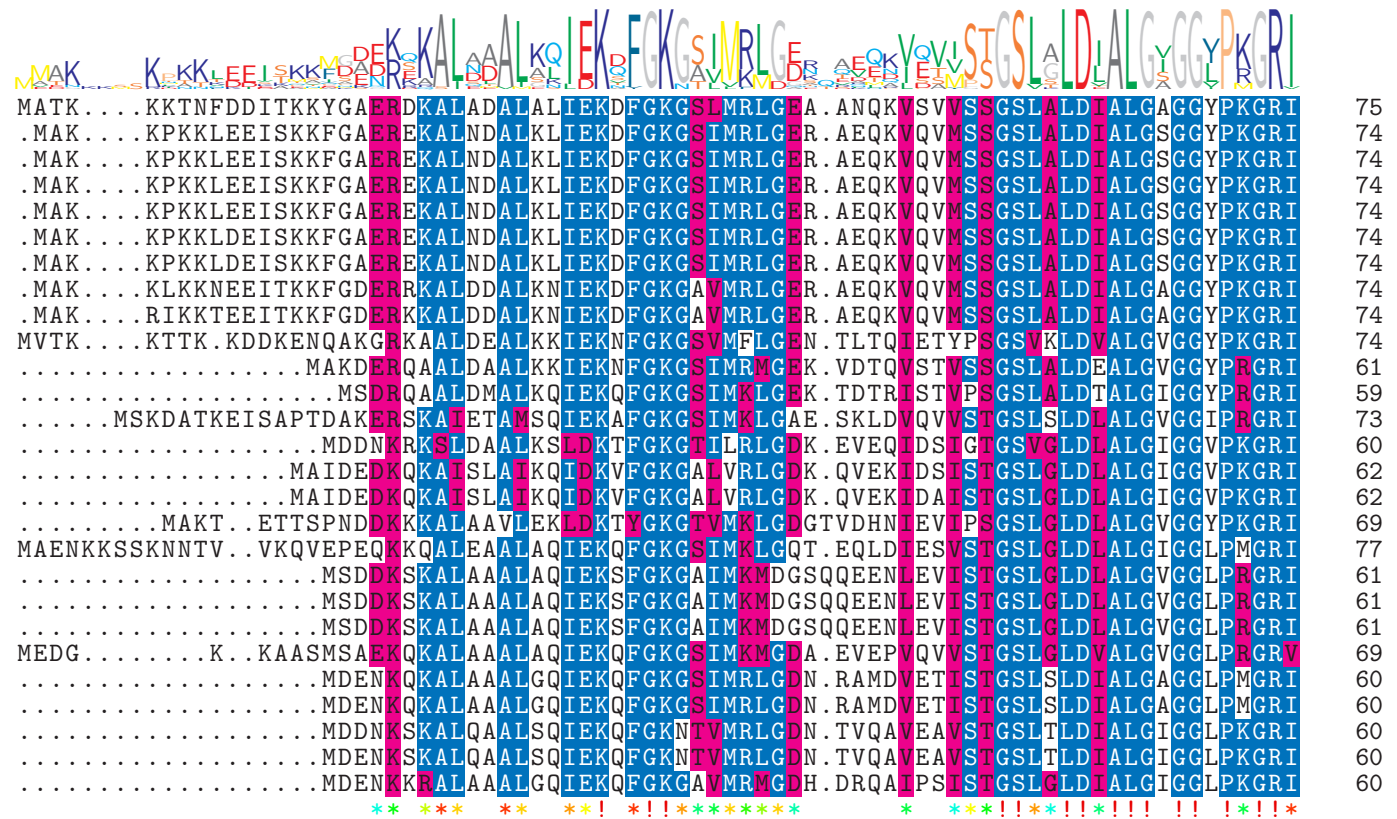


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NTDB id 159 SP RS09750 WP 001085462.1
NTDB id 527 SMSK321 RS11065 WP 001085454.1
NTDB id 499 SM12261 RS08315 WP 078228268.1
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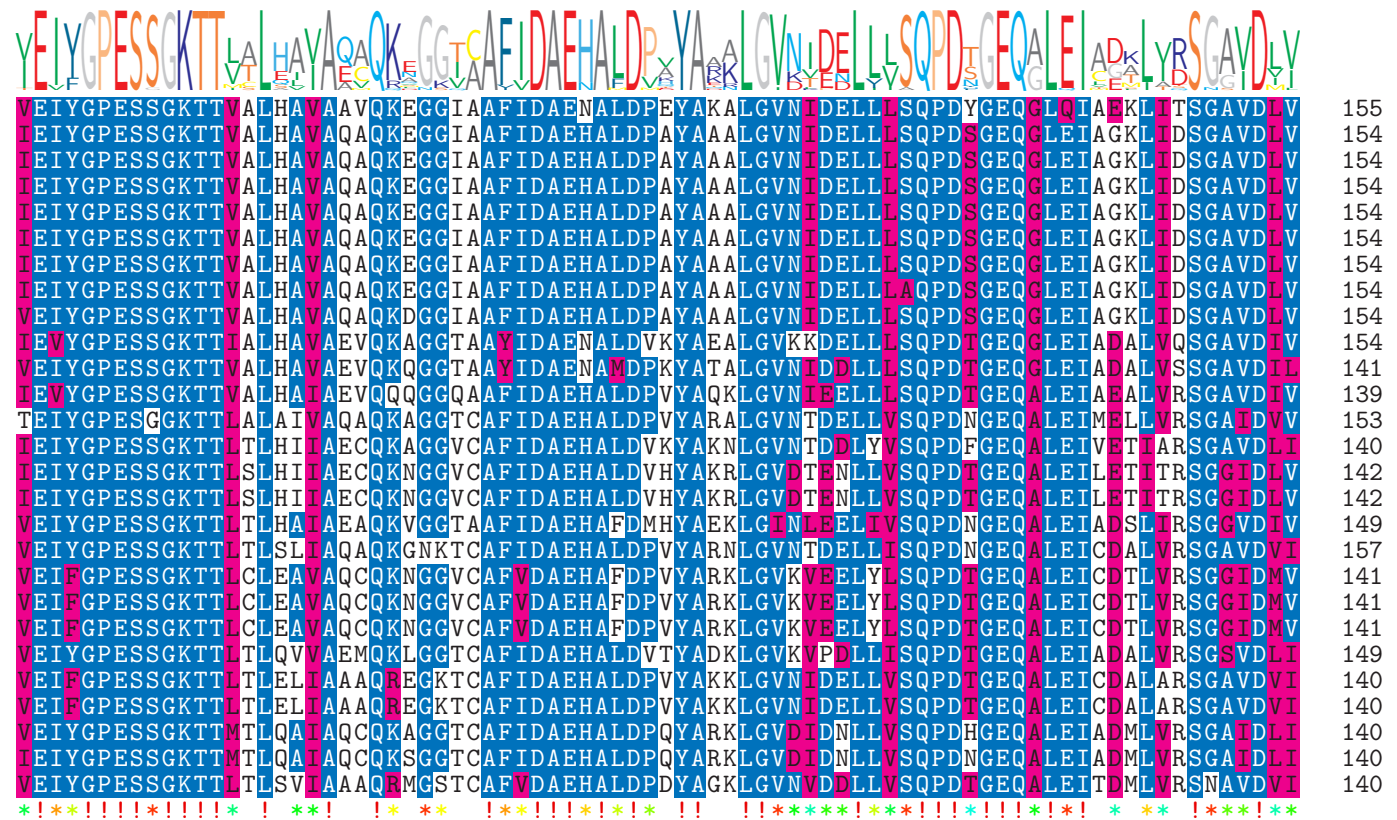
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consensus

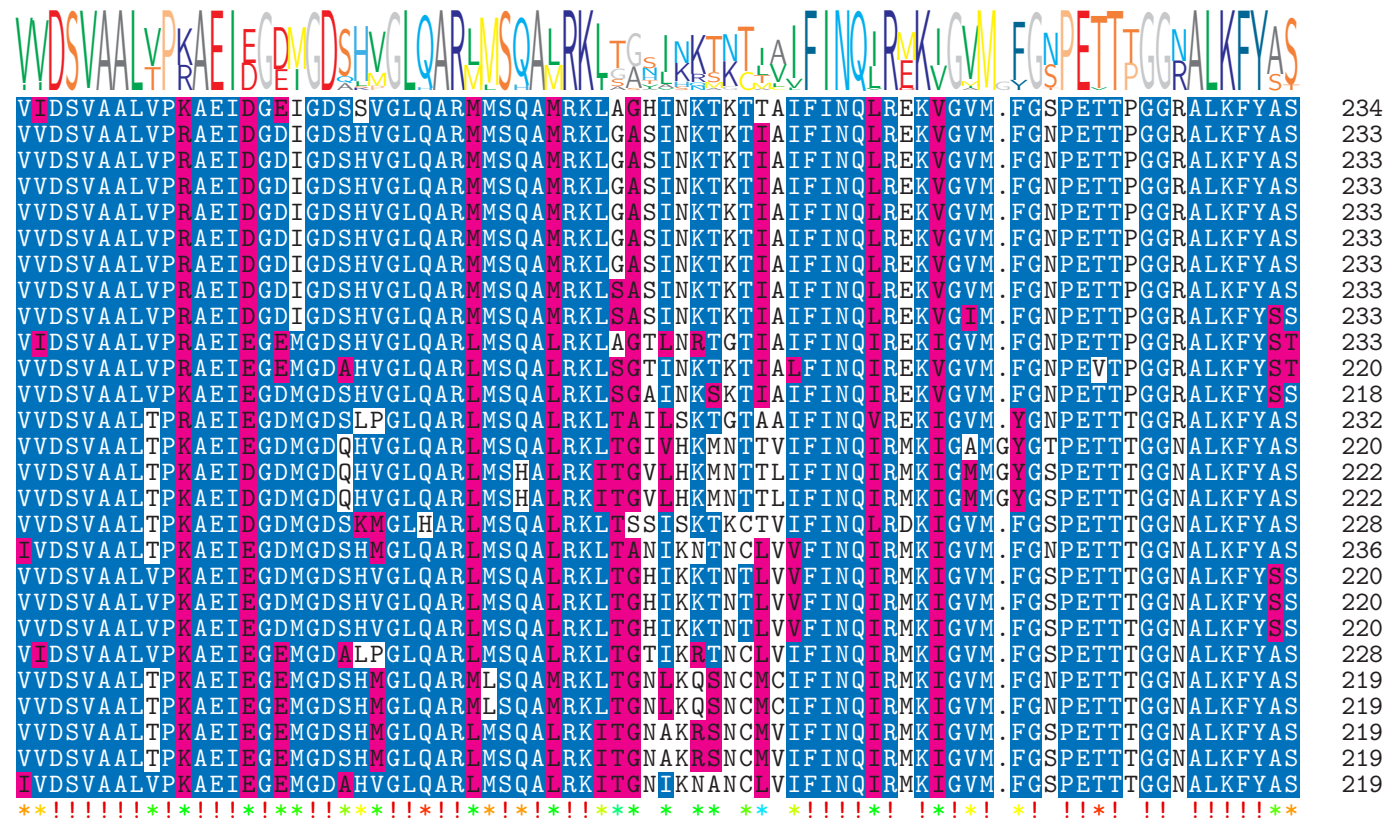
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|---------------------------------------------|----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----|-----|---|---|---|---|-----|-------|
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| NTDB id 228 SPD RS09265 WP 001085462.1      | VR | L | D | V | R | G | N | T | Q | I | K | G | T | G | . | D | Q | K | E | T | N | V | G | K | E | T | K | I | K | V | V | K | N | K | V | A | P | P | F | K | E | A | V | V | E | I | M | Y | G | E | G | I | S | K | T | G | E | L | L | K | I | A | S | D | L | D | I | I | K | K | A | G | A | W | Y | S | Y | K | D   | 312 |   |   |   |   |     |       |
| NTDB id 194 SPR RS08825 WP 001085462.1      | VR | L | D | V | R | G | N | T | Q | I | K | G | T | G | . | D | Q | K | E | T | N | V | G | K | E | T | K | I | K | V | V | K | N | K | V | A | P | P | F | K | E | A | V | V | E | I | M | Y | G | E | G | I | S | K | T | G | E | L | L | K | I | A | S | D | L | D | I | I | K | K | A | G | A | W | Y | S | Y | K | D   | 312 |   |   |   |   |     |       |
| NTDB id 159 SP RS09750 WP 001085462.1       | VR | L | D | V | R | G | N | T | Q | I | K | G | T | G | . | D | Q | K | E | T | N | V | G | K | E | T | K | I | K | V | V | K | N | K | V | A | P | P | F | K | E | A | V | V | E | I | M | Y | G | E | G | I | S | K | T | G | E | L | L | K | I | A | S | D | L | D | I | I | K | K | A | G | A | W | Y | S | Y | K | D   | 312 |   |   |   |   |     |       |
