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|----------------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----|-----|-----|
| NTDB id 1313 DR RS12030 WP 010888966.1       | I | T | E | I | Y | G | P | E | S | S | G | K | T | T | L | A | L | A | I | V | A | Q | A | Q | K | A | G | G | T | C | A | F | I | D | A | E | H | A | L | D | P | V | Y | A | R | A | L | G | V | N | T | D | E | L | L | V | S | Q | P | D | N | G | E | Q | A | L | E | I | M | E | L | L | V | R | S | G | A | I | D   | V   | 152 |
| NTDB id 1245 Cj1673c YP 002345041.1          | I | T | E | I | Y | G | P | E | S | S | G | K | T | T | L | T | L | H | I | I | A | E | C | Q | K | A | G | G | V | C | A | F | I | D | A | E | H | A | L | D | V | K | Y | A | K | N | L | G | V | N | T | D | D | L | L | V | S | Q | P | D | F | G | E | Q | A | L | E | I | V | E | T | T | A | R | S | G | A | V | D   | L   | 139 |
| NTDB id 1214 NCTC11637 00359 SQJ03206.1      | I | T | E | I | Y | G | P | E | S | S | G | K | T | T | L | S | L | H | I | I | A | E | C | Q | K | N | G | G | V | C | A | F | I | D | A | E | H | A | L | D | V | H | Y | A | K | R | L | G | V | D | T | E | N | L | L | V | S | Q | P | D | T | G | E | Q | A | L | E | I | L | E | T | T | R | S | G | I | D | L | 141 |     |     |
| NTDB id 1211 C694 RS00795 WP 000963128.1     | I | T | E | I | Y | G | P | E | S | S | G | K | T | T | L | S | L | H | I | I | A | E | C | Q | K | N | G | G | V | C | A | F | I | D | A | E | H | A | L | D | V | H | Y | A | K | R | L | G | V | D | T | E | N | L | L | V | S | Q | P | D | T | G | E | Q | A | L | E | I | L | E | T | T | R | S | G | I | D | L | 141 |     |     |
| NTDB id 1334 RA0C RS04870 WP 004918236.1     | I | V | E | I | Y | G | P | E | S | S | G | K | T | T | L | T | L | H | A | I | A | E | A | Q | K | V | G | G | T | A | A | F | I | D | A | E | H | A | F | D | M | H | Y | A | E | K | L | G | T | N | L | E | L | L | V | S | Q | P | D | N | G | E | Q | A | L | E | I | A | D | S | L | T | R | S | G | V | D | I | 148 |     |     |
| NTDB id 1389 A4U84 RS07560 WP 021112712.1    | I | V | E | I | Y | G | P | E | S | S | G | K | T | T | L | T | L | S | L | I | A | Q | A | Q | K | N | K | T | C | A | F | I | D | A | E | H | A | L | D | P | V | Y | A | R | N | L | G | V | N | T | D | E | L | L | V | S | Q | P | D | N | G | E | Q | A | L | E | I | C | D | A | L | V | R | S | G | A | V | D | V   | 156 |     |
| NTDB id 1130 NGFG RS03960 WP 003688695.1     | I | V | E | I | F | G | P | E | S | S | G | K | T | T | L | C | L | E | A | V | A | Q | Q | K | N | G | G | V | C | A | F | V | D | A | E | H | A | F | D | P | V | Y | A | R | K | L | G | V | K | V | E | L | L | V | S | Q | P | D | T | G | E | Q | A | L | E | I | C | D | T | L | V | R | S | G | G | I | D | M | 140 |     |     |
