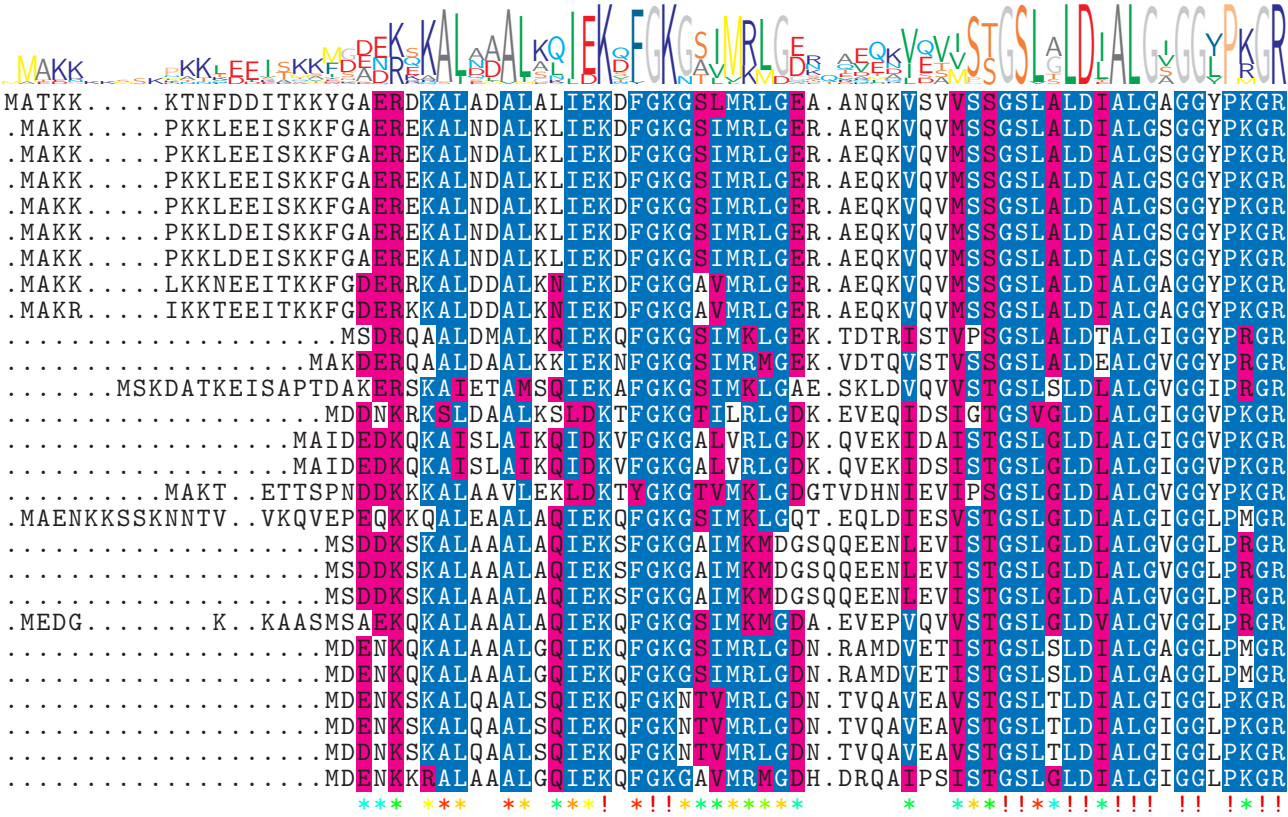


logo

NTDB id 600 KW2 RS01765 WP 011675413.1
NTDB id 269 KZH43 RS08665 WP 001085462.1
NTDB id 228 SPD RS09265 WP 001085462.1
NTDB id 194 SPR RS08825 WP 001085462.1
NTDB id 159 SP RS09750 WP 001085462.1
NTDB id 527 SMSK321 RS11065 WP 001085454.1
NTDB id 499 SM12261 RS08315 WP 078228268.1
NTDB id 453 Spy49 1753c ACI62003.1
NTDB id 408 SMU RS09530 WP 002262392.1
NTDB id 115 BSU 16940 NP 389576.2
NTDB id 625 LCA RS02525 WP 011374196.1
NTDB id 1313 DR RS12030 WP 010888966.1
NTDB id 1245 Cj1673c YP 002345041.1
NTDB id 1214 NCTC11637 00359 SQJ03206.1
NTDB id 1211 C694 RS00795 WP 000963128.1
NTDB id 1334 RAOC RS04870 WP 004918236.1
NTDB id 1389 A4U84 RS07560 WP 021112712.1
NTDB id 1130 NGFG RS03960 WP 003688695.1
NTDB id 1124 NGFG RS03960 WP 003688695.1
NTDB id 1123 OK783 RS03845 WP 003688695.1
NTDB id 1427 RS RS02760 WP 011000510.1
NTDB id 1165 A1552VC RS01565 WP 000344154.1
NTDB id 1142 GTF74 RS11550 WP 000344154.1
NTDB id 201002 KAB03 RS06660 WP 000344169.1
NTDB id 1074 ABD1 RS10195 WP 000344167.1
NTDB id 1022 ACIAD RS06390 WP 004925639.1
NTDB id 1205 PSJM300 05545 AFN77183.1
consensus

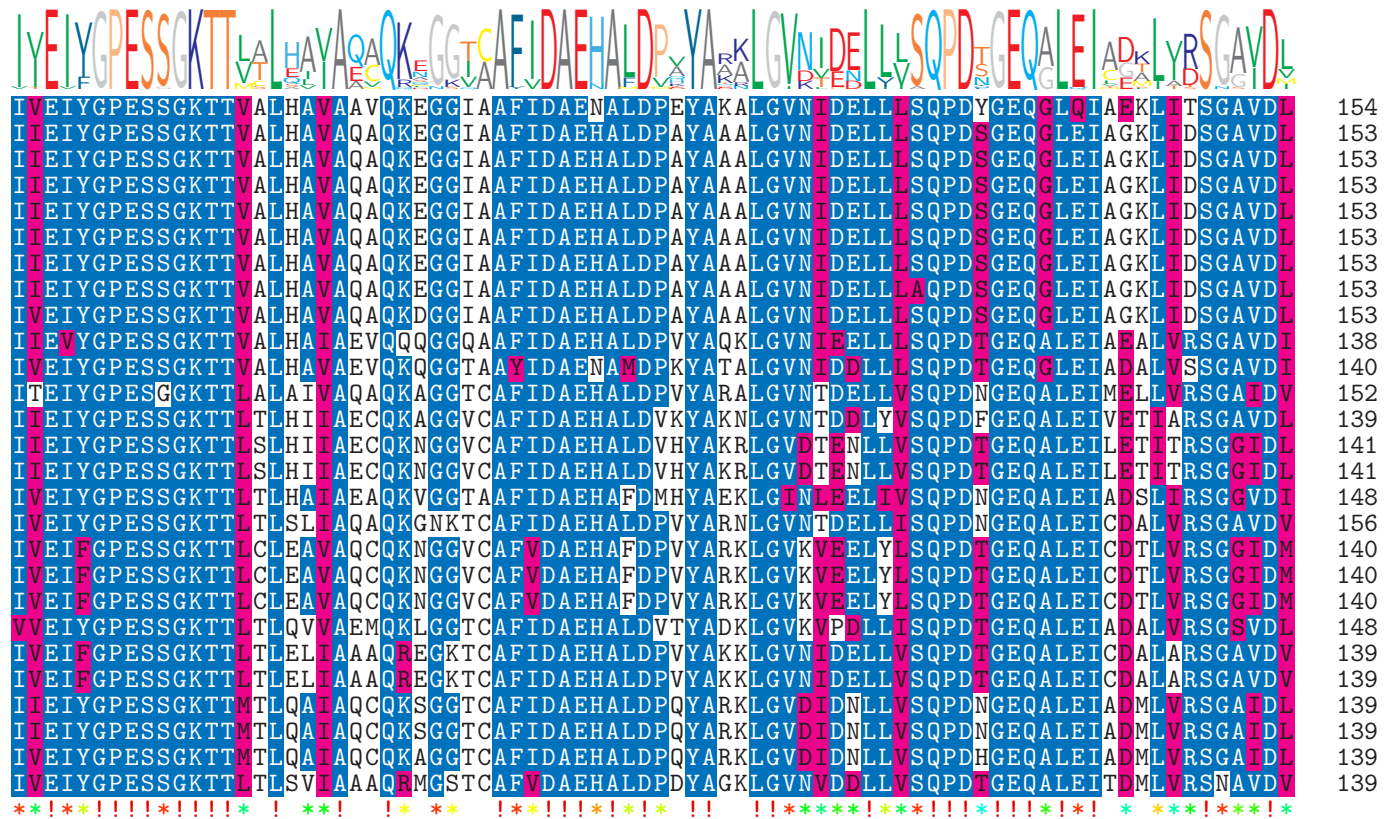


74
73
73
73
73
73
73
73
73
58
60
72
59
61
61
68
76
60
60
60
68
59
59
59
59
59
59

```

NTDB id 600 KW2 RS01765 WP 011675413.1