| NTDB id 527 SMSK321 RS11065 WP 001085454.1  | VR | L | D | V | R | G | S | T | Q | I | K | G | T | G | . | D | Q | K | D | T | N | V | G | K | E | T | K | I | K | V | V | K | N | K | V | A | P | P | F | K | E | A | F | V | E | I | M | Y | G | E | G | I | S | K | T | G | E | L | L | K | I | A | S | D | L | D | I | I | K | K | A | G | A | W | Y | S | Y | K | D   | 312 |   |   |   |   |     |       |
| NTDB id 499 SM12261 RS08315 WP 078228268.1  | VR | L | D | V | R | G | S | T | Q | I | K | G | T | G | . | D | Q | K | D | T | N | V | G | K | E | T | K | I | K | V | V | K | N | K | V | A | P | P | F | K | E | A | F | V | E | I | M | Y | G | E | G | I | S | K | T | G | E | L | L | K | I | A | S | D | L | D | I | I | K | K | A | G | A | W | Y | S | Y | K | D   | 312 |   |   |   |   |     |       |
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| NTDB id 408 SMU RS09530 WP 002262392.1      | VR | L | D | V | R | G | N | T | Q | I | K | G | T | G | . | E | Q | K | D | S | N | I | G | K | E | T | K | I | K | V | V | K | N | K | V | A | P | P | F | K | E | A | F | V | E | I | I | Y | G | E | G | I | S | R | T | G | E | L | V | K | I | A | S | D | L | G | I | I | Q | K | A | G | A | W | Y | S | Y | N | G   | 312 |   |   |   |   |     |       |
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| NTDB id 625 LCA RS02525 WP 011374196.1      | VR | L | E | V | R | R | A | E | T | I | K | N | G | T | . | D | . | . | . | . | M | I | G | N | R | A | R | I | K | V | V | K | N | K | V | A | P | P | F | K | V | A | E | V | D | I | M | Y | G | Q | G | I | S | R | T | G | E | L | V | D | M | A | V | E | K | D | I | I | N | K | S | G | S | W | Y | S | Y | G | S   | 295 |   |   |   |   |     |       |
| NTDB id 115 BSU 16940 NP 389576.2           | VR | L | E | V | R | R | A | E | Q | L | K | Q | G | N | . | D | . | . | . | . | V | M | G | N | K | T | K | I | K | V | V | K | N | K | V | A | P | P | F | R | T | A | E | V | D | I | M | Y | G | E | G | I | S | K | E | G | E | T | I | D | L | G | T | E | L | D | I | V | Q | K | S | G | S | W | Y | S | Y | E | E   | 293 |   |   |   |   |     |       |