| NTDB id 1124 NGFG RS03960 WP 003688695.1     | I | V | E | I | F | G | P | E | S | S | G | K | T | T | L | C | L | E | A | V | A | Q | Q | K | N | G | G | V | C | A | F | V | D | A | E | H | A | F | D | P | V | Y | A | R | K | L | G | V | K | V | E | L | L | V | S | Q | P | D | T | G | E | Q | A | L | E | I | C | D | T | L | V | R | S | G | G | I | D | M | 140 |     |     |
| NTDB id 1123 OK783 RS03845 WP 003688695.1    | I | V | E | I | F | G | P | E | S | S | G | K | T | T | L | C | L | E | A | V | A | Q | Q | K | N | G | G | V | C | A | F | V | D | A | E | H | A | F | D | P | V | Y | A | R | K | L | G | V | K | V | E | L | L | V | S | Q | P | D | T | G | E | Q | A | L | E | I | C | D | T | L | V | R | S | G | G | I | D | M | 140 |     |     |
| NTDB id 1427 RS RS02760 WP 011000510.1       | V | V | E | I | Y | G | P | E | S | S | G | K | T | T | L | T | L | Q | V | V | A | E | M | Q | K | L | G | G | T | C | A | F | I | D | A | E | H | A | L | D | V | T | Y | A | D | K | L | G | V | K | V | P | D | L | L | V | S | Q | P | D | T | G | E | Q | A | L | E | I | A | D | A | L | V | R | S | G | S | V | D   | L   | 148 |
| NTDB id 1165 A1552VC RS01565 WP 000344154.1  | I | V | E | I | F | G | P | E | S | S | G | K | T | T | L | T | L | E | L | I | A | A | A | Q | R | E | G | K | T | C | A | F | I | D | A | E | H | A | L | D | P | V | Y | A | K | K | L | G | V | N | T | D | E | L | L | V | S | Q | P | D | T | G | E | Q | A | L | E | I | C | D | A | L | A | R | S | G | A | V | D   | V   | 139 |
| NTDB id 1142 GTF74 RS11550 WP 000344154.1    | I | V | E | I | F | G | P | E | S | S | G | K | T | T | L | T | L | E | L | I | A | A | A | Q | R | E | G | K | T | C | A | F | I | D | A | E | H | A | L | D | P | V | Y | A | K | K | L | G | V | N | T | D | E | L | L | V | S | Q | P | D | T | G | E | Q | A | L | E | I | C | D | A | L | A | R | S | G | A | V | D   | V   | 139 |
| NTDB id 1205 PSJM300 05545 AFN77183.1        | I | V | E | I | Y | G | P | E | S | S | G | K | T | T | L | T | L | S | V | I | A | A | A | Q | R | M | G | S | T | C | A | F | V | D | A | E | H | A | L | D | P | D | Y | A | G | K | L | G | V | N | T | D | D | L | L | V | S | Q | P | D | T | G | E | Q | A | L | E | I | T | D | M | L | V | R | S | N | A | V | D   | V   | 139 |
| NTDB id 1022 ACIAD RS06390 WP 004925639.1    | I | V | E | I | Y | G | P | E | S | S | G | K | T | T | M | T | L | Q | A | I | A | Q | Q | K | A | G | G | T | C | A | F | I | D | A | E | H | A | L | D | P | Q | Y | A | R | K | L | G | V | D | I | D | N | L | L | V | S | Q | P | D | H | G | E | Q | A | L | E | I | A | D | M | L | V | R | S | G | A | I | D | L   | 139 |     |
