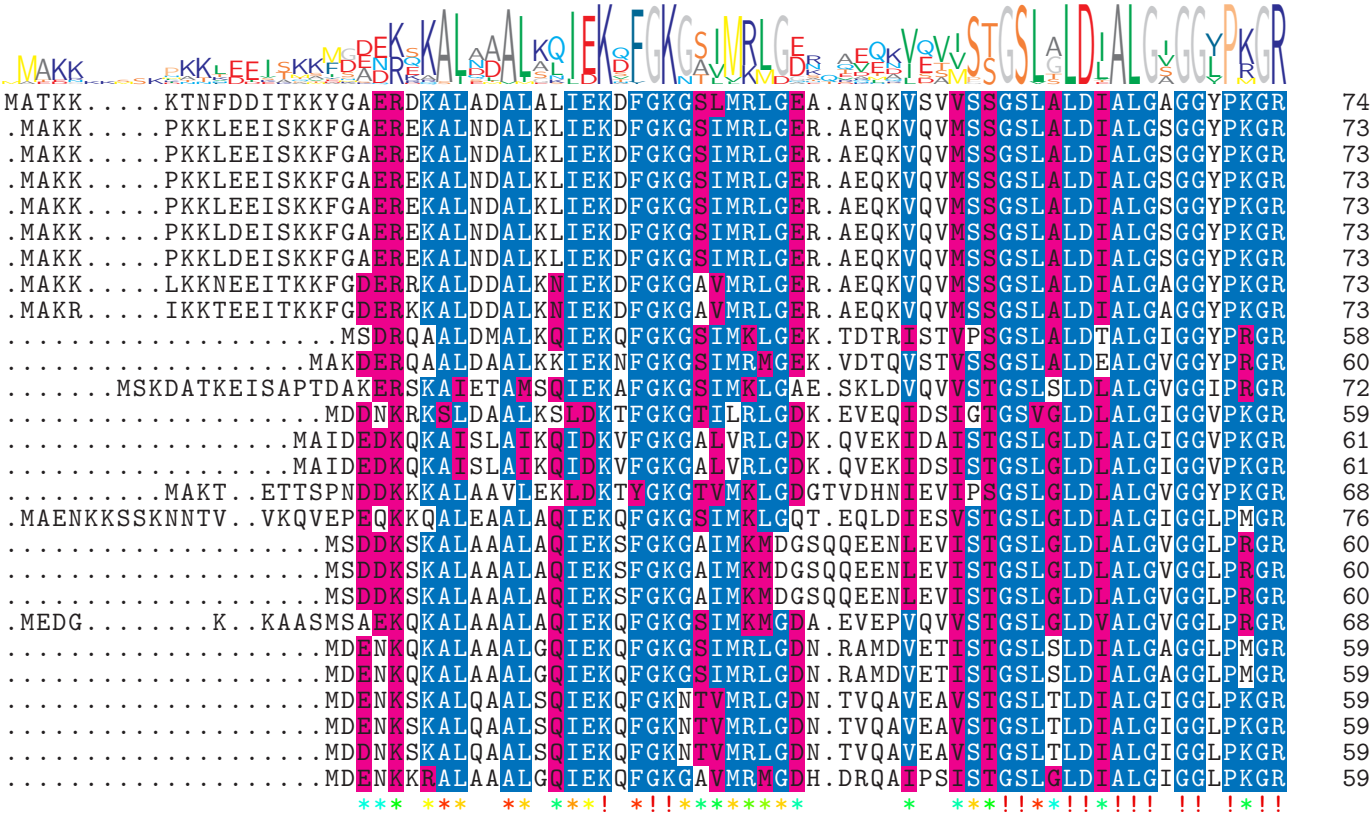


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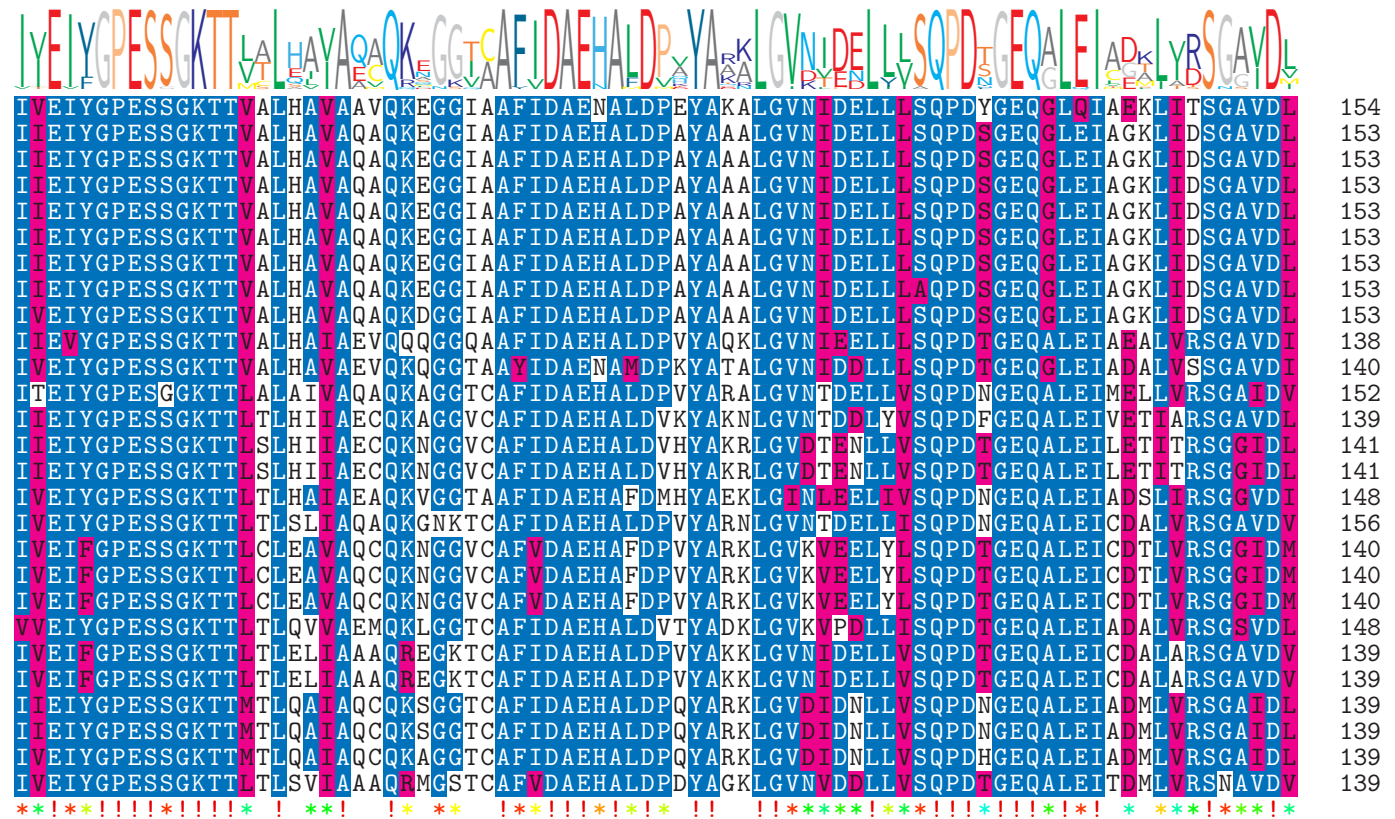
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NTDB id 1313 DR RS12030 WP 010888966.1  
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consensus



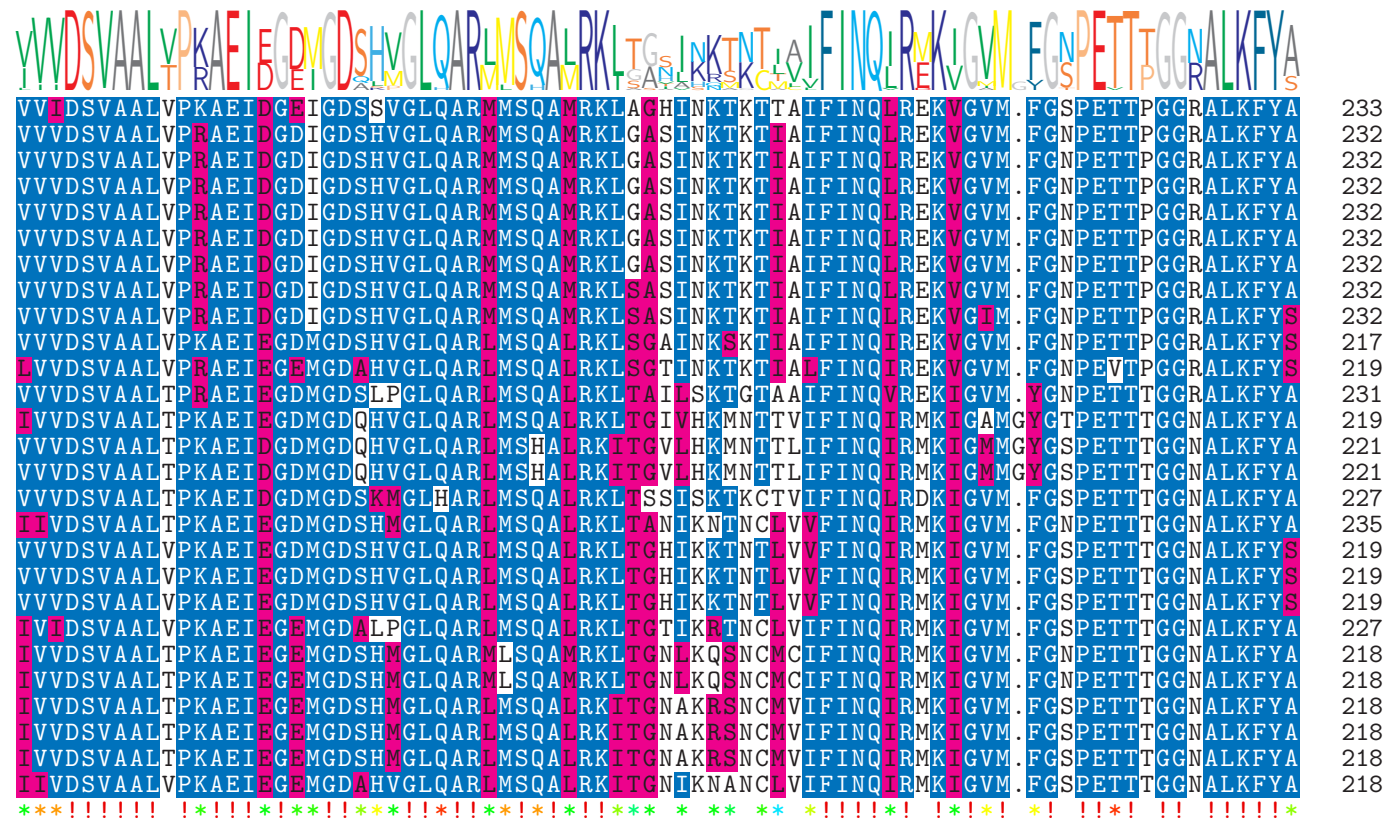
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NTDB id 600 KW2 RS01765 WP 011675413.1  
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consensus



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|                                             |                            |                                                                        |     |
|---------------------------------------------|----------------------------|------------------------------------------------------------------------|-----|
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| NTDB id 269 KZH43 RS08665 WP 001085462.1    | SVRLDVRGNTQIKGTG.DQKETN    | VGKETKIKVVKNKVAPPFKAEAVVEIMYEGEGISKTGELLKIASDLDIKKAGAWYSYK             | 311 |
| NTDB id 228 SPD RS09265 WP 001085462.1      | SVRLDVRGNTQIKGTG.DQKETN    | VGKETKIKVVKNKVAPPFKAEAVVEIMYEGEGISKTGELLKIASDLDIKKAGAWYSYK             | 311 |
| NTDB id 194 SPR RS08825 WP 001085462.1      | SVRLDVRGNTQIKGTG.DQKETN    | VGKETKIKVVKNKVAPPFKAEAVVEIMYEGEGISKTGELLKIASDLDIKKAGAWYSYK             | 311 |
| NTDB id 159 SP RS09750 WP 001085462.1       | SVRLDVRGNTQIKGTG.DQKETN    | VGKETKIKVVKNKVAPPFKAEAVVEIMYEGEGISKTGELLKIASDLDIKKAGAWYSYK             | 311 |
| NTDB id 527 SMSK321 RS11065 WP 001085454.1  | SVRLDVRGSTQIKGTG.DQKDTN    | VGKETKIKVVKNKVAPPFKAEAFVEIMYEGEGISKTGELLKIASDLDIKKAGAWYSYK             | 311 |