NTDB id 269 KZH43 RS08665 WP 001085462.1
NTDB id 228 SPD RS09265 WP 001085462.1
NTDB id 194 SPR RS08825 WP 001085462.1
NTDB id 159 SP RS09750 WP 001085462.1
NTDB id 527 SMSK321 RS11065 WP 001085454.1
NTDB id 499 SM12261 RS08315 WP 078228268.1
NTDB id 453 Spy49 1753c ACI62003.1
NTDB id 408 SMU RS09530 WP 002262392.1
NTDB id 115 BSU 16940 NP 389576.2
NTDB id 625 LCA RS02525 WP 011374196.1
NTDB id 1313 DR RS12030 WP 010888966.1
NTDB id 1245 Cj1673c YP 002345041.1
NTDB id 1214 NCTC11637 00359 SQJ03206.1
NTDB id 1211 C694 RS00795 WP 000963128.1
NTDB id 1334 RAOC RS04870 WP 004918236.1
NTDB id 1389 A4U84 RS07560 WP 021112712.1
NTDB id 1130 NGFG RS03960 WP 003688695.1
NTDB id 1124 NGFG RS03960 WP 003688695.1
NTDB id 1123 OK783 RS03845 WP 003688695.1
NTDB id 1427 RS RS02760 WP 01100051.1
NTDB id 1165 A1552VC RS01565 WP 000344154.1
NTDB id 1142 GTF74 RS11550 WP 000344154.1
NTDB id 201002 KAB03 RS06660 WP 000344169.1
NTDB id 1074 ABD1 RS10195 WP 000344167.1
NTDB id 1022 ACIAD RS06390 WP 004925639.1
NTDB id 1205 PSJM300 05545 AFN77183.1
consensus

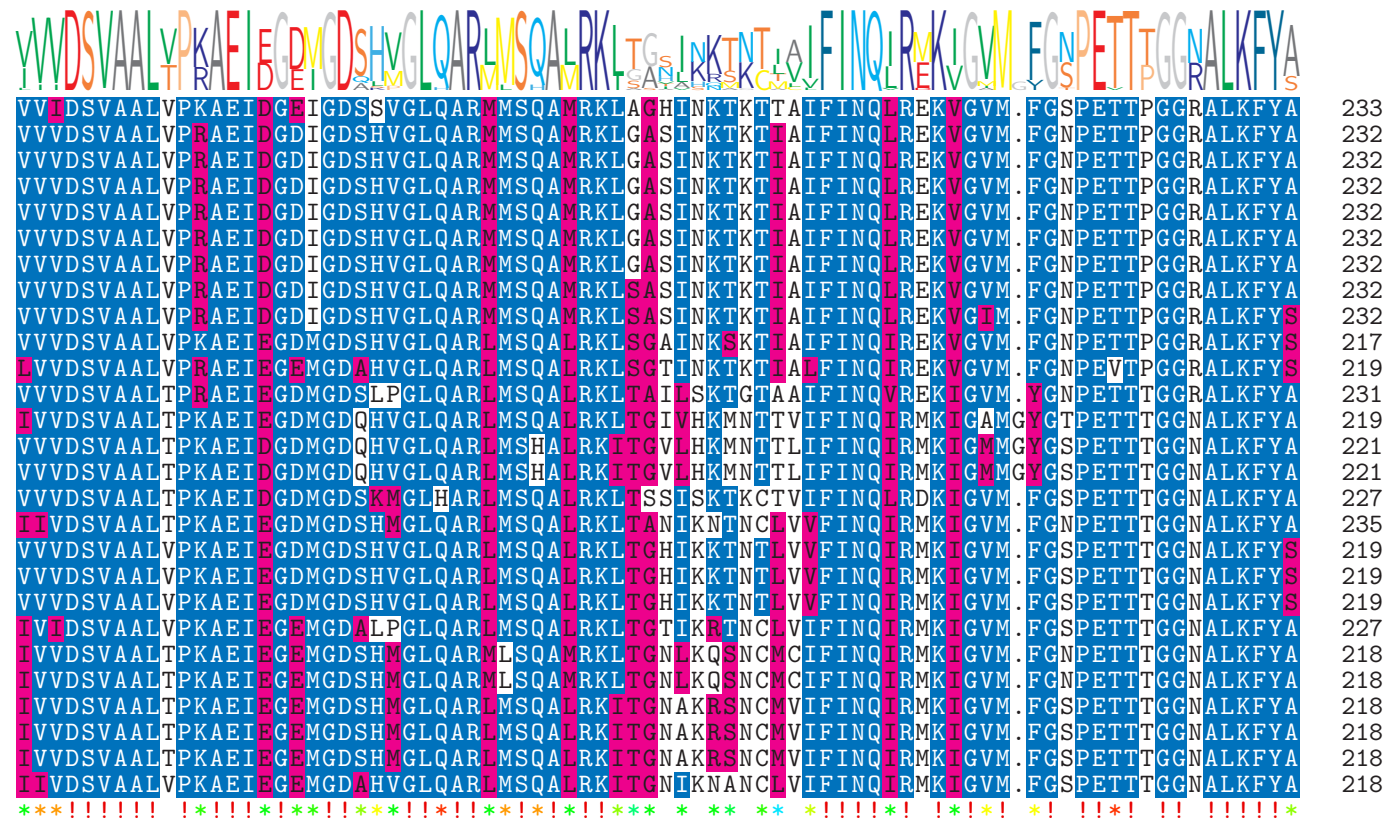
```



```

NTDB id 600 KW2 RS01765 WP 011675413.1
NTDB id 269 KZH43 RS08665 WP 001085462.1
NTDB id 228 SPD RS09265 WP 001085462.1
NTDB id 194 SPR RS08825 WP 001085462.1
