

|      |    |        |           |         |             |             |       |              |                |        |     |      |      |       |         |         |           |        |        |      |       |      |      |     |      |      |     |     |   |     |     |    |
|------|----|--------|-----------|---------|-------------|-------------|-------|--------------|----------------|--------|-----|------|------|-------|---------|---------|-----------|--------|--------|------|-------|------|------|-----|------|------|-----|-----|---|-----|-----|----|
| NTDB | id | 600    | KW2       | RS01765 | WP          | 011675413.1 | ...   | MATK...      | KKTNFDDITKKYGA | ERD    | KAL | ADAL | AL   | IEKD  | FGKGS   | LMRLGEA | .ANQK     | VSV    | VSSGSL | ALDI | I     | ALG  | AGGY | PKG | 73   |      |     |     |   |     |     |    |
| NTDB | id | 269    | KZH43     | RS08665 | WP          | 001085462.1 | ....  | MAK...       | KPKKLEEISKKFGA | ERE    | KAL | NDAL | KL   | IEKD  | FGKGS   | IMRLGER | .AEQKVQVM | MSSGSL | ALDI   | I    | ALG   | SGGY | PKG  | 72  |      |      |     |     |   |     |     |    |
| NTDB | id | 228    | SPD       | RS09265 | WP          | 001085462.1 | ....  | MAK...       | KPKKLEEISKKFGA | ERE    | KAL | NDAL | KL   | IEKD  | FGKGS   | IMRLGER | .AEQKVQVM | MSSGSL | ALDI   | I    | ALG   | SGGY | PKG  | 72  |      |      |     |     |   |     |     |    |
| NTDB | id | 194    | SPR       | RS08825 | WP          | 001085462.1 | ....  | MAK...       | KPKKLEEISKKFGA | ERE    | KAL | NDAL | KL   | IEKD  | FGKGS   | IMRLGER | .AEQKVQVM | MSSGSL | ALDI   | I    | ALG   | SGGY | PKG  | 72  |      |      |     |     |   |     |     |    |
| NTDB | id | 159    | SP        | RS09750 | WP          | 001085462.1 | ....  | MAK...       | KPKKLEEISKKFGA | ERE    | KAL | NDAL | KL   | IEKD  | FGKGS   | IMRLGER | .AEQKVQVM | MSSGSL | ALDI   | I    | ALG   | SGGY | PKG  | 72  |      |      |     |     |   |     |     |    |