| NTDB id 1074 ABD1 RS10195 WP 000344167.1     | I | T | E | I | Y | G | P | E | S | S | G | K | T | T | M | T | L | Q | A | I | A | Q | Q | K | S | G | G | T | C | A | F | I | D | A | E | H | A | L | D | P | Q | Y | A | R | K | L | G | V | D | I | D | N | L | L | V | S | Q | P | D | N | G | E | Q | A | L | E | I | A | D | M | L | V | R | S | G | A | I | D | L   | 139 |     |
| NTDB id 1039154 CIL07 RS10800 WP 003606105.1 | I | V | E | V | Y | G | P | E | S | T | G | K | T | T | I | A | L | Q | T | I | A | E | L | Q | K | S | G | G | K | A | Y | I | D | A | E | N | A | M | D | P | K | Y | A | A | E | L | G | V | N | T | D | D | L | L | V | S | Q | P | N | S | G | E | Q | G | L | E | I | A | E | M | L | I | E | S | A | A | V | D | I   | 153 |     |
| NTDB id 600 KW2 RS01765 WP 011675413.1       | I | V | E | I | Y | G | P | E | S | S | G | K | T | T | V | A | L | H | A | V | A | A | V | Q | K | E | G | G | I | A | A | F | I | D | A | E | N | A | L | D | P | E | Y | A | K | A | L | G | V | N | T | D | E | L | L | V | S | Q | P | D | Y | G | E | Q | G | L | Q | I | A | E | K | L | I | T | S | G | A | V | D   | L   | 154 |
| NTDB id 269 KZH43 RS08665 WP 001085462.1     | I | T | E | I | Y | G | P | E | S | S | G | K | T | T | V | A | L | H | A | V | A | Q | A | Q | K | E | G | G | I | A | A | F | I | D | A | E | H | A | L | D | P | A | Y | A | A | L | G | V | N | T | D | E | L | L | V | S | Q | P | D | S | G | E | Q | G | L | E | I | A | G | K | L | I | D | S | G | A | V | D | L   | 153 |     |
| NTDB id 228 SPD RS09265 WP 001085462.1       | I | T | E | I | Y | G | P | E | S | S | G | K | T | T | V | A | L | H | A | V | A | Q | A | Q | K | E | G | G | I | A | A | F | I | D | A | E | H | A | L | D | P | A | Y | A | A | L | G | V | N | T | D | E | L | L | V | S | Q | P | D | S | G | E | Q | G | L | E | I | A | G | K | L | I | D | S | G | A | V | D | L   | 153 |     |
| NTDB id 194 SPR RS08825 WP 001085462.1       | I | T | E | I | Y | G | P | E | S | S | G | K | T | T | V | A | L | H | A | V | A | Q | A | Q | K | E | G | G | I | A | A | F | I | D | A | E | H | A | L | D | P | A | Y | A | A | L | G | V | N | T | D | E | L | L | V | S | Q | P | D | S | G | E | Q | G | L | E | I | A | G | K | L | I | D | S | G | A | V | D | L   | 153 |     |
| NTDB id 159 SP RS09750 WP 001085462.1        | I | T | E | I | Y | G | P | E | S | S | G | K | T | T | V | A | L | H | A | V | A | Q | A | Q | K | E | G | G | I | A | A | F | I | D | A | E | H | A | L | D | P | A | Y | A | A | L | G | V | N | T | D | E | L | L | V | S | Q | P | D | S | G | E | Q | G | L | E | I | A | G | K | L | I | D | S | G | A | V | D | L   | 153 |     |
| NTDB id 499 SM12261 RS08315 WP 078228268.1   | I | T | E | I | Y | G | P | E | S | S | G | K | T | T | V | A | L | H | A | V | A | Q | A | Q | K | E | G | G | I | A | A | F | I | D | A | E | H | A | L | D | P | A | Y | A | A | L | G | V | N | T | D | E | L | L | V | S | Q | P | D | S | G | E | Q | G | L | E | I | A | G | K | L | I | D | S | G | A | V | D | L   | 153 |     |