NTDB id 159 SP RS09750 WP 001085462.1
NTDB id 527 SMSK321 RS11065 WP 001085454.1
NTDB id 499 SM12261 RS08315 WP 078228268.1
NTDB id 453 Spy49 1753c ACI62003.1
NTDB id 408 SMU RS09530 WP 002262392.1
NTDB id 115 BSU 16940 NP 389576.2
NTDB id 625 LCA RS02525 WP 011374196.1
NTDB id 1313 DR RS12030 WP 010888966.1
NTDB id 1245 Cj1673c YP 002345041.1
NTDB id 1214 NCTC11637 00359 SQJ03206.1
NTDB id 1211 C694 RS00795 WP 000963128.1
NTDB id 1334 RAOC RS04870 WP 004918236.1
NTDB id 1389 A4U84 RS07560 WP 021112712.1
NTDB id 1130 NGFG RS03960 WP 003688695.1
NTDB id 1124 NGFG RS03960 WP 003688695.1
NTDB id 1123 OK783 RS03845 WP 003688695.1
NTDB id 1427 RS RS02760 WP 011000510.1
NTDB id 1165 A1552VC RS01565 WP 000344154.1
NTDB id 1142 GTF74 RS11550 WP 000344154.1
NTDB id 201002 KAB03 RS06660 WP 000344169.1
NTDB id 1074 ABD1 RS10195 WP 000344167.1
NTDB id 1022 ACIAD RS06390 WP 004925639.1
NTDB id 1205 PSJM300 05545 AFN77183.1
consensus

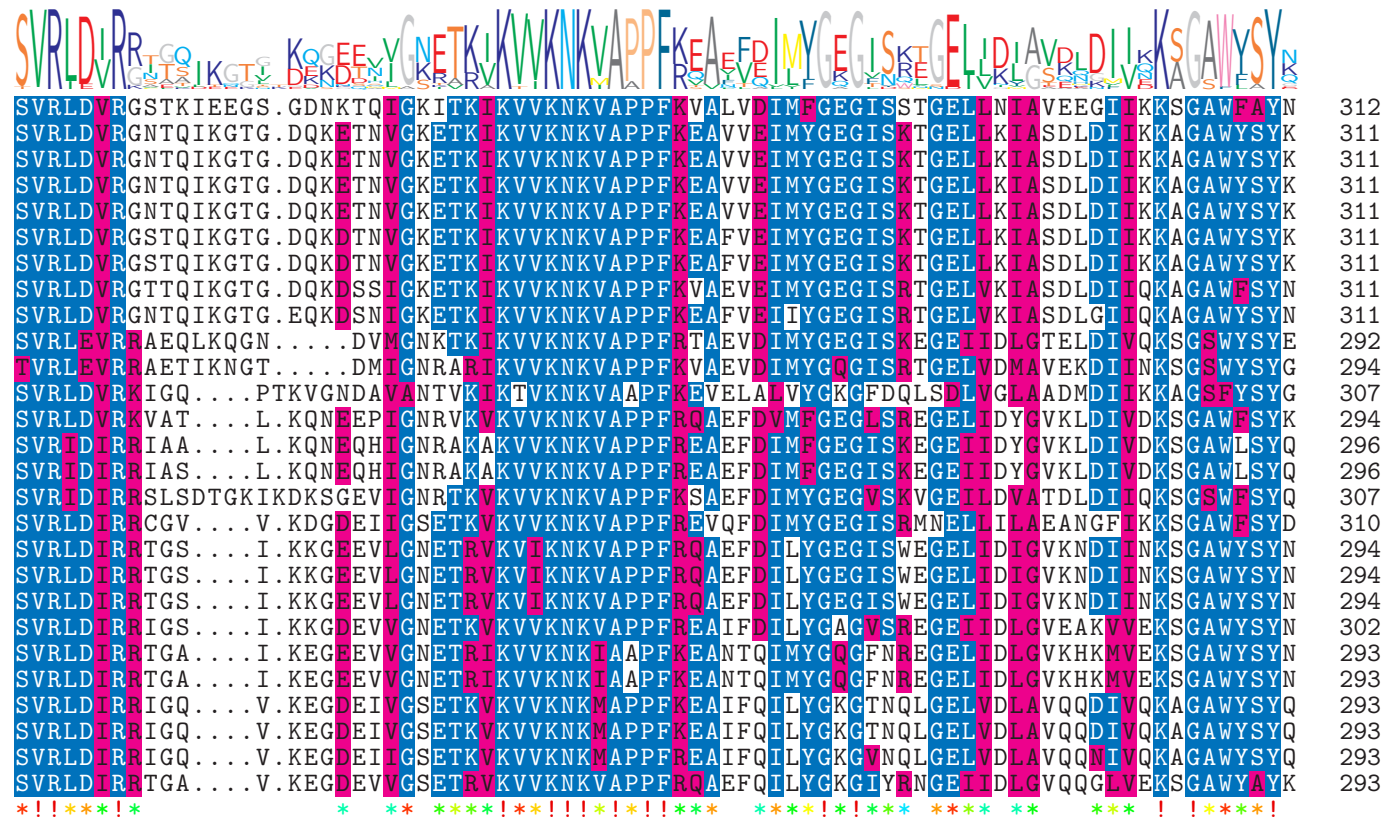
```



```

NTDB id 600 KW2 RS01765 WP 011675413.1
NTDB id 269 KZH43 RS08665 WP 001085462.1
NTDB id 228 SPD RS09265 WP 001085462.1
NTDB id 194 SPR RS08825 WP 001085462.1
NTDB id 159 SP RS09750 WP 001085462.1
NTDB id 527 SMSK321 RS11065 WP 001085454.1
NTDB id 499 SM12261 RS08315 WP 078228268.1
NTDB id 453 Spy49 1753c ACI62003.1