| NTDB id 499 SM12261 RS08315 WP 078228268.1  | SVRLDVRGSTQIKGTG.DQKDTN    | VGKETKIKVVKNKVAPPFKAEAFVEIMYEGEGISKTGELLKIASDLDIKKAGAWYSYK             | 311 |
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| NTDB id 408 SMU RS09530 WP 002262392.1      | SVRLDVRGNTQIKGTG.EQKDSN    | IGKETKIKVVKNKVAPPFKAEAFVEIYEGEGISRTGELVKIASDLGITQKAGAWYSYN             | 311 |
| NTDB id 115 BSU 16940 NP 389576.2           | SVRLEVRRAEQLKQGN.....D     | MGNKTKIKVVKNKVAPPFRTAEVDDIMYEGEGISKEGEIIDLGTELDIVQKSGSWYSYE            | 292 |
| NTDB id 625 LCA RS02525 WP 011374196.1      | TVRLEVRRAEITIKNGT.....D    | MGNRARIKVVKNKVAPPFKVAEVDIMYGGISRTGELVDMAVEKDIINKSGSWYSYG               | 294 |
| NTDB id 1313 DR RS12030 WP 010888966.1      | SVRLDVRKIGQ....PTKVGND     | AVANTVKIKTVKNKVAAPFKEVELALVYGKGFQDLSDLVGLAADMDITKKAGSFYSYG             | 307 |
| NTDB id 1245 Cj1673c YP 002345041.1         | SVRLDVRKVAT....L.KQNEEP    | IGNRVKVVVKNKVAPPFRQAEFDVMFGEGLSREGELIDYGVKLDIVDKSGAWFSYK               | 294 |
| NTDB id 1214 NCTC11637 00359 SQJ03206.1     | SVRIDIRRIAA....L.KQNEQH    | IGNRAKAKVVKNKVAPPFRFAEFDIMFGEGISKEGEIIDYGVKLDIVDKSGAWLSYQ              | 296 |
| NTDB id 1211 C694 RS00795 WP 000963128.1    | SVRIDIRRIAS....L.KQNEQH    | IGNRAKAKVVKNKVAPPFRFAEFDIMFGEGISKEGEIIDYGVKLDIVDKSGAWLSYQ              | 296 |
| NTDB id 1334 RAOC RS04870 WP 004918236.1    | SVRIDIRRLSDTGKIKDKSGEV     | IGNRTKVVVKNKVAPPFKSAEFDIMYEGEGVSKVGEILDVATDLDIQKSGSWFSYQ               | 307 |
| NTDB id 1389 A4U84 RS07560 WP 021112712.1   | SVRLDIRRCGV....V.KDGDEI    | IGSETKVVVKNKVAPPFRREVQFDIMYEGEGISRMNELLILAEANGFITKKSGAWFSYD            | 310 |
