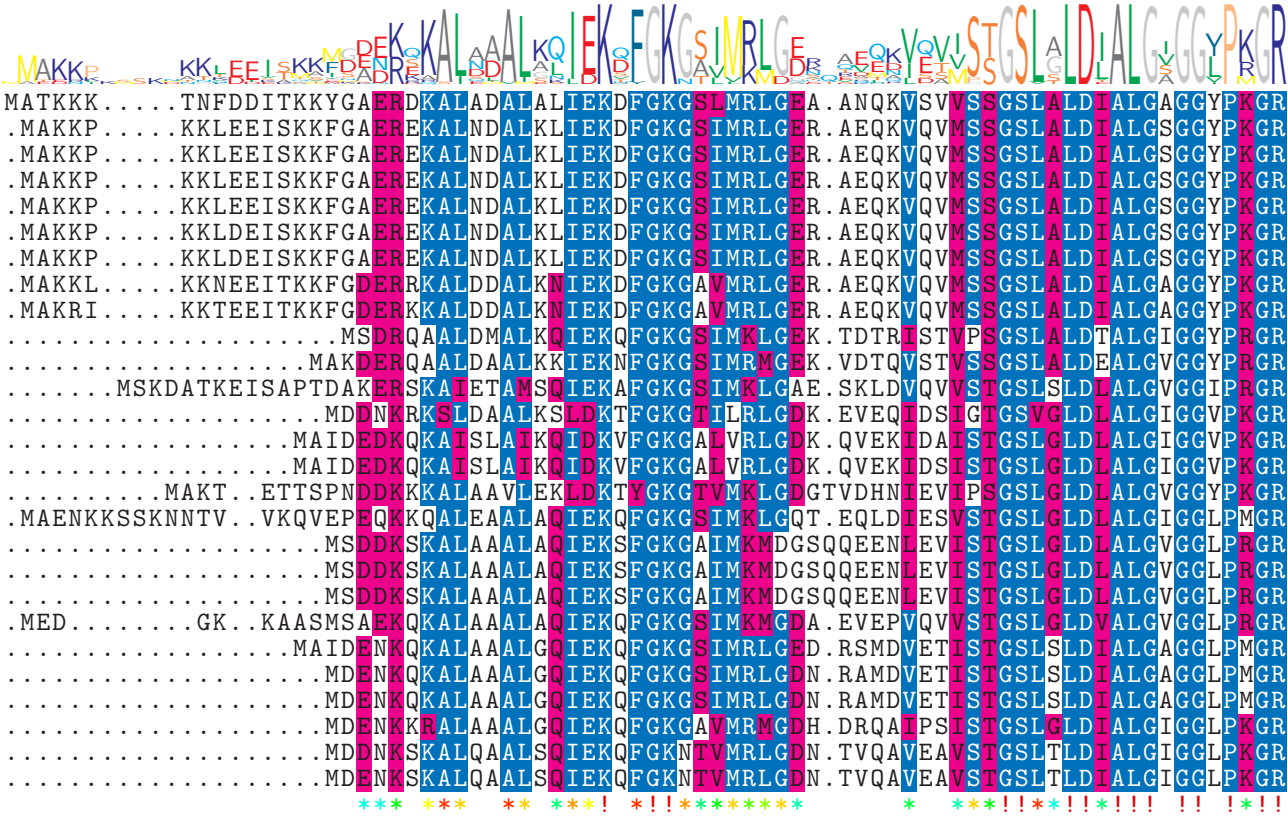


logo

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 256138 AM336 RS02170 WP 015370055.1
NTDB id 1165 A1552VC RS01565 WP 000344154.1
NTDB id 1142 GTF74 RS11550 WP 000344154.1
NTDB id 1205 PSJM300 05545 AFN77183.1
NTDB id 1022 ACIAD RS06390 WP 004925639.1
NTDB id 1074 ABD1 RS10195 WP 000344167.1
consensus