| NTDB id 527 SMSK321 RS11065 WP 001085454.1   | I | T | E | I | Y | G | P | E | S | S | G | K | T | T | V | A | L | H | A | V | A | Q | A | Q | K | E | G | G | I | A | A | F | I | D | A | E | H | A | L | D | P | A | Y | A | A | L | G | V | N | T | D | E | L | L | V | S | Q | P | D | S | G | E | Q | G | L | E | I | A | G | K | L | I | D | S | G | A | V | D | L   | 153 |     |
| NTDB id 453 Spy49 1753c ACI62003.1           | I | T | E | I | Y | G | P | E | S | S | G | K | T | T | V | A | L | H | A | V | A | Q | A | Q | K | E | G | G | I | A | A | F | I | D | A | E | H | A | L | D | P | A | Y | A | A | L | G | V | N | T | D | E | L | L | V | A | Q | P | D | S | G | E | Q | G | L | E | I | A | G | K | L | I | D | S | G | A | V | D | L   | 153 |     |
| NTDB id 408 SMU RS09530 WP 002262392.1       | I | V | E | I | Y | G | P | E | S | S | G | K | T | T | V | A | L | H | A | V | A | Q | A | Q | K | D | G | G | I | A | A | F | I | D | A | E | H | A | L | D | P | A | Y | A | A | L | G | V | N | T | D | E | L | L | V | S | Q | P | D | S | G | E | Q | G | L | E | I | A | G | K | L | I | D | S | G | A | V | D | L   | 153 |     |
| NTDB id 625 LCA RS02525 WP 011374196.1       | I | V | E | I | Y | G | P | E | S | S | G | K | T | T | V | A | L | H | A | V | A | E | V | Q | K | Q | G | G | T | A | A | Y | I | D | A | E | N | A | M | D | P | K | Y | A | T | A | L | G | V | N | T | D | D | L | L | V | S | Q | P | D | T | G | E | Q | G | L | E | I | A | D | A | L | V | S | S | G | A | V | D   | I   | 140 |
| NTDB id 115 BSU 16940 NP 389576.2            | I | L | E | V | Y | G | P | E | S | S | G | K | T | T | V | A | L | H | A | I | A | E | V | Q | Q | Q | G | G | Q | A | A | F | I | D | A | E | H | A | L | D | P | V | Y | A | Q | K | L | G | V | N | T | D | E | L | L | V | S | Q | P | D | T | G | E | Q | A | L | E | I | A | E | A | L | V | R |   |   |   |   |     |     |     |



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|----------------------------------------------|----------------------------------------------------------------------------------|-----|
| NTDB id 1313 DR RS12030 WP 010888966.1       | SVRLDVRKIGQ...PTKVGNDAVANTVKTITVKNKVAAPPFKEVELATVYCKGFDQLSDLVGLAA...DMDIKKAGS    | 303 |
| NTDB id 1245 Cj1673c YP 002345041.1          | SVRLDVRKVAT...L.KQNEEPIGNRVKVVVKNKVAPPFQAQEFDMFGEGLSHEGELIDYGV...KLDIVDKSGAW     | 290 |
| NTDB id 1214 NCTC11637 00359 SQJ03206.1      | SVRIDIRRIAA...L.KQNEQHIENRAKAKVVKNKVAPPFREAQEFDMFGEGLSHEGELIDYGV...KLDIVDKSGAW   | 292 |
| NTDB id 1211 C694 RS00795 WP 000963128.1     | SVRIDIRRIAS...L.KQNEQHIENRAKAKVVKNKVAPPFREAQEFDMFGEGLSHEGELIDYGV...KLDIVDKSGAW   | 292 |