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| NTDB id 1124 NGFG RS03960 WP 003688695.1    | SVRLDIRRTGS....I.KKGEDEV   | VGNETRVKVIKNKVAPPFRQAEFDILYEGEGISWEGELIDIGVKNDIINKSGAWYSYN             | 294 |
| NTDB id 1123 OK783 RS03845 WP 003688695.1   | SVRLDIRRTGS....I.KKGEDEV   | VGNETRVKVIKNKVAPPFRQAEFDILYEGEGISWEGELIDIGVKNDIINKSGAWYSYN             | 294 |
| NTDB id 1427 RS RS02760 WP 011000510.1      | SVRLDIRRIGS....I.KKGEDEV   | VGNETKVVVKNKVAPPFRFAEFDILYGAAGVSREGEIIDLGVEAKVVEKSGAWYSYN              | 302 |
| NTDB id 1165 A1552VC RS01565 WP 000344154.1 | SVRLDIRRTGA....I.KEGEEV    | VGNETRIKVVKNKIAAPFKEANTQIMYGGGFNREGELIDLGVKHKMVEKSGAWYSYN              | 293 |
| NTDB id 1142 GTF74 RS11550 WP 000344154.1   | SVRLDIRRTGA....I.KEGEEV    | VGNETRIKVVKNKIAAPFKEANTQIMYGGGFNREGELIDLGVKHKMVEKSGAWYSYN              | 293 |
| NTDB id 364287 FE003 RS08070 WP 000344169.1 | SVRLDIRRIGQ....V.KEGDEI    | VGSETKVVVKNKMAPPFKAEIFQILYGKGTNQLGELVDLAVQQDIVQKAGAWYSYQ               | 293 |
| NTDB id 1074 ABD1 RS10195 WP 000344167.1    | SVRLDIRRIGQ....V.KEGDEI    | VGSETKVVVKNKMAPPFKAEIFQILYGKGTNQLGELVDLAVQQDIVQKAGAWYSYQ               | 293 |
| NTDB id 1022 ACIAD RS06390 WP 004925639.1   | SVRLDIRRIGQ....V.KEGDEI    | IGSETKVVVKNKMAPPFRFAEIFQILYGKGVNQLGELVDLAVQQNIVQKAGAWYSYQ              | 293 |
| NTDB id 1205 PSJM300 05545 AFN77183.1       | SVRLDIRRTGA....V.KEGDEV    | VGSETRVVVKNKVAPPFRQAEFQILYGKGIYRNGEIIDLGVQQGLVEKSGAWAYK                | 293 |
| consensus                                   | *!!**!*~                   | *~**~*****!!*!!*!!*!!*~**~*****!!*~**~*****~**~*****~**~*****!!~*****! |     |



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NTDB id 364287 FEO03 RS08070 WP 000344169.1