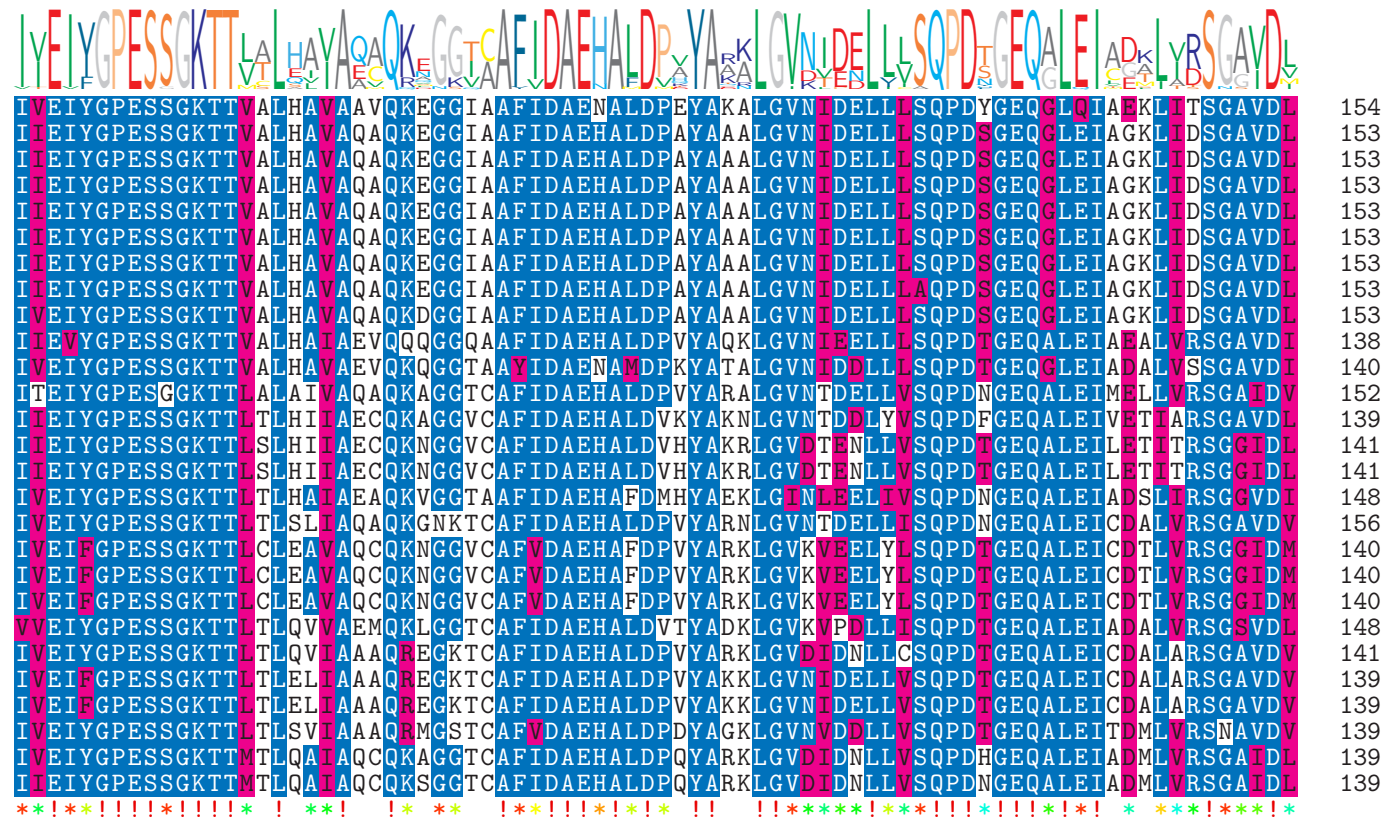


74
73
73
73
73
73
73
73
73
58
60
72
59
61
61
68
76
60
60
60
68
61
59
59
59
59
59

```

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 011000510.1
NTDB id 256138 AM336 RS02170 WP 015370055.1
NTDB id 1165 A1552VC RS01565 WP 000344154.1
NTDB id 1142 GTF74 RS11550 WP 000344154.1
NTDB id 1205 PSJM300 05545 AFN77183.1
NTDB id 1022 ACIAD RS06390 WP 0004925639.1
NTDB id 1074 ABD1 RS10195 WP 000344167.1
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 256138 AM336 RS02170 WP 015370055.1
NTDB id 1165 A1552VC RS01565 WP 000344154.1
NTDB id 1142 GTF74 RS11550 WP 000344154.1
NTDB id 1205 PSJM300 05545 AFN77183.1
NTDB id 1022 ACIAD RS06390 WP 0004925639.1