| NTDB id 1313 DR RS12030 WP 010888966.1      | VR | L | D | V | R | K | I | G | Q | . | . | . | . | . | . | . | . | . | . | P | T | K | V | G | N | D | A | V | A | N | T | V | K | I | K | T | V | K | N | K | V | A | A | P | F | K | E | V | E | L | A | L | V | Y | G | K | G | F | D | Q | L | S | D | L | V | G | L | A | A | D | M | I | I | K | K | A | G | S | F   | Y   | S | Y | D | G | 308 |       |
| NTDB id 1245 Cj1673c YP 002345041.1         | VR | L | D | V | R | K | V | A | T | . | . | . | . | . | . | . | . | . | . | L | . | K | Q | N | E | E | P | I | G | N | R | V | K | V | K | V | K | N | K | V | A | P | P | F | R | Q | A | E | F | D | V | M | F | G | E | G | L | S | R | E | G | E | L | I | D | Y | G | V | K | L | D | I | V | D | K | S | G | A | W   | F   | S | Y | K | D | 295 |       |
| NTDB id 1211 C694 RS00795 WP 000963128.1    | VR | I | D | I | R | R | I | A | S | . | . | . | . | . | . | . | . | . | . | L | . | K | Q | N | E | Q | H | I | G | N | R | A | K | A | K | V | V | K | N | K | V | A | P | P | F | R | E | A | E | F | D | I | M | F | G | E | G | I | S | K | E | G | E | T | I | D | Y | G | V | K | L | D | I | V | D | K | S | G | A   | W   | L | S | Y | Q | D   | 297   |
| NTDB id 1214 NCTC11637 00359 SQJ03206.1     | VR | I | D | I | R | R | I | A | A | . | . | . | . | . | . | . | . | . | . | L | . | K | Q | N | E | Q | H | I | G | N | R | A | K | A | K | V | V | K | N | K | V | A | P | P | F | R | E | A | E | F | D | I | M | F | G | E | G | I | S | K | E | G | E | T | I | D | Y | G | V | K | L | D | I | V | D | K | S | G | A   | W   | L | S | Y | Q | D   | 297   |
| NTDB id 1334 RAOC RS04870 WP 004918236.1    | VR | I | D | I | R | R | S | L | S | D | T | G | K | I | K | D | K | S | G | E | V | I | G | N | R | T | K | V | K | V | V | K | N | K | V | A | P | P | F | K | S | A | E | F | D | I | M | Y | G | E | G | V | S | K | V | G | E | I | L | D | V | A | T | D | L | D | I | I | Q | K | S | G | S | W | F | S | Y | Q | D   | 308 |   |   |   |   |     |       |