| NTDB | id | 499    | SM12261   | RS08315 | WP          | 078228268.1 | ....  | MAK...       | KPKKLDEISKKFGA | ERE    | KAL | NDAL | KL   | IEKD  | FGKGS   | IMRLGER | .AEQKVQVM | MSSGSL | ALDI   | I    | ALG   | SGGY | PKG  | 72  |      |      |     |     |   |     |     |    |
| NTDB | id | 527    | SMSK321   | RS11065 | WP          | 001085454.1 | ....  | MAK...       | KPKKLDEISKKFGA | ERE    | KAL | NDAL | KL   | IEKD  | FGKGS   | IMRLGER | .AEQKVQVM | MSSGSL | ALDI   | I    | ALG   | SGGY | PKG  | 72  |      |      |     |     |   |     |     |    |
| NTDB | id | 408    | SMU       | RS09530 | WP          | 002262392.1 | ....  | MAK...       | RIKKTEEITKKFGD | ERR    | KAL | DDAL | KN   | IEKD  | FGKGA   | VMRLGER | .AEQKVQVM | MSSGSL | ALDI   | I    | ALG   | AGGY | PKG  | 72  |      |      |     |     |   |     |     |    |
| NTDB | id | 453    | Spy49     | 1753c   | ACI62003.1  |             | ....  | MAK...       | KLKKNEEITKKFGD | ERR    | KAL | DDAL | KN   | IEKD  | FGKGA   | VMRLGER | .AEQKVQVM | MSSGSL | ALDI   | I    | ALG   | AGGY | PKG  | 72  |      |      |     |     |   |     |     |    |
| NTDB | id | 115    | BSU       | 16940   | NP          | 389576.2    |       | .....        | MSDRQAAL       | DMAL   | KQ  | IEK  | Q    | FGKGS | IMKLGEK | .TDTR   | IST       | VPSGSL | ALDT   | I    | ALG   | IGGY | PRG  | 57  |      |      |     |     |   |     |     |    |
| NTDB | id | 625    | LCA       | RS02525 | WP          | 011374196.1 |       | .....        | MAKDRQAAL      | DAAL   | KK  | IEKN | F    | GKGS  | IMRMGEK | .VDTQ   | VST       | VSSGSL | ALDE   | I    | ALG   | VGGY | PRG  | 59  |      |      |     |     |   |     |     |    |
| NTDB | id | 1313   | DR        | RS12030 | WP          | 010888966.1 | ....  | MSKDA...     | TKEISAPTDAKERS | KA     | TET | AMS  | Q    | IEKA  | F       | GKGS    | IMKLGA    | E.SKLD | VQVV   | VST  | GSL   | SLDL | I    | ALG | VGGI | PRG  | 71  |     |   |     |     |    |
| NTDB | id | 113069 | KR100     | RS03250 | WP          | 038543160.1 | MPA   | EMKSNASGS..  | DLRPHEGRPG     | ERD    | KAL | NLVL | QG   | IER   | N       | F       | GKGS      | IMRLGD | A.SRMR | VET  | IST   | GALT | LDL  | I   | ALG  | .GGY | PKG | 76  |   |     |     |    |