NTDB id 1074 ABD1 RS10195 WP 000344167.1
consensus

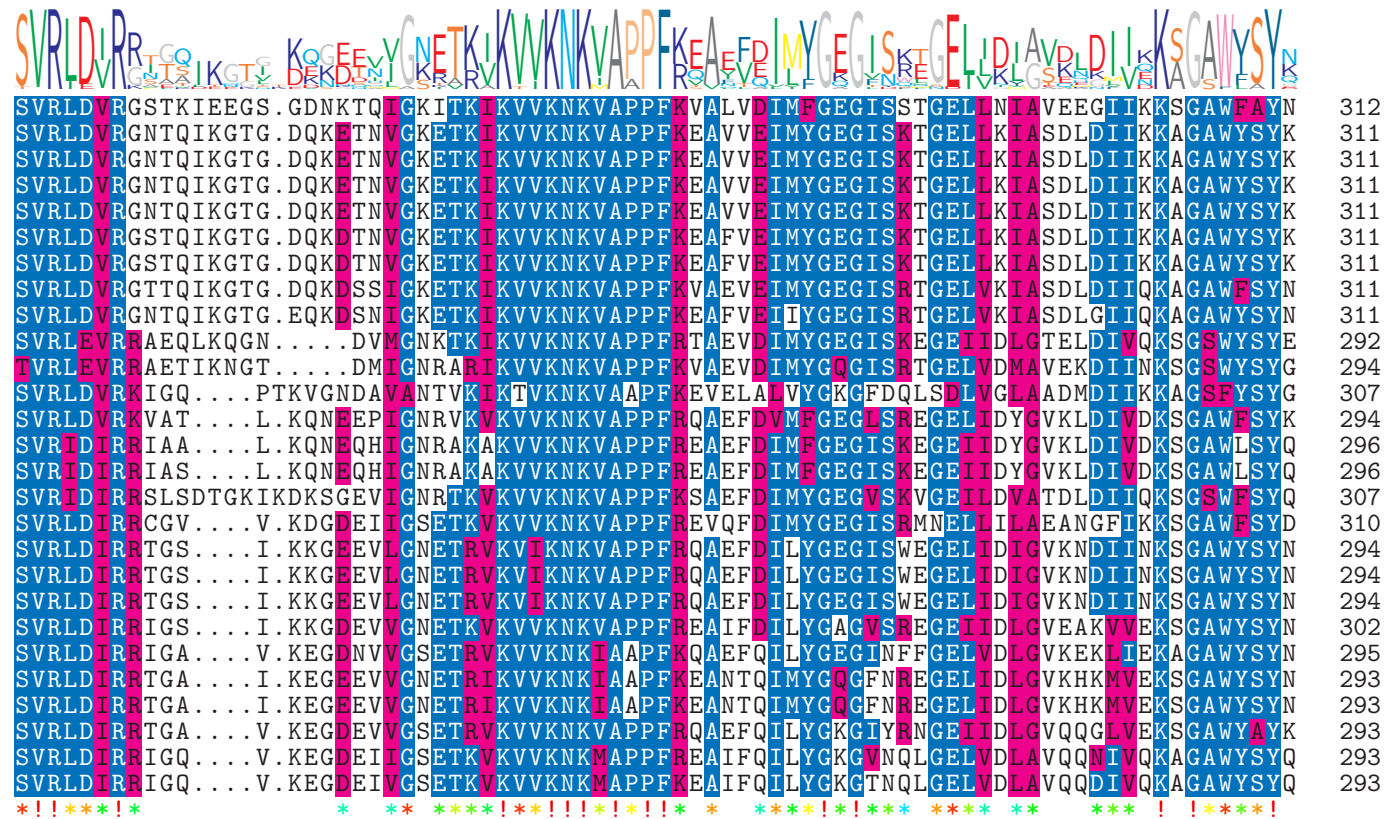
```



```

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 256138 AM336 RS02170 WP 015370055.1
NTDB id 1165 A1552VC RS01565 WP 000344154.1
NTDB id 1142 GTF74 RS11550 WP 000344154.1
NTDB id 1205 PSJM300 05545 AFN77183.1
NTDB id 1022 ACIAD RS06390 WP 0004925639.1
NTDB id 1074 ABD1 RS10195 WP 000344167.1
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 256138 AM336 RS02170 WP 015370055.1
NTDB id 1165 A1552VC RS01565 WP 000344154.1
NTDB id 1142 GTF74 RS11550 WP 000344154.1
NTDB id 1205 PSJM300 05545 AFN77183.1
NTDB id 1022 ACIAD RS06390 WP 004925639.1
NTDB id 1074 ABD1 RS10195 WP 000344167.1
consensus