NTDB id 408 SMU RS09530 WP 002262392.1
NTDB id 115 BSU 16940 NP 389576.2
NTDB id 625 LCA RS02525 WP 011374196.1
NTDB id 1313 DR RS12030 WP 010888966.1
NTDB id 1245 Cj1673c YP 002345041.1
NTDB id 1214 NCTC11637 00359 SQJ03206.1
NTDB id 1211 C694 RS00795 WP 000963128.1
NTDB id 1334 RAOC RS04870 WP 004918236.1
NTDB id 1389 A4U84 RS07560 WP 021112712.1
NTDB id 1130 NGFG RS03960 WP 003688695.1
NTDB id 1124 NGFG RS03960 WP 003688695.1
NTDB id 1123 OK783 RS03845 WP 003688695.1
NTDB id 1427 RS RS02760 WP 011000510.1
NTDB id 1165 A1552VC RS01565 WP 000344154.1
NTDB id 1142 GTF74 RS11550 WP 000344154.1
NTDB id 201002 KAB03 RS06660 WP 000344169.1
NTDB id 1074 ABD1 RS10195 WP 000344167.1
NTDB id 1022 ACIAD RS06390 WP 004925639.1
NTDB id 1205 PSJM300 05545 AFN77183.1
consensus

```




```

NTDB id 600 KW2 RS01765 WP 011675413.1
NTDB id 269 KZH43 RS08665 WP 001085462.1
NTDB id 228 SPD RS09265 WP 001085462.1
NTDB id 194 SPR RS08825 WP 001085462.1
NTDB id 159 SP RS09750 WP 001085462.1
NTDB id 527 SMSK321 RS11065 WP 001085454.1
NTDB id 499 SM12261 RS08315 WP 078228268.1
NTDB id 453 Spy49 1753c ACI62003.1
NTDB id 408 SMU RS09530 WP 002262392.1
NTDB id 115 BSU 16940 NP 389576.2
NTDB id 625 LCA RS02525 WP 011374196.1
NTDB id 1313 DR RS12030 WP 010888966.1
NTDB id 1245 Cj1673c YP 002345041.1