| NTDB id 1389 A4U84 RS07560 WP 021112712.1   | VR | L | D | I | R | R | C | G | V | . | . | . | . | . | . | . | . | . | . | V | . | K | D | G | D | E | I | I | G | S | E | T | K | V | K | V | V | K | N | K | V | A | P | P | F | R | E | V | Q | F | D | I | M | Y | G | E | G | I | S | R | M | N | E | L | L | I | L | A | E | A | N | G | F | I | K | K | S | G | A   | W   | F | S | Y | D | G   | 311   |
| NTDB id 1130 NGFG RS03960 WP 003688695.1    | VR | L | D | I | R | R | T | G | S | . | . | . | . | . | . | . | . | . | . | I | . | K | K | G | E | E | V | L | G | N | E | T | R | V | K | V | I | K | N | K | V | A | P | P | F | R | Q | A | E | F | D | I | L | Y | G | E | G | I | S | W | E | G | E | L | I | D | I | G | V | K | N | D | I | I | N | K | S | G | A   | W   | Y | S | Y | N | G   | 295   |
| NTDB id 1124 NGFG RS03960 WP 003688695.1    | VR | L | D | I | R | R | T | G | S | . | . | . | . | . | . | . | . | . | . | I | . | K | K | G | E | E | V | L | G | N | E | T | R | V | K | V | I | K | N | K | V | A | P | P | F | R | Q | A | E | F | D | I | L | Y | G | E | G | I | S | W | E | G | E | L | I | D | I | G | V | K | N | D | I | I | N | K | S | G | A   | W   | Y | S | Y | N | G   | 295   |
| NTDB id 1123 OK783 RS03845 WP 003688695.1   | VR | L | D | I | R | R | T | G | S | . | . | . | . | . | . | . | . | . | . | I | . | K | K | G | E | E | V | L | G | N | E | T | R | V | K | V | I | K | N | K | V | A | P | P | F | R | Q | A | E | F | D | I | L | Y | G | E | G | I | S | W | E | G | E | L | I | D | I | G | V | K | N | D | I | I | N | K | S | G | A   | W   | Y | S | Y | N | G   | 295   |
| NTDB id 1427 RS RS02760 WP 011000510.1      | VR | L | D | I | R | R | I | G | S | . | . | . | . | . | . | . | . | . | . | I | . | K | K | G | D | E | V | V | G | N | E | T | K | V | K | V | V | K | N | K | V | A | P | P | F | R | E | A | I | F | D | I | L | Y | G | A | G | V | S | R | E | G | E | I | I | D | L | G | V | E | A | K | V | V | E | K | S | G | A   | W   | Y | S | Y | N | G   | 303   |