```

Sequence	Score
DEKIGQGA ⁺ EA ⁺ KA ⁺ KN ⁺ YL ⁺ KE ⁺ HN ⁺ Q ⁺ D ⁺ VE ⁺ ID ⁺ HK ⁺ V ⁺ RA ⁺ AH ⁺ G ⁺ LDDSEVAETEEETTAS ⁺ KT ⁺ KA ⁺ KAK ⁺ KE ⁺ FA ⁺ VETEEIELE ⁺ LED ⁺	387
DEKIGQGS ⁺ EN ⁺ AK ⁺ KYL ⁺ AE ⁺ HP ⁺ EI ⁺ FD ⁺ ID ⁺ KQ ⁺ VR ⁺ SK ⁺ FL ⁺ IDGEEVSEQDTENKKDE....PKKEEA..VNEEVPLDLGDELEIE	385
DEKIGQGS ⁺ EN ⁺ AK ⁺ KYL ⁺ AE ⁺ HP ⁺ EI ⁺ FD ⁺ ID ⁺ KQ ⁺ VR ⁺ SK ⁺ FL ⁺ IDGEEVSEQDTENKKDE....PKKEEA..VNEEVPLDLGDELEIE	385
DEKIGQGS ⁺ EN ⁺ AK ⁺ KYL ⁺ AE ⁺ HP ⁺ EI ⁺ FD ⁺ ID ⁺ KQ ⁺ VR ⁺ SK ⁺ FL ⁺ IDGEEVSEQDTENKKDE....PKKEEA..VNEEVPLDLGDELEIE	385
DEKIGQGS ⁺ EN ⁺ AK ⁺ KYL ⁺ AD ⁺ NP ⁺ EV ⁺ FA ⁺ IE ⁺ DH ⁺ Q ⁺ VR ⁺ VQ ⁺ FL ⁺ IDGEEAAE....SKKDE....VAQVDS..VNEEVTLDLGDLEIE	381
DEKIGQGS ⁺ EN ⁺ AK ⁺ KYL ⁺ AD ⁺ NP ⁺ EI ⁺ FD ⁺ ID ⁺ HQ ⁺ VR ⁺ VQ ⁺ FL ⁺ IDGEEIAE....SKKDE....AAQVDS..VNEEVTLDLGDLEIE	381
GEKIGQGS ⁺ EN ⁺ AK ⁺ RYL ⁺ AD ⁺ HP ⁺ QL ⁺ FD ⁺ IED ⁺ RK ⁺ VR ⁺ VK ⁺ FL ⁺ LEESEEEASAMAVE.....E.....TDDLALDLNGIEIE	377
GEKIGQGS ⁺ EN ⁺ AK ⁺ KFL ⁺ AD ⁺ NP ⁺ EI ⁺ FD ⁺ ID ⁺ HK ⁺ VR ⁺ VQ ⁺ GL ⁺ IEEDNTEEKQSSKEK.....ETDEK..ADKNLVLELDDTIELE	382
EERLGGGREN ⁺ AK ⁺ QFL ⁺ KEN ⁺ KDIM ⁺ LM ⁺ IQEQ ⁺ IREHYGLDNGGVVQQAEETQEEL.EFE.E.....	348
SERIGGGREN ⁺ AK ⁺ NYL ⁺ AD ⁺ HED ⁺ VE ⁺ DEV ⁺ RL ⁺ KV ⁺ RAAY ⁺ GISDVPEEDLPTTEDE.QI.NILPDDST.....EE.....	355
DERIGGGKEK ⁺ TIAY ⁺ IA ⁺ ERP ⁺ MEQE ⁺ IRDR ⁺ VMAA ⁺ IRAGNAGEAPALAPAPAAPEAAAA.....	363
DKKLGGGREN ⁺ SKA ⁺ FL ⁺ KEN ⁺ PEI ⁺ AD ⁺ EIT ⁺ KA ⁺ IQNSM ⁺ GI ⁺ EGM.....ISGSEDDE.....GEF.....	343
DKKLGGGREN ⁺ AK ⁺ ALL ⁺ KED ⁺ KAL ⁺ AD ⁺ EIT ⁺ LK ⁺ IKES ⁺ IGSNEE....IMPLPDEP.....LEEM..E.....	347
DKKLGGGREN ⁺ AK ⁺ ALL ⁺ KED ⁺ KAL ⁺ AD ⁺ EIT ⁺ LK ⁺ IKES ⁺ IGSNEE....IMPLPDEP.....LEEM..E.....	347
DTKLGGGRD ⁺ TV ⁺ KEL ⁺ IKD ⁺ NP ⁺ EIA ⁺ ELE ⁺ EAK ⁺ IREKLQAK.....	343
GTKIGQQK ⁺ NN ⁺ AV ⁺ KWL ⁺ KEN ⁺ PEI ⁺ AD ⁺ KL ⁺ EQ ⁺ IRNT ⁺ LAS ⁺ NP ⁺ N....SVLKATASDSNDES ⁺ VE ⁺ EF ⁺ ..SEEL.....	372
GAKIGQK ⁺ KDN ⁺ VR ⁺ VWL ⁺ KEN ⁺ PEI ⁺ SD ⁺ EID ⁺ AK ⁺ IRAL ⁺ NG ⁺ VE ⁺ MH.....ITEGT.....QDET ⁺ DGER ⁺ ..PEE.....	348