| NTDB id 1334 RAOC RS04870 WP 004918236.1     | SVRIDIRRLSDTGKIKDKSGEVIENRTKVVVKNKVAPPFQAQEFDMYGEGLSVKVGELLDVAT...DLDIQKSGSW     | 303 |
| NTDB id 1389 A4U84 RS07560 WP 021112712.1    | SVRLDIRRCGV...V.KDGEIIEGSETKVVVKNKVAPPFREVQFDIMYGEGLSHEGELIDYGV...KNDIINKSGAW    | 306 |
| NTDB id 1130 NGFG RS03960 WP 003688695.1     | SVRLDIRRTGS...I.KKGEVVLGNETRNVKIVKNKVAPPFQAQEFDILYGEGLSHEGELIDYGV...KNDIINKSGAW  | 290 |
| NTDB id 1124 NGFG RS03960 WP 003688695.1     | SVRLDIRRTGS...I.KKGEVVLGNETRNVKIVKNKVAPPFQAQEFDILYGEGLSHEGELIDYGV...KNDIINKSGAW  | 290 |
| NTDB id 1123 OK783 RS03845 WP 003688695.1    | SVRLDIRRTGS...I.KKGEVVLGNETRNVKIVKNKVAPPFQAQEFDILYGEGLSHEGELIDYGV...KNDIINKSGAW  | 290 |
| NTDB id 1427 RS RS02760 WP 011000510.1       | SVRLDIRRIGS...I.KKGEVVLGNETKVVVKNKVAPPFREAIFDILYGAQVSHGEGELIDLV...EAKVVEKSGAW    | 298 |
| NTDB id 1165 A1552VC RS01565 WP 000344154.1  | SVRLDIRRTGA...I.KEGEEVVLGNETRIVVKNKVAAPPFKEANTQIMYGGCFNREGELIDLGV...KHKMVEKSGAW  | 289 |
| NTDB id 1142 GTF74 RS11550 WP 000344154.1    | SVRLDIRRTGA...I.KEGEEVVLGNETRIVVKNKVAAPPFKEANTQIMYGGCFNREGELIDLGV...KHKMVEKSGAW  | 289 |
| NTDB id 1205 PSJM300 05545 AFN77183.1        | SVRLDIRRTGA...V.KEGEEVVLGNETRIVVKNKVAPPFQAQEFQILYCKGTYRNGELIDLGV...QQGLVEKSGAW   | 289 |
| NTDB id 1022 ACIAD RS06390 WP 004925639.1    | SVRLDIRRIGQ...V.KEGDEIIEGSETKVVVKNKMAAPPFREAIFQILYCKGVNQLGELVDLAV...QQNIVQKAGAW  | 289 |
| NTDB id 1074 ABD1 RS10195 WP 000344167.1     | SVRLDIRRIGQ...V.KEGDEIIEGSETKVVVKNKMAAPPFREAIFQILYCKGVNQLGELVDLAV...QQNIVQKAGAW  | 289 |
| NTDB id 1039154 CIL07 RS10800 WP 003606105.1 | SVRLVVKRGGQVQKDGK...DVMGFASKLKVIVKNKVAPPFQSVETTMSEGHGIEHNTDMINLATDKDNDIDVITKSGSW | 307 |
| NTDB id 600 KW2 RS01765 WP 011675413.1       | SVRLDVRGSTKIEEGS.GDNKTQIGKIKTKVIVKNKVAPPFQVALVDIMFGEGLSSTGELLNIAV...EEGIKKSGAW   | 308 |
| NTDB id 269 KZH43 RS08665 WP 001085462.1     | SVRLDVRGNTQIKGTG.DQKQETNVGKETKIVVKNKVAPPFKEAVVEIMYGEGLSSTGELLKIAS...DLDIKKAGAW   | 307 |
| NTDB id 228 SPD RS09265 WP 001085462.1       | SVRLDVRGNTQIKGTG.DQKQETNVGKETKIVVKNKVAPPFKEAVVEIMYGEGLSSTGELLKIAS...DLDIKKAGAW   | 307 |
| NTDB id 194 SPR RS08825 WP 001085462.1       | SVRLDVRGNTQIKGTG.DQKQETNVGKETKIVVKNKVAPPFKEAVVEIMYGEGLSSTGELLKIAS...DLDIKKAGAW   | 307 |
| NTDB id 159 SP RS09750 WP 001085462.1        | SVRLDVRGNTQIKGTG.DQKQETNVGKETKIVVKNKVAPPFKEAVVEIMYGEGLSSTGELLKIAS...DLDIKKAGAW   | 307 |
| NTDB id 499 SM12261 RS08315 WP 078228268.1   | SVRLDVRGNTQIKGTG.DQKQETNVGKETKIVVKNKVAPPFKEAVVEIMYGEGLSSTGELLKIAS...DLDIKKAGAW   | 307 |
| NTDB id 527 SMSK321 RS11065 WP 001085454.1   | SVRLDVRGNTQIKGTG.DQKQETNVGKETKIVVKNKVAPPFKEAVVEIMYGEGLSSTGELLKIAS...DLDIKKAGAW   | 307 |
| NTDB id 453 Spy49 1753c ACI62003.1           | SVRLDVRGTTQIKGTG.DQKQSSIVGKETKIVVKNKVAPPFQVAEVEIMYGEGLSSTGELVKIAS...DLDIQKAGAW   | 307 |