| NTDB | id | 1245   | Cj1673c   | YP      | 002345041.1 |             | ..... | MDDN         | KRKSL          | DAAL   | KS  | LD   | DKT  | F     | GKGT    | ILRL    | GDK       | .EVEQ  | IDS    | IGT  | GS    | VGLD | I    | ALG | I    | GGV  | PKG | 58  |   |     |     |    |
| NTDB | id | 1211   | C694      | RS00795 | WP          | 000963128.1 | ..... | MAIDED       | KQKATSLA       | IKQ    | ID  | KV   | F    | GKGA  | LVRL    | GDK     | .QVEK     | IDS    | IST    | GS   | LGLD  | I    | ALG  | I   | GGV  | PKG  | 60  |     |   |     |     |    |
| NTDB | id | 1214   | NCTC11637 | 00359   | SQJ03206.1  |             | ..... | MAIDED       | KQKATSLA       | IKQ    | ID  | KV   | F    | GKGA  | LVRL    | GDK     | .QVEK     | IDA    | IST    | GS   | LGLD  | I    | ALG  | I   | GGV  | PKG  | 60  |     |   |     |     |    |
| NTDB | id | 1334   | RAOC      | RS04870 | WP          | 004918236.1 | ..... | MAKTETTSPND  | DKKALA         | AAVLEK | LD  | KTY  | GKGT | VM    | KL      | GD      | GTVDHN    | IEV    | IP     | SGSL | GLDL  | I    | ALG  | V   | GGY  | PKG  | 67  |     |   |     |     |    |
| NTDB | id | 1389   | A4U84     | RS07560 | WP          | 021112712.1 | ....  | MAENKKSSKNNT | VVKQVEPEQ      | KKQ    | AL  | EAA  | LA   | Q     | IEK     | Q       | F         | GKGS   | IMKL   | GQT  | .EQLD | IES  | V    | ST  | GSL  | GLDL | I   | ALG | I | GGL | PMG | 75 |
| NTDB | id | 1130   | NGFG      | RS03960 | WP          | 003688695.1 | ..... | MSDD         | KS             | KALAA  | ALA | Q    | IEKS | F     | GKGA    | IMKMDGS | QQEEN     | LEV    | IST    | GSL  | GLDL  | I    | ALG  | V   | GGL  | PRG  | 59  |     |   |     |     |    |
| NTDB | id | 1124   | NGFG      | RS03960 | WP          | 003688695.1 | ..... | MSDD         | KS             | KALAA  | ALA | Q    | IEKS | F     | GKGA    | IMKMDGS | QQEEN     | LEV    | IST    | GSL  | GLDL  | I    | ALG  | V   | GGL  | PRG  | 59  |     |   |     |     |    |