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| Sequence                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Score |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| DEKIGGGA <sup>+</sup> E <sup>+</sup> KA <sup>+</sup> KN <sup>+</sup> YL <sup>+</sup> KE <sup>+</sup> HQ <sup>+</sup> DV <sup>+</sup> F <sup>+</sup> DE <sup>+</sup> ID <sup>+</sup> HK <sup>+</sup> V <sup>+</sup> RA <sup>+</sup> AH <sup>+</sup> GL <sup>+</sup> LD <sup>+</sup> DD <sup>+</sup> SE <sup>+</sup> VA <sup>+</sup> E <sup>+</sup> TE <sup>+</sup> EE <sup>+</sup> ..TT <sup>+</sup> ASK <sup>+</sup> TK <sup>+</sup> ..AK <sup>+</sup> AK <sup>+</sup> KE <sup>+</sup> EE <sup>+</sup> KAV <sup>+</sup> ET <sup>+</sup> EE <sup>+</sup> IE <sup>+</sup> LE <sup>+</sup> ED <sup>+</sup> .. | 387   |
| DEKIGQGSEN <sup>+</sup> AK <sup>+</sup> KYL <sup>+</sup> AE <sup>+</sup> HP <sup>+</sup> EI <sup>+</sup> F <sup>+</sup> DE <sup>+</sup> ID <sup>+</sup> KQ <sup>+</sup> VR <sup>+</sup> SK <sup>+</sup> FL <sup>+</sup> ID <sup>+</sup> GEE <sup>+</sup> VSE <sup>+</sup> QD <sup>+</sup> TE <sup>+</sup> .NKK <sup>+</sup> D <sup>+</sup> .....PK <sup>+</sup> KEEA <sup>+</sup> ..VNEE <sup>+</sup> VPLD <sup>+</sup> LG <sup>+</sup> DEL <sup>+</sup>                                                                                                                                                   | 382   |
| DEKIGQGS <sup>+</sup> EN <sup>+</sup> AK <sup>+</sup> KYL <sup>+</sup> AE <sup>+</sup> HP <sup>+</sup> EI <sup>+</sup> F <sup>+</sup> DE <sup>+</sup> ID <sup>+</sup> KQ <sup>+</sup> VR <sup>+</sup> SK <sup>+</sup> FL <sup>+</sup> ID <sup>+</sup> GEE <sup>+</sup> VSE <sup>+</sup> QD <sup>+</sup> TE <sup>+</sup> .NKK <sup>+</sup> D <sup>+</sup> .....PK <sup>+</sup> KEEA <sup>+</sup> ..VNEE <sup>+</sup> VPLD <sup>+</sup> LG <sup>+</sup> DEL <sup>+</sup>                                                                                                                                     | 382   |
| DEKIGQGS <sup>+</sup> EN <sup>+</sup> AK <sup>+</sup> KYL <sup>+</sup> AE <sup>+</sup> HP <sup>+</sup> EI <sup>+</sup> F <sup>+</sup> DE <sup>+</sup> ID <sup>+</sup> KQ <sup>+</sup> VR <sup>+</sup> SK <sup>+</sup> FL <sup>+</sup> ID <sup>+</sup> GEE <sup>+</sup> VSE <sup>+</sup> QD <sup>+</sup> TE <sup>+</sup> .NKK <sup>+</sup> D <sup>+</sup> .....PK <sup>+</sup> KEEA <sup>+</sup> ..VNEE <sup>+</sup> VPLD <sup>+</sup> LG <sup>+</sup> DEL <sup>+</sup>                                                                                                                                     | 382   |
| DEKIGQGS <sup>+</sup> EN <sup>+</sup> AK <sup>+</sup> KYL <sup>+</sup> AD <sup>+</sup> NPE <sup>+</sup> VFA <sup>+</sup> EI <sup>+</sup> DH <sup>+</sup> Q <sup>+</sup> VR <sup>+</sup> VQ <sup>+</sup> FL <sup>+</sup> ID <sup>+</sup> GEE <sup>+</sup> AA <sup>+</sup> E.....SK <sup>+</sup> KE <sup>+</sup> .....VA <sup>+</sup> QV <sup>+</sup> DS <sup>+</sup> ..VNEE <sup>+</sup> VTL <sup>+</sup> D <sup>+</sup> LG <sup>+</sup> DEL <sup>+</sup>                                                                                                                                                   | 378   |