| NTDB id 408 SMU RS09530 WP 002262392.1       | SVRLDVRGNTQIKGTG.EQKQSNIVGKETKIVVKNKVAPPFQVAEVEIMYGEGLSSTGELVKIAS...DLGIQKAGAW   | 307 |
| NTDB id 625 LCA RS02525 WP 011374196.1       | TVRLEVRRAETIKNGT...DMIGNRARIVVKNKVAPPFQVAEVDIMYGGGISRTGELVDMAV...EKDIINKSGSW     | 290 |
| NTDB id 115 BSU 16940 NP 389576.2            | SVRLEVRRAEQLKQGN...DVMGNKTKIVVKNKVAPPFQVAEVDIMYGEGLSHEGELIDLGT...ELDIVQKSGSW     | 288 |
| consensus                                    | *!!***** * * * * * !*!!*!!*!!* * * * * !*!*** * * * * * * * * * !*!*             |     |

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|----------------------------------------------|--------------------------------------------------------------|-----|
| NTDB id 1313 DR RS12030 WP 010888966.1       | YSYGDERIGQCKEKTIAVIAERPEMEQEIRDRVMAAIRAGNAGEAPALAPAPAAPEAAEA | 363 |
| NTDB id 1245 Cj1673c YP 002345041.1          | FSYKDKKIGQGRENKAFLEKENPEIADEITKAIQNSMCIIEGMI                 | 343 |
| NTDB id 1214 NCTC11637 00359 SQJ03206.1      | LSYQDKKIGQGRENAKALLKEDKALADEITLTKIKESIGSNEEI                 | 347 |
| NTDB id 1211 C694 RS00795 WP 000963128.1     | LSYQDKKIGQGRENAKALLKEDKALADEITLTKIKESI                       | 347 |
| NTDB id 1334 RAOC RS04870 WP 004918236.1     | FSYQDTKIGQGRDITVKELTKDNPEIAEELAKITREKLQAK                    | 343 |
| NTDB id 1389 A4U84 RS07560 WP 021112712.1    | FSYDGTKIGQCKNNVAVKWLKENPEIADKLEQEIRNTLASNPNS                 | 372 |
| NTDB id 1130 NGFG RS03960 WP 003688695.1     | YSYNGAKIGQCKDNVVRVWLKENPEISDEIDAKITRALNCVEMHI                | 348 |
| NTDB id 1124 NGFG RS03960 WP 003688695.1     | YSYNGAKIGQCKDNVVRVWLKENPEISDEIDAKITRALNCVEMHI                | 348 |
| NTDB id 1123 OK783 RS03845 WP 003688695.1    | YSYNGAKIGQCKDNVVRVWLKENPEISDEIDAKITRALNCVEMHI                | 348 |
| NTDB id 1427 RS RS02760 WP 011000510.1       | YSYNGERIGQGRDNCREFLRENAELAREIENKVRREHLGVTPMG                 | 352 |
| NTDB id 1165 A1552VC RS01565 WP 000344154.1  | YSYNGDKIGQCKANACKYLKENPEIAKTLDKKLREMLLNPENM                  | 354 |
| NTDB id 1142 GTF74 RS11550 WP 000344154.1    | YSYNGDKIGQCKANACKYLKENPEIAKTLDKKLREMLLNPENM                  | 354 |
| NTDB id 1205 PSJM300 05545 AFN77183.1        | YAYKGSKIGQCKANAAKYLEENPEIGQEIEQQITRAKLLVTSAN                 | 347 |
| NTDB id 1022 ACIAD RS06390 WP 004925639.1    | YSYQGNKIGQCKNNVIRYLFENNCIAEIEIRNIREQLLTGTN                   | 349 |
| NTDB id 1074 ABD1 RS10195 WP 000344167.1     | YSYQGNKIGQCKNNVIRYLFENNCIAEIEIRNIREQLLTGTN                   | 349 |
| NTDB id 1039154 CIL07 RS10800 WP 003606105.1 | YNYGKERLGGQLVNAASHYLDEHPPEISKEIEEKIREQVA                     | 387 |
| NTDB id 600 KW2 RS01765 WP 011675413.1       | FAYNDEKIGQCAEKAKNYLKEHQDVFEIDHKVRAAHCLLDDSEVAETEET           | 387 |