| NTDB | id | 1123   |           |         |             |             |       |              |                |        |     |      |      |       |         |         |           |        |        |      |       |      |      |     |      |      |     |     |   |     |     |    |

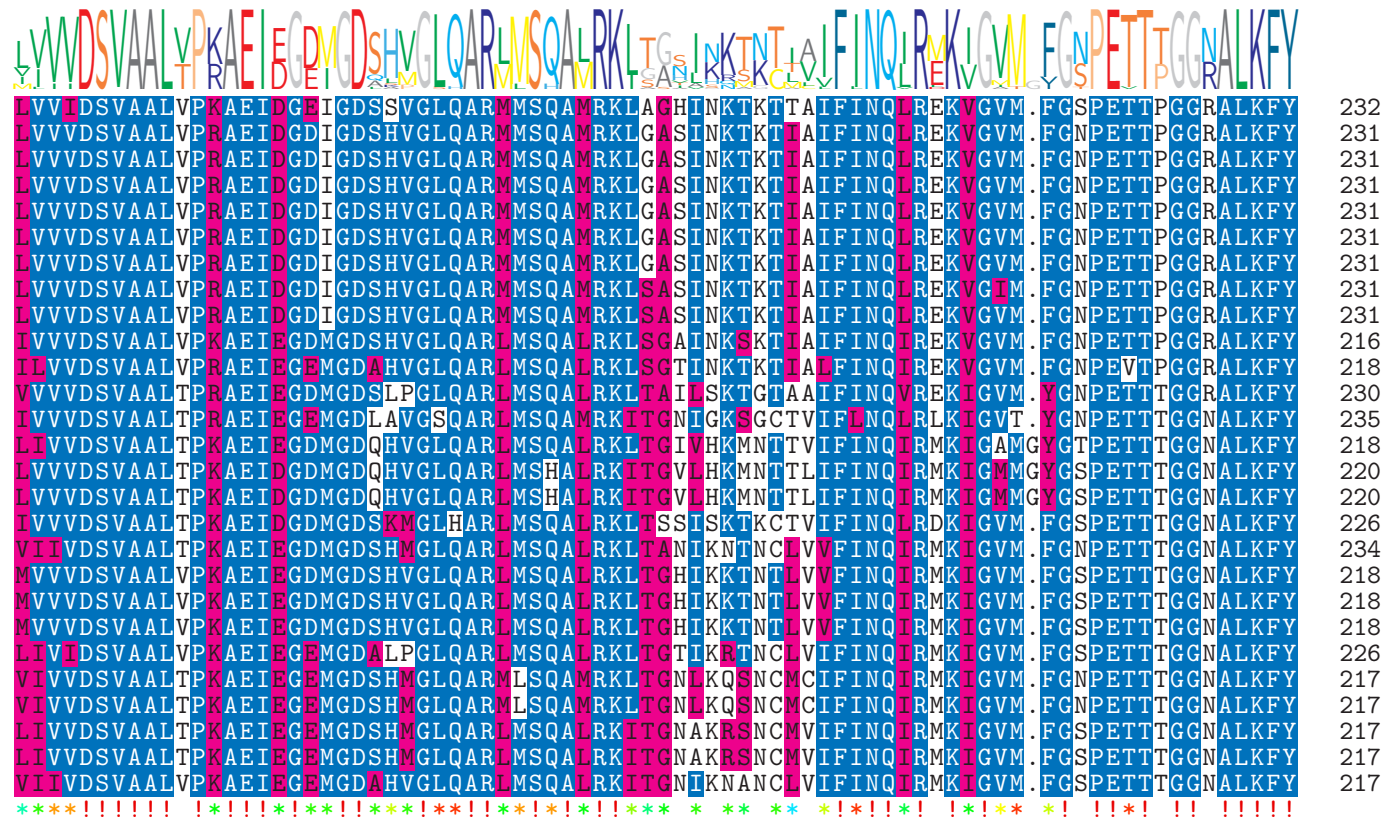
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| NTDB id 600 KW2 RS01765 WP 011675413.1      | RIVEIYGP   | ESSGKTT | VALHAVA | AAVQKEGGIAAFIDAENALDPEYAKALGVNIDELL | LSQPDYGEQGLQIAEKLIT   | SGAVD                 | 153    |
| NTDB id 269 KZH43 RS08665 WP 001085462.1    | RIVEIYGP   | ESSGKTT | VALHAVA | AQAQKEGGIAAFIDA                     | EAHALDPAYAAALGVNIDELL | LSQPD                 | 152    |
| NTDB id 228 SPD RS09265 WP 001085462.1      | RIVEIYGP   | ESSGKTT | VALHAVA | AQAQKEGGIAAFIDA                     | EAHALDPAYAAALGVNIDELL | LSQPD                 | 152    |
| NTDB id 194 SPR RS08825 WP 001085462.1      | RIVEIYGP   | ESSGKTT | VALHAVA | AQAQKEGGIAAFIDA                     | EAHALDPAYAAALGVNIDELL | LSQPD                 | 152    |
| NTDB id 159 SP RS09750 WP 001085462.1       | RIVEIYGP   | ESSGKTT | VALHAVA | AQAQKEGGIAAFIDA                     | EAHALDPAYAAALGVNIDELL | LSQPD                 | 152    |
| NTDB id 499 SM12261 RS08315 WP 078228268.1  | RIVEIYGP   | ESSGKTT | VALHAVA | AQAQKEGGIAAFIDA                     | EAHALDPAYAAALGVNIDELL | LSQPD                 | 152    |
| NTDB id 527 SMSK321 RS11065 WP 001085454.1  | RIVEIYGP   | ESSGKTT | VALHAVA | AQAQKEGGIAAFIDA                     | EAHALDPAYAAALGVNIDELL | LSQPD                 | 152    |
| NTDB id 408 SMU RS09530 WP 002262392.1      | RIVEIYGP   | ESSGKTT | VALHAVA | AQAQKDGGA                           | AFIDA                 | EAHALDPAYAAALGVNIDELL | 152    |
| NTDB id 453 Spy49 1753c ACI62003.1          | RIVEIYGP   | ESSGKTT | VALHAVA | AQAQKEGGIAAFIDA                     | EAHALDPAYAAALGVNIDELL | LAQPD                 | 152    |
| NTDB id 115 BSU 16940 NP 389576.2           | RIVEIYGP   | ESSGKTT | VALHAVA | AEVQ                                | QGGQA                 | AFIDA                 | 137    |