GAKIGQK ⁺ KDN ⁺ VR ⁺ VWL ⁺ KEN ⁺ PEI ⁺ SD ⁺ EID ⁺ AK ⁺ IRAL ⁺ NG ⁺ VE ⁺ MH.....ITEGT.....QDET ⁺ DGER ⁺ ..PEE.....	348
GAKIGQK ⁺ KDN ⁺ VR ⁺ VWL ⁺ KEN ⁺ PEI ⁺ SD ⁺ EID ⁺ AK ⁺ IRAL ⁺ NG ⁺ VE ⁺ MH.....ITEGT.....QDET ⁺ DGER ⁺ ..PEE.....	348
GERIGGGRD ⁺ NC ⁺ REF ⁺ LREN ⁺ AE ⁺ LARE ⁺ IE ⁺ EN ⁺ KV ⁺ REHL ⁺ GV ⁺ TPM....GAVTLAE.EVEED.....	352
GD ⁺ KIGQQK ⁺ ANA ⁺ IS ⁺ WL ⁺ KDN ⁺ PAA ⁺ AK ⁺ EIE ⁺ KKV ⁺ RELL ⁺ NN ⁺ QD....STPDFAVD....GNDAAE ⁺ ET ⁺ ..EQDF.....	352
GDKIGQK ⁺ KAN ⁺ ACK ⁺ YL ⁺ KEN ⁺ PEI ⁺ AK ⁺ TL ⁺ DKKL ⁺ REML ⁺ LN ⁺ PN....MQLIAETSSAADDVEFGAV..PEEF.....	354
GD ⁺ KIGQK ⁺ KAN ⁺ ACK ⁺ YL ⁺ KEN ⁺ PEI ⁺ AK ⁺ TL ⁺ DKKL ⁺ REML ⁺ LN ⁺ PN....MQLIAETSSAADDVEFGAV..PEEF.....	354
GSKIGQK ⁺ KANA ⁺ AK ⁺ YLE ⁺ EN ⁺ PEI ⁺ GQ ⁺ EIE ⁺ QQI ⁺ RAK ⁺ LL ⁺ VT ⁺ SA....NTKATPVAEDLADADI.....	347
GNKIGQK ⁺ KNN ⁺ VIR ⁺ YLE ⁺ EN ⁺ PQ ⁺ ISTE ⁺ IE ⁺ AV ⁺ IREQL ⁺ LT ⁺ KAS....DQ ⁺ TAA.HDETEEEPDLLE ⁺ S.....	349
GN ⁺ KIGQK ⁺ KNN ⁺ VIR ⁺ YLE ⁺ EN ⁺ PQ ⁺ IA ⁺ EIE ⁺ RN ⁺ IREQL ⁺ LT ⁺ TGT....NGAVQ.I.EDEEEPDLLE..S.....	349

logo

NTDB id 600 KW2 RS01765 WP 011675413.1	...	387
NTDB id 269 KZH43 RS08665 WP 001085462.1	IEE	388
NTDB id 228 SPD RS09265 WP 001085462.1	IEE	388
NTDB id 194 SPR RS08825 WP 001085462.1	IEE	388
NTDB id 159 SP RS09750 WP 001085462.1	IEE	388
NTDB id 527 SMSK321 RS11065 WP 001085454.1	IEE	384
NTDB id 499 SM12261 RS08315 WP 078228268.1	IEE	384
NTDB id 453 Spy49 1753c ACI62003.1	D..	378
NTDB id 408 SMU RS09530 WP 002262392.1	D..	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 256138 AM336 RS02170 WP 015370055.1	...	352
NTDB id 1165 A1552VC RS01565 WP 000344154.1	...	354
NTDB id 1142 GTF74 RS11550 WP 000344154.1	...	354
NTDB id 1205 PSJM300 05545 AFN77183.1	...	347
NTDB id 1022 ACIAD RS06390 WP 004925639.1	...	349
NTDB id 1074 ABD1 RS10195 WP 000344167.1	...	349

consensus

 non conserved
 similar
 ≥ 50% conserved