NTDB id 1214 NCTC11637 00359 SQJ03206.1
NTDB id 1211 C694 RS00795 WP 000963128.1
NTDB id 1334 RAOC RS04870 WP 004918236.1
NTDB id 1389 A4U84 RS07560 WP 021112712.1
NTDB id 1130 NGFG RS03960 WP 003688695.1
NTDB id 1124 NGFG RS03960 WP 003688695.1
NTDB id 1123 OK783 RS03845 WP 003688695.1
NTDB id 1427 RS RS02760 WP 011000510.1
NTDB id 1165 A1552VC RS01565 WP 000344154.1
NTDB id 1142 GTF74 RS11550 WP 000344154.1
NTDB id 201002 KAB03 RS06660 WP 000344169.1
NTDB id 1074 ABD1 RS10195 WP 000344167.1
NTDB id 1022 ACIAD RS06390 WP 004925639.1
NTDB id 1205 PSJM300 05545 AFN77183.1
consensus

```

Sequence	Score
DEKIGQGA ¹ E ² KA ³ KN ⁴ YL ⁵ KE ⁶ HQ ⁷ DV ⁸ FD ⁹ EID ¹⁰ HK ¹¹ VRAAH ¹² GL ¹³ LDSEVAETEEE ¹⁴ .TTASKTK ¹⁵ ..AKAKKEEKAVETEEIELELED ¹⁶ ..	387
DEKIGQGS ¹ EN ² AK ³ KYLA ⁴ EH ⁵ PE ⁶ IF ⁷ DEID ⁸ KQ ⁹ VR ¹⁰ SKF ¹¹ GL ¹² IDGEEVSEQDTE ¹³ .NKKD ¹⁴ E ¹⁵.....PKKEEA ¹⁶ ..VNEEVPLDLGDEL ¹⁷	382
DEKIGQGS ¹ EN ² AK ³ KYLA ⁴ EH ⁵ PE ⁶ IF ⁷ DEID ⁸ KQ ⁹ VR ¹⁰ SKF ¹¹ GL ¹² IDGEEVSEQDTE ¹³ .NKKD ¹⁴ E ¹⁵.....PKKEEA ¹⁶ ..VNEEVPLDLGDEL ¹⁷	382
DEKIGQGS ¹ EN ² AK ³ KYLA ⁴ EH ⁵ PE ⁶ IF ⁷ DEID ⁸ KQ ⁹ VR ¹⁰ SKF ¹¹ GL ¹² IDGEEVSEQDTE ¹³ .NKKD ¹⁴ E ¹⁵.....PKKEEA ¹⁶ ..VNEEVPLDLGDEL ¹⁷	382
DEKIGQGS ¹ EN ² AK ³ KYLA ⁴ DN ⁵ PE ⁶ VFA ⁷ EID ⁸ HQ ⁹ VR ¹⁰ VQF ¹¹ GL ¹² IDGEEAAE ¹³.....SKKD ¹⁴ E ¹⁵.....VAQVDS ¹⁶ ..VNEEVTLDLGDEL ¹⁷	378