| NTDB id 1165 A1552VC RS01565 WP 000344154.1 | VR | L | D | I | R | R | T | G | A | . | . | . | . | . | . | . | . | . | . | I | . | K | E | G | E | E | V | V | G | N | E | T | R | I | K | V | V | K | N | K | I | A | A | P | F | K | E | A | N | T | Q | I | M | Y | G | Q | G | F | N | R | E | G | E | L | I | D | L | G | V | K | H | K | M | V | E | K | S | G | A   | W   | Y | S | Y | N | G   | 294   |
| NTDB id 1142 GTF74 RS11550 WP 000344154.1   | VR | L | D | I | R | R | T | G | A | . | . | . | . | . | . | . | . | . | . | I | . | K | E | G | E | E | V | V | G | N | E | T | R | I | K | V | V | K | N | K | I | A | A | P | F | K | E | A | N | T | Q | I | M | Y | G | Q | G | F | N | R | E | G | E | L | I | D | L | G | V | K | H | K | M | V | E | K | S | G | A   | W   | Y | S | Y | N | G   | 294   |
| NTDB id 1022 ACIAD RS06390 WP 004925639.1   | VR | L | D | I | R | R | I | G | Q | . | . | . | . | . | . | . | . | . | . | V | . | K | E | G | D | E | I | I | G | S | E | T | K | V | K | V | V | K | N | K | M | A | P | P | F | R | E | A | I | F | Q | I | L | Y | G | K | G | V | N | Q | L | G | E | L | V | D | L | A | V | Q | Q | N | I | V | Q | K | A | G | A   | W   | Y | S | Y | Q | G   | 294   |
| NTDB id 1074 ABD1 RS10195 WP 000344167.1    | VR | L | D | I | R | R | I | G | Q | . | . | . | . | . | . | . | . | . | . | V | . | K | E | G | D | E | I | I | G | S | E | T | K | V | K | V | V | K | N | K | M | A | P | P | F | K | E | A | I | F | Q | I | L | Y | G | K | G | T | N | Q | L | G | E | L | V | D | L | A | V | Q | Q | D | I | V | Q | K | A | G | A   | W   | Y | S | Y | Q | G   | 294   |
| NTDB id 1205 PSJM300 05545 AFN77183.1       | VR | L | D | I | R | R | T | G | A | . | . | . | . | . | . | . | . | . | . | V | . | K | E | G | D | E | V | V | G | S | E | T | R | V | K | V | V | K | N | K | V | A | P | P | F | R | Q | A | E | F | Q | I | L | Y | G | K | G | I | Y | R | N | G | E | I | I | D | L | G | V | Q | Q | G | L | V | E | K | S | G | A   | W   | Y | A | Y | K | G   | 294</ |

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|---------------------------------------------|---------|----------------|-------------------|-------------------|-------------------|-----------------|-----|----|---|