| DEKIGQGS <sup>+</sup> EN <sup>+</sup> AK <sup>+</sup> KYL <sup>+</sup> AD <sup>+</sup> NPE <sup>+</sup> IF <sup>+</sup> DE <sup>+</sup> ID <sup>+</sup> HQ <sup>+</sup> VR <sup>+</sup> VQ <sup>+</sup> FL <sup>+</sup> ID <sup>+</sup> GEE <sup>+</sup> IA <sup>+</sup> E.....SK <sup>+</sup> KE <sup>+</sup> .....AA <sup>+</sup> QV <sup>+</sup> DS <sup>+</sup> ..VNEE <sup>+</sup> VTL <sup>+</sup> D <sup>+</sup> LG <sup>+</sup> DEL <sup>+</sup>                                                                                                                                                   | 378   |
| GEKIGQGS <sup>+</sup> EN <sup>+</sup> AK <sup>+</sup> RY <sup>+</sup> LAD <sup>+</sup> HP <sup>+</sup> QL <sup>+</sup> F <sup>+</sup> DE <sup>+</sup> ID <sup>+</sup> DR <sup>+</sup> KV <sup>+</sup> RV <sup>+</sup> KFL <sup>+</sup> LE <sup>+</sup> EE <sup>+</sup> SE <sup>+</sup> ES <sup>+</sup> AM <sup>+</sup> AV <sup>+</sup> .ASE.....E.....TDD <sup>+</sup> LAL <sup>+</sup> DL <sup>+</sup> DNG <sup>+</sup> I                                                                                                                                                                                 | 374   |
| GEKIGQGS <sup>+</sup> EN <sup>+</sup> AK <sup>+</sup> KFL <sup>+</sup> AD <sup>+</sup> NPE <sup>+</sup> IF <sup>+</sup> DD <sup>+</sup> ID <sup>+</sup> HK <sup>+</sup> VR <sup>+</sup> VQ <sup>+</sup> GL <sup>+</sup> IE <sup>+</sup> ED <sup>+</sup> NT <sup>+</sup> EEK <sup>+</sup> QSS <sup>+</sup> .KEK.....ET <sup>+</sup> DEK <sup>+</sup> ..AD <sup>+</sup> KN <sup>+</sup> LV <sup>+</sup> LE <sup>+</sup> DD <sup>+</sup> TI                                                                                                                                                                   | 379   |