DEKIGQGS ¹ EN ² AK ³ KYLA ⁴ DN ⁵ PE ⁶ IF ⁷ DEID ⁸ HQ ⁹ VR ¹⁰ VQF ¹¹ GL ¹² IDGEEIAE ¹³.....SKKD ¹⁴ E ¹⁵.....AAQVDS ¹⁶ ..VNEEVTLDLGDEL ¹⁷	378
GEKIGQGS ¹ EN ² AK ³ RYLA ⁴ DHP ⁵ QL ⁶ FD ⁷ EID ⁸ RK ⁹ VR ¹⁰ VK ¹¹ FL ¹² LEESEESAMAV ¹³ .ASE ¹⁴.....E ¹⁵.....TDDLALDLNGI ¹⁶	374
GEKIGQGS ¹ EN ² AK ³ KFLA ⁴ DN ⁵ PE ⁶ IF ⁷ DD ⁸ ID ⁹ HK ¹⁰ VR ¹¹ VQY ¹² GL ¹³ IEEDNTEEKQSS ¹⁴ .KEK ¹⁵.....ETDEK ¹⁶ ..ADKNLVLELDDTI ¹⁷	379
EE ¹ RL ² GG ³ RENA ⁴ KQ ⁵ FL ⁶ KN ⁷ KD ⁸ IM ⁹ LI ¹⁰ QE ¹¹ QI ¹² REHY ¹³ GL ¹⁴ DNNGVVQQQAEE ¹⁵ .TQEEL ¹⁶ .E ¹⁷ .FE ¹⁸ .E ¹⁹	348
SERIGGG ¹ RENA ² KNYLA ³ DH ⁴ ED ⁵ VE ⁶ DE ⁷ VR ⁸ LK ⁹ VRAAY ¹⁰ GIS ¹¹ SDVPEEDLPTTE ¹² .DE ¹³ .QI ¹⁴ .N ¹⁵ ..ILPDDST ¹⁶.....EE ¹⁷	355
DERIGGG ¹ KE ² KTI ³ AY ⁴ IA ⁵ ER ⁶ PE ⁷ ME ⁸ QE ⁹ IR ¹⁰ DRV ¹¹ MAA ¹² IRAGNAGEAPALAPAPAAPEAAEA ¹³	363
DKKLGGG ¹ RENS ² KA ³ FL ⁴ KN ⁵ PEIA ⁶ DEIT ⁷ KA ⁸ IQNSM ⁹ GIEGMISGS ¹⁰ ..EDDEGE ¹¹ .E ¹²	343
DKKLGGG ¹ RENA ² KALL ³ KED ⁴ KALA ⁵ DEIT ⁶ LK ⁷ IKESIG ⁸ SNEEIMPL ⁹ ..PDEPLE ¹⁰ ..EME ¹¹	347
DKKLGGG ¹ RENA ² KALL ³ KED ⁴ KALA ⁵ DEIT ⁶ LK ⁷ IKESIG ⁸ SNEEIMPL ⁹ ..PDEPLE ¹⁰ ..EME ¹¹	347
DTKLGGGR ¹ DTV ² KEL ³ IK ⁴ DN ⁵ PELA ⁶ E ⁷ LEAK ⁸ IREKLQAK ⁹	343
GTKIGQG ¹ KNN ² AVK ³ WL ⁴ KN ⁵ PEIA ⁶ DK ⁷ LE ⁸ QE ⁹ IRNTLA ¹⁰ SNPNSVLK ¹¹ ..ATASDSND ¹² ESDVEEFSE ¹³.....EEL ¹⁴	372