| NTDB id 600 KW2 RS01765 WP 011675413.1      | EKIGQGA | EKAKNYLKEHQD   | ..VFDEIDHKVRAAHGL | LLDDSEVAETEEETTAS | TKAKAKKEEKAVETEE  | IELELED....     | 387 |    |   |
| NTDB id 269 KZH43 RS08665 WP 001085462.1    | EKIGQGS | ENAKKYLAEHPE   | ..IFDEIDKQVRSKFGL | IDGEEVSEQDTENKKDE | ....PKKEEA..      | VNEEVPLDLGDELEI | 384 |    |   |
| NTDB id 228 SPD RS09265 WP 001085462.1      | EKIGQGS | ENAKKYLAEHPE   | ..IFDEIDKQVRSKFGL | IDGEEVSEQDTENKKDE | ....PKKEEA..      | VNEEVPLDLGDELEI | 384 |    |   |
| NTDB id 194 SPR RS08825 WP 001085462.1      | EKIGQGS | ENAKKYLAEHPE   | ..IFDEIDKQVRSKFGL | IDGEEVSEQDTENKKDE | ....PKKEEA..      | VNEEVPLDLGDELEI | 384 |    |   |
| NTDB id 159 SP RS09750 WP 001085462.1       | EKIGQGS | ENAKKYLAEHPE   | ..IFDEIDKQVRSKFGL | IDGEEVSEQDTENKKDE | ....PKKEEA..      | VNEEVPLDLGDELEI | 384 |    |   |
| NTDB id 527 SMSK321 RS11065 WP 001085454.1  | EKIGQGS | ENAKKYLADNPE   | ..VFAEIDHQVRVQFGL | IDGEEAAE....      | SKKDE....VAQVDS.. | VNEEVTLDLGDELEI | 380 |    |   |
| NTDB id 499 SM12261 RS08315 WP 078228268.1  | EKIGQGS | ENAKKYLADNPE   | ..IFDEIDHQVRVQFGL | IDGEEIAE....      | SKKDE....AAQVDS.. | VNEEVTLDLGDELEI | 380 |    |   |
| NTDB id 453 Spy49 1753c ACI62003.1          | EKIGQGS | ENAKRYLADHPQ   | ..LFDEIDRKVRVKFGL | LEESEESAMAVASE    | .....E.....       | TDDLALDLNNGIEI  | 376 |    |   |
| NTDB id 408 SMU RS09530 WP 002262392.1      | EKIGQGS | ENAKKFLADNPE   | ..IFDDIDHKVRVQYGL | IEDNTEEEKQSSKEK   | .....ETDEK..      | ADKNLVLELDDTIEL | 381 |    |   |
| NTDB id 53404 C269 RS03115 WP 010016933.1   | IKIGQGR | EKAKEFLDAPENAE | MRQEIIYVKVRDAFG   | IGDGETGVNETNDD    | SSTDSE.....       | PEALNLATDDDLTD  | 377 |    |   |
| NTDB id 625 LCA RS02525 WP 011374196.1      | ERIGQGR | ENAKNYLADHED   | ..VEDEVRLKVRAAYG  | ISDVPEEDLP        | TTE.....D.....    | E.QINILPDDSTEE  | 355 |    |   |
| NTDB id 115 BSU 16940 NP 389576.2           | ERLGQGR | ENAKQFLKENKD   | ..IMLMIQEQIREHYGL | DNNGVVQQQAE       | E.....T.....      | QEELEFE.E.....  | 348 |    |   |