| NTDB id 625 LCA RS02525 WP 011374196.1      | RIVEIYGP   | ESSGKTT | VALHAVA | AEVQ                                | QGGTA                 | YIDA                  | 139    |
| NTDB id 1313 DR RS12030 WP 010888966.1      | RITEIYGP   | ESSGKTT | LALAI   | VAQAQKAGGTCA                        | FIDA                  | EAHALDPVYARALGVNTDELL | 151    |
| NTDB id 113069 KR100 RS03250 WP 038543160.1 | RIVEIYGP   | ESSGKTT | TLHAI   | AEVQ                                | KRGVA                 | AFVDA                 | 156    |
| NTDB id 1245 Cj1673c YP 002345041.1         | RIVEIYGP   | ESSGKTT | TLHI    | IAECQ                               | KAGGVC                | AFIDA                 | 138    |
| NTDB id 1211 C694 RS00795 WP 000963128.1    | RIVEIYGP   | ESSGKTT | LSLHI   | IAECQ                               | KNGGVC                | AFIDA                 | 140    |
| NTDB id 1214 NCTC11637 00359 SQJ03206.1     | RIVEIYGP   | ESSGKTT | LSLHI   | IAECQ                               | KNGGVC                | AFIDA                 | 140    |
| NTDB id 1334 RAOC RS04870 WP 004918236.1    | RIVEIYGP   | ESSGKTT | TLHAI   | IAEAQ                               | KVGGTA                | AFIDA                 | 147    |
| NTDB id 1389 A4U84 RS07560 WP 021112712.1   | RIVEIYGP   | ESSGKTT | TLSLI   | IAQAQ                               | KGKTC                 | AFIDA                 | 155    |
| NTDB id 1130 NGFG RS03960 WP 003688695.1    | RIVEIFGP   | ESSGKTT | LCLEA   | VAQCQ                               | KNGGVC                | AFVDA                 | 139    |
| NTDB id 1124 NGFG RS03960 WP 003688695.1    | RIVEIFGP   | ESSGKTT | LCLEA   | VAQCQ                               | KNGGVC                | AFVDA                 | 139    |
| NTDB id 1123 OK783 RS03845 WP 003688695.1   | RIVEIFGP   | ESSGKTT | LCLEA   | VAQCQ                               | KNGGVC                | AFVDA                 | 139    |