GAKIGGQ ¹ KDN ² VR ³ VL ⁴ KN ⁵ PEIS ⁶ DEIDAK ⁷ IRALNG ⁸ VMHITEG ⁹ ..TQDET ¹⁰.....GERPE ¹¹.....E ¹²	348
GAKIGGQ ¹ KDN ² VR ³ VL ⁴ KN ⁵ PEIS ⁶ DEIDAK ⁷ IRALNG ⁸ VMHITEG ⁹ ..TQDET ¹⁰.....GERPE ¹¹.....E ¹²	348
GAKIGGQ ¹ KDN ² VR ³ VL ⁴ KN ⁵ PEIS ⁶ DEIDAK ⁷ IRALNG ⁸ VMHITEG ⁹ ..TQDET ¹⁰.....GERPE ¹¹.....E ¹²	348
GERIGGG ¹ RD ² NC ³ REFL ⁴ RENA ⁵ E ⁶ LAR ⁷ EI ⁸ ENK ⁹ VREHL ¹⁰ GVTPMGAV ¹¹ ..TLAEEVEED ¹²	352
GDKIGQG ¹ KAN ² ACKYL ³ KN ⁴ PEIA ⁵ AKT ⁶ L ⁷ DKKL ⁸ REMLLN ⁹ PENMQLI ¹⁰ ..AETSSAAD ¹¹ VEFGAVPE ¹².....EF ¹³	354
GDKIGGQ ¹ KAN ² ACKYL ³ KN ⁴ PEIA ⁵ AKT ⁶ L ⁷ DKKL ⁸ REMLLN ⁹ PENMQLI ¹⁰ ..AETSSAAD ¹¹ VEFGAVPE ¹².....EF ¹³	354
GNKIGQG ¹ KNN ² VIRY ³ FEENT ⁴ QIA ⁵ E ⁶ EI ⁷ ERN ⁸ IREQLLT ⁹ TGTNGAV ¹⁰ ..Q ¹¹ .I ¹² .EDEE ¹³ EPD ¹⁴ ..LLE ¹⁵.....S ¹⁶	349
GNKIGQG ¹ KNN ² VIRY ³ FEENN ⁴ QIA ⁵ E ⁶ EI ⁷ ERN ⁸ IREQLLT ⁹ TGTNGAV ¹⁰ ..Q ¹¹ .I ¹² .EDEE ¹³ EPD ¹⁴ ..LLE ¹⁵.....S ¹⁶	349
GNKIGQG ¹ KNN ² VIRY ³ LEEN ⁴ PQIST ⁵ EI ⁶ EAV ⁷ IREQLLT ⁸ KASDQTA ⁹ ..A ¹⁰ .HDETEE ¹¹ EPD ¹² ..LLES ¹³	349
GSKIGGQ ¹ KAN ² AKYL ³ EN ⁴ PEI ⁵ IG ⁶ EIE ⁷ EQ	

logo

			E	I	E	E	
NTDB id 600 KW2 RS01765 WP 011675413.1	.....	387					
NTDB id 269 KZH43 RS08665 WP 001085462.1	EIEIEE	388					
NTDB id 228 SPD RS09265 WP 001085462.1	EIEIEE	388					
NTDB id 194 SPR RS08825 WP 001085462.1	EIEIEE	388					
NTDB id 159 SP RS09750 WP 001085462.1	EIEIEE	388					