| NTDB id 1313 DR RS12030 WP 010888966.1      | ERIGQG  | KEKTIAYIAERPE  | ..MEQEIRDRVMAAIR  | AGNAGEAPALAPAPA   | PEAA..EA.....     |                 | 363 |    |   |
| NTDB id 1245 Cj1673c YP 002345041.1         | KKLGQGR | ENSKAFLKENPE   | ..IADEITKAIQNSMG  | IEGMI.....        | SGSEDD..EG..EE    |                 | 343 |    |   |
| NTDB id 1211 C694 RS00795 WP 000963128.1    | KKLGQGR | ENAKALLKEDKA   | ..LADEITLKI       | KESIGSNEEI....    | MPLPDE..PL..EEME  |                 | 347 |    |   |
| NTDB id 1214 NCTC11637 00359 SQJ03206.1     | KKLGQGR | ENAKALLKEDKA   | ..LADEITLKI       | KESIGSNEEI....    | MPLPDE..PL..EEME  |                 | 347 |    |   |
| NTDB id 1334 RAOC RS04870 WP 004918236.1    | TKLGQGR | DTVKELTKDNPE   | ..LAELEAKIREKL    | QAK.....          |                   |                 | 343 |    |   |
| NTDB id 1389 A4U84 RS07560 WP 021112712.1   | TKIGQG  | KNNAVKWLKENPE  | ..IADKLEQEIRNTL   | ASNPN.....        | VLKATASDSN..      | DESDVEEFSEEL    | 372 |    |   |
| NTDB id 1130 NGFG RS03960 WP 003688695.1    | AKIGQG  | KDNVRVWLKENPE  | ..ISDEIDAKIRAL    | NGVEMHI....       | TEGTQDET          | DG..ER.....PEE  | 348 |    |   |
| NTDB id 1124 NGFG RS03960 WP 003688695.1    | AKIGQG  | KDNVRVWLKENPE  | ..ISDEIDAKIRAL    | NGVEMHI....       | TEGTQDET          | DG..ER.....PEE  | 348 |    |   |
| NTDB id 1123 OK783 RS03845 WP 003688695.1   | AKIGQG  | KDNVRVWLKENPE  | ..ISDEIDAKIRAL    | NGVEMHI....       | TEGTQDET          | DG..ER.....PEE  | 348 |    |   |
| NTDB id 1427 RS RS02760 WP 011000510.1      | ERIGQGR | DNCREFLRENAE   | ..LAREIENKVRHL    | GVTPMG....        | AVTLA.EEVE..      | ED.....         | 352 |    |   |
| NTDB id 1165 A1552VC RS01565 WP 000344154.1 | DKIGQG  | KANACKY LKENPE | ..IAKTLDKKLREML   | LNPNM.....        | QLIAETSSAA..      | DDVEFGAVPEEF    | 354 |    |   |
| NTDB id 1142 GTF74 RS11550 WP 000344154.1   | DKIGQG  | KANACKY LKENPE | ..IAKTLDKKLREML   | LNPNM.....        | QLIAETSSAA..      | DDVEFGAVPEEF    | 354 |    |   |