| NTDB id 1427 RS RS02760 WP 011000510.1      | RIVEIYGP   | ESSGKTT | TLTQV   | VAEMQ                               | KLGGTC                | AFIDA                 | 147    |
| NTDB id 1165 A1552VC RS01565 WP 000344154.1 | RIVEIFGP   | ESSGKTT | LTLEL   | IAAAQ                               | REGKTC                | AFIDA                 | 138    |
| NTDB id 1142 GTF74 RS11550 WP 000344154.1   | RIVEIFGP   | ESSGKTT | LTLEL   | IAAAQ                               | REGKTC                | AFIDA                 | 138    |
| NTDB id 1022 ACIAD RS06390 WP 004925639.1   | RIVEIYGP   | ESSGKTT | MTLQA   | IAQCQ                               | KAGGTC                | AFIDA                 | 138    |
| NTDB id 1074 ABD1 RS10195 WP 000344167.1    | RIVEIYGP   | ESSGKTT | MTLQA   | IAQCQ                               | KSGGTC                | AFIDA                 | 138    |
| NTDB id 1205 PSJM300 05545 AFN77183.1       | RIVEIYGP   | ESSGKTT | LTLSV   | IAAAQ                               | RMGSTC                | AFVDA                 | 138    |
| consensus                                   | !***!***!! | !***!!  | !***!!  | !***!!                              | !***!!                | !***!!                | !***!! |

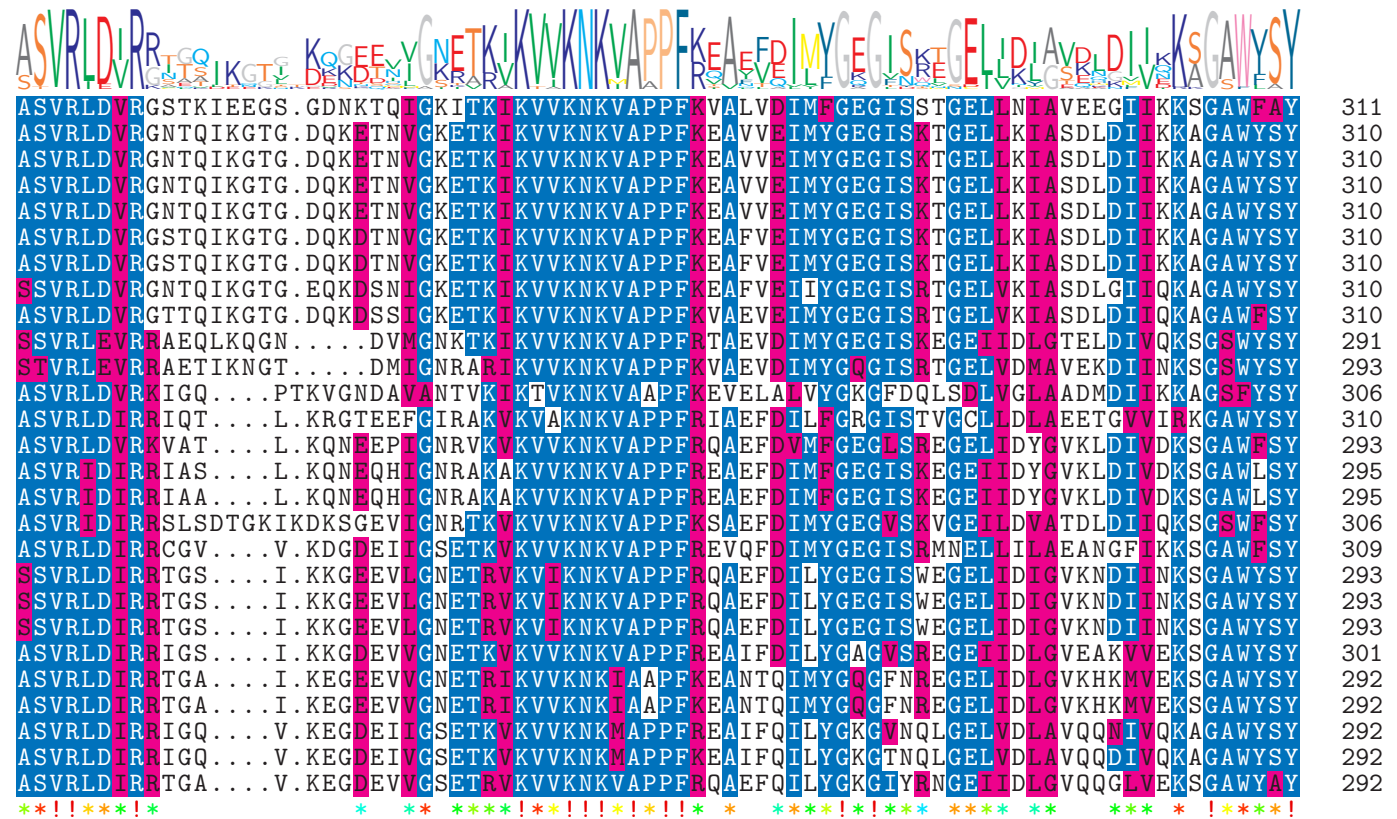
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NTDB id 527 SMSK321 RS11065 WP 001085454.1
NTDB id 408 SMU RS09530 WP 002262392.1
NTDB id 453 Spy49 1753c ACI62003.1
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NTDB id 625 LCA RS02525 WP 011374196.1
NTDB id 1313 DR RS12030 WP 010888966.1
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consensus

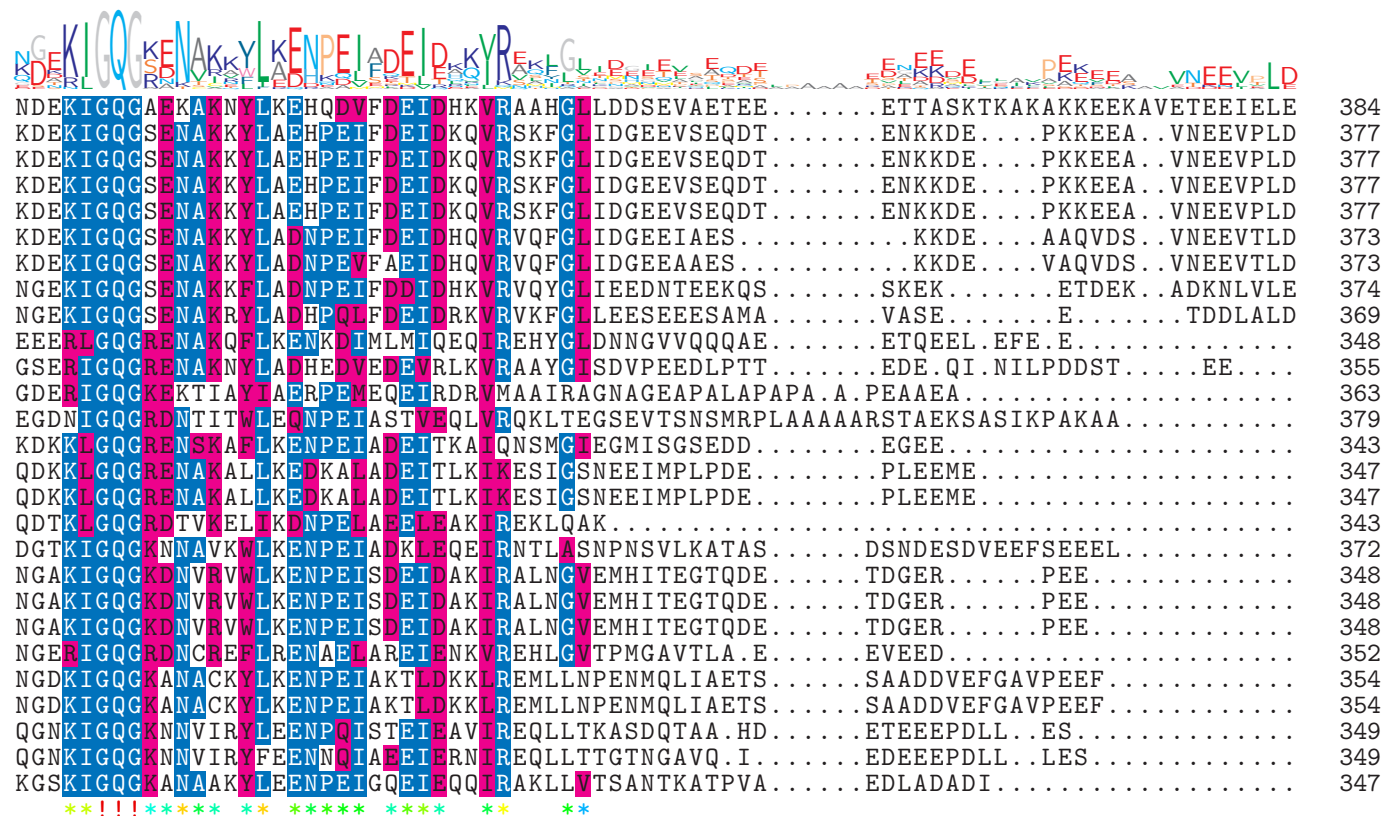
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consensus



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consensus



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| NTDB id 159 SP RS09750 WP 001085462.1       | LGDELEIEIEE | 388 |
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| consensus                                   |             |     |

- X non conserved
- X similar
- X ≥ 50% conserved