NTDB id 527 SMSK321 RS11065 WP 001085454.1	EIEIEE	384					
NTDB id 499 SM12261 RS08315 WP 078228268.1	EIEIEE	384					
NTDB id 453 Spy49 1753c ACI62003.1	EIED..	378					
NTDB id 408 SMU RS09530 WP 002262392.1	ELED..	383					
NTDB id 115 BSU 16940 NP 389576.2	.....	348					
NTDB id 625 LCA RS02525 WP 011374196.1	.....	355					
NTDB id 1313 DR RS12030 WP 010888966.1	.....	363					
NTDB id 1245 Cj1673c YP 002345041.1	.....	343					
NTDB id 1214 NCTC11637 00359 SQJ03206.1	.....	347					
NTDB id 1211 C694 RS00795 WP 000963128.1	.....	347					
NTDB id 1334 RAOC RS04870 WP 004918236.1	.....	343					
NTDB id 1389 A4U84 RS07560 WP 021112712.1	.....	372					
NTDB id 1130 NGFG RS03960 WP 003688695.1	.....	348					
NTDB id 1124 NGFG RS03960 WP 003688695.1	.....	348					
NTDB id 1123 OK783 RS03845 WP 003688695.1	.....	348					
NTDB id 1427 RS RS02760 WP 011000510.1	.....	352					
NTDB id 1165 A1552VC RS01565 WP 000344154.1	.....	354					
NTDB id 1142 GTF74 RS11550 WP 000344154.1	.....	354					
NTDB id 201002 KAB03 RS06660 WP 000344169.1	.....	349					
NTDB id 1074 ABD1 RS10195 WP 000344167.1	.....	349					
NTDB id 1022 ACIAD RS06390 WP 004925639.1	.....	349					
NTDB id 1205 PSJM300 05545 AFN77183.1	.....	347					
consensus							

-  non conserved
-  similar
-  ≥ 50% conserved