX0_A4JHX GASRGA-GG A-----G GGG QSRPSAPAGG GFD-EM-D--DD IPF
tr_B1YN27_B1YN2 GRAGGAPRGG A-----A GGG QSRPSAPAGG GFD-EM-D--DD IPF
tr_B4EAT8_B4EAT AGGGGAARGG A-----G GGG QSRPSAPAGG GFD-EM-D--DD IPF
tr_A3NRC2_A3NRC RASGGGAGA RS---G GGG ASRPSAPAGG GFD-EM-D--DD IPF
tr_Q63XJ3_Q63XJ RASGGGAGA RS---G GGG ASRPSAPAGG GFD-EM-D--DD IPF
tr_Q3JW59_Q3JW5 RASGGGAGA RS---G GGG ASRPSAPAGG GFD-EM-D--DD IPF
tr_Q2T192_Q2T19 RASGGGAGA RS---G GGG ASRPSAPAGG GFD-EM-D--DD IPF
tr_A3N5M7_A3N5M RASGGGAGA RS---G GGG ASRPSAPAGG GFD-EM-D--DD IPF
tr_Q39CW5_Q39CW GRAGGAARGG A-----G GGA QSRPSAPAGG GFD-EM-D--DD IPF
tr_C5ADI0_C5ADI GGGGASRGG S-----G GGG SSRPSAPAGG GLD-EM-D--DD IPF
tr_E5ALT6_E5ALT GRASGARQG A-----G GGG ASRPSAPAGG GFD-EM-D--DD IPF
tr_Q145U6_Q145U GSRGGS-GGG A-----G GGG ASRPSAPAGG GFD-EM-D--DD IPF
tr_B2SXJ1_B2SXJ GARGSGGGG S-----G G ASRPSAPAGG GFD-EM-D--DD IPF
tr_D5WBB4_D5WBB GSRGGS-GGG S-----G G ASRPSAPAGG GFD-EM-D--DD IPF
tr_E1T6K9_E1T6K GSRGSGGGG G-----G G SSRPSAPAGG GFD-EM-D--DD IPF
tr_Q476D2_Q476D QGGGGGGGG G-----Q QGG ARRQAPS--N GFE-DM-D--DD IPF
tr_A4JTB6_A4JTB RGQGGYQONS S-----G GQNRPPSRNN SES-EM-D--DD IPF
tr_A5V945_A5V94 ASSGGNFGGG TR---G GSSGG AARKSDPF-- --DAG-DL-D--DD VPF
tr_A9HM62_A9HM6 AGGPGGSGAG S-----G GNP GGGWDAPH-- --GGS-DL-D--DE IPF
tr_C7JGA1_C7JGA SSAPRQPPAQ S-----R SGGNN SGGWDASG-- --GNG-DL-D--DE IPF
tr_Q5FSI3_Q5FSI SRGNTGGASG GN---R SGG-- NGGWDAPP-- --DN-DL-D--DE IPF
tr_Q5LSX7_Q5LSX PYGGGPSGGG S---S SGGGR GR---GP-A SGG-ID-D--DE IPF
tr_F2IZR2_F2IZR YGGG-SGGG S-----Y GGGG GG---GY-G GGG-PM-D--DE IPF
tr_D0LVJ8_D0LVJ YGGGGSGGG G-----Y GGGGP GGGGGGYGG GGG-GP-D--DD IPF
tr_D3NUP5_D3NUP NYGGGNYGG G---S SGGNR GG---G GAPP RHE-DL-D--DE IPF
tr_B2JCR5_B2JCR GGGGGRVAGG S-----G GGG QSRPSAPAGG GFD-EM-D--DD IPF
tr_Q1GNS9_Q1GNS SGGGSGGGG A-----P G G---GRP PFDL-D--DD VPF
tr_B9JWR9_B9JWR ARSGGASSGG R-----G A SAP---SGG-F SRDM-D--DD IPF
tr_B9JF98_B9JF9 PSSGGRSAG A-----S R GAPASSGGGS NFSRD-L-D--DD IPF
tr_Q1MGN0_Q1MGN PASSPSRGGG S-----S R NFSRD-L-D--DD IPF
tr_C6AXR8_C6AXR PASSPSRGGG S-----S R NFSRD-L-D--DD IPF
tr_A6TIR6_A6TIR ATSGAAKKGK KA---A GK KSNTAPQQ-P PSQDP-GHD-FD DE IPF
tr_Q21M21_Q21M2 QAPAQGGGA PA---Y GG GRPQAPA-P AAPAP-DMD SFD DDIPF
tr_A6TID9_A6TID AQPAQAAAKS PKAKG-G KKG RQDAAPSQQP PQLPN-D FP PMD DDAPE
tr_F4HFM6_F4HFM PSYNQAAAQ P-----N QF AQPAA-AKAP QAAVNP-D TA DFD DDMPE
tr_A5EWP4_A5EWP NVYSAAPSK-P Q-----K PA ARPAPMPSSP DYGPDG-AFD DFD DE IPF
tr_G4T2U7_G4T2U QNSAQNSAPA Q-----S RP QSTPSNST-- --PPPYD-DF--DD DIPF
tr_Q1GYJ8_Q1GYJ APRQQAAPA S-----Q RP APAASKPA-- --GGSNFD-DF--ED DIPF
tr_E4QMN8_E4QMN AAPAQARP S-----A PA AATSKPA-- --GSGFD-DF--DD DIPF
tr_C6XAV2_C6XAV AAPAQARP S-----A PA TATSKPA-- --GSGFD-DF--DD DIPF
tr_Q3A6V5_Q3A6V RQERPASN S-----N QP QONQY-- --EPPF-NP--DD DIPF
tr_D6CKD3_D6CKD DSGRAPSRPA P-----S RA PAAAASKP-- --ASDFS-DM--DD DIPF
tr_D3V012_D3V01 VPQQSHGWGA P-----Q QP KGQQLQP-- --EPPM-DF--DD DIPF

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