| NTDB id 269 KZH43 RS08665 WP 001085462.1     | YSYKDEKIGQGSSENAKKYLAEHPEIFDEIDKQVRSKFC                      | 380 |
| NTDB id 228 SPD RS09265 WP 001085462.1       | YSYKDEKIGQGSSENAKKYLAEHPEIFDEIDKQVRSKFC                      | 380 |
| NTDB id 194 SPR RS08825 WP 001085462.1       | YSYKDEKIGQGSSENAKKYLAEHPEIFDEIDKQVRSKFC                      | 380 |
| NTDB id 159 SP RS09750 WP 001085462.1        | YSYKDEKIGQGSSENAKKYLAEHPEIFDEIDKQVRSKFC                      | 380 |
| NTDB id 499 SM12261 RS08315 WP 078228268.1   | YSYKDEKIGQGSSENAKKYLADNPEIFDEIDHQVVRVQFC                     | 376 |
| NTDB id 527 SMSK321 RS11065 WP 001085454.1   | YSYKDEKIGQGSSENAKKYLADNPEVFAEIDHQVVRVQFC                     | 376 |
| NTDB id 453 Spy49 1753c ACI62003.1           | FSYNGEKIGQGSSENAKRYLADHPQLFDEIDRKVVRVKFC                     | 372 |
| NTDB id 408 SMU RS09530 WP 002262392.1       | YSYNGEKIGQGSSENAKKFLADNPEIFDDIDHKVVRVQFC                     | 377 |
| NTDB id 625 LCA RS02525 WP 011374196.1       | YSYGSERIGQGRENAKNYLADHEDVEDEVRLKVRVAAAYG                     | 355 |
| NTDB id 115 BSU 16940 NP 389576.2            | YSYEEERLIGQGRENAKQFLKENKDIIMLMIQEQIREHYGL                    | 348 |
| consensus                                    | ***! ***!!!***** ** * *** ***** ** **                        |     |

logo

| NTDB id         | Accession                      | Sequence Logo | Position |
|-----------------|--------------------------------|---------------|----------|
| 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 1205    | PSJM300 05545 AFN77183.1       | .....         | 347      |
| NTDB id 1022    | ACIAD RS06390 WP 004925639.1   | .....         | 349      |
| NTDB id 1074    | ABD1 RS10195 WP 000344167.1    | .....         | 349      |
| NTDB id 1039154 | CIL07 RS10800 WP 003606105.1   | PASFGVDRLV    | 397      |
| NTDB id 600     | KW2 RS01765 WP 011675413.1     | .....         | 387      |
| NTDB id 269     | KZH43 RS08665 WP 001085462.1   | ELEIEIEE..    | 388      |
| NTDB id 228     | SPD RS09265 WP 001085462.1     | ELEIEIEE..    | 388      |
| NTDB id 194     | SPR RS08825 WP 001085462.1     | ELEIEIEE..    | 388      |
| NTDB id 159     | SP RS09750 WP 001085462.1      | ELEIEIEE..    | 388      |
| NTDB id 499     | SM12261 RS08315 WP 078228268.1 | ELEIEIEE..    | 384      |
| NTDB id 527     | SMSK321 RS11065 WP 001085454.1 | ELEIEIEE..    | 384      |
| NTDB id 453     | Spy49 1753c ACI62003.1         | GIEIED....    | 378      |
| NTDB id 408     | SMU RS09530 WP 002262392.1     | TIELED....    | 383      |
| NTDB id 625     | LCA RS02525 WP 011374196.1     | .....         | 355      |
| NTDB id 115     | BSU 16940 NP 389576.2          | .....         | 348      |

consensus

 non conserved  
 similar  
 ≥ 50% conserved