| NTDB id 1022 ACIAD RS06390 WP 004925639.1   | NKIGQG  | KNNVIRYLEENPQ  | ..ISTEIEAVIREQL   | LTGASD....        | QTAA.HDETE..      | EEDPLL..ES      | 349 |    |   |
| NTDB id 1074 ABD1 RS10195 WP 000344167.1    | NKIGQG  | KNNVIRYFEENNQ  | ..IAEEIERNIREQL   | LTGASD....        | GAVQ.I.EDE..      | EEDPLL..LES     | 349 |    |   |
| NTDB id 1205 PSJM300 05545 AFN77183.1       | SKIGQG  | KANA KYLEENPE  | ..IGQEIEQQIRAK    | LLVTSAN....       | TKATPVAEDL..      | ADADI           | 347 |    |   |
| consensus                                   | **!     | ***            | **                | *                 | **                | *               | *** | ** | * |

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|---------------------------------------------|------|------|-----|
|                                             |      | EIEE |     |
| NTDB id 600 KW2 RS01765 WP 011675413.1      | .... |      | 387 |
| NTDB id 269 KZH43 RS08665 WP 001085462.1    | EIEE |      | 388 |
| NTDB id 228 SPD RS09265 WP 001085462.1      | EIEE |      | 388 |
| NTDB id 194 SPR RS08825 WP 001085462.1      | EIEE |      | 388 |
| NTDB id 159 SP RS09750 WP 001085462.1       | EIEE |      | 388 |
| NTDB id 527 SMSK321 RS11065 WP 001085454.1  | EIEE |      | 384 |
| NTDB id 499 SM12261 RS08315 WP 078228268.1  | EIEE |      | 384 |
| NTDB id 453 Spy49 1753c ACI62003.1          | ED.. |      | 378 |
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| NTDB id 53404 C269 RS03115 WP 010016933.1   | EPIV |      | 381 |
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| 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 |
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| NTDB id 1165 A1552VC RS01565 WP 000344154.1 | .... |      | 354 |
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| NTDB id 1022 ACIAD RS06390 WP 004925639.1   | .... |      | 349 |
| NTDB id 1074 ABD1 RS10195 WP 000344167.1    | .... |      | 349 |
| NTDB id 1205 PSJM300 05545 AFN77183.1       | .... |      | 347 |
| consensus                                   |      |      |     |

-  non conserved
-  similar
-  ≥ 50% conserved