| EERLGGGREN <sup>+</sup> AK <sup>+</sup> QFL <sup>+</sup> KEN <sup>+</sup> KDIM <sup>+</sup> LI <sup>+</sup> QE <sup>+</sup> Q <sup>+</sup> IRE <sup>+</sup> HY <sup>+</sup> GL <sup>+</sup> DN <sup>+</sup> NG <sup>+</sup> VV <sup>+</sup> QQ <sup>+</sup> AA <sup>+</sup> EE <sup>+</sup> .TQE <sup>+</sup> EL <sup>+</sup> .E..FE <sup>+</sup> .E.....                                                                                                                                                                                                                                                  | 348   |
| SERIGGREN <sup>+</sup> AK <sup>+</sup> NY <sup>+</sup> LAD <sup>+</sup> HD <sup>+</sup> VE <sup>+</sup> DE <sup>+</sup> VR <sup>+</sup> LK <sup>+</sup> V <sup>+</sup> RA <sup>+</sup> AY <sup>+</sup> GIS <sup>+</sup> DV <sup>+</sup> PEED <sup>+</sup> LP <sup>+</sup> TE <sup>+</sup> .DE <sup>+</sup> .QI <sup>+</sup> .N..IL <sup>+</sup> PDD <sup>+</sup> ST.....EE.....                                                                                                                                                                                                                            | 355   |
| DERIGQG <sup>+</sup> KE <sup>+</sup> KT <sup>+</sup> IA <sup>+</sup> Y <sup>+</sup> IA <sup>+</sup> ERP <sup>+</sup> ME <sup>+</sup> QE <sup>+</sup> IR <sup>+</sup> DR <sup>+</sup> VMA <sup>+</sup> AIR <sup>+</sup> AG <sup>+</sup> NAGE <sup>+</sup> AP <sup>+</sup> AL <sup>+</sup> AP <sup>+</sup> APA <sup>+</sup> PEA <sup>+</sup> AA <sup>+</sup> EEA <sup>+</sup> ..                                                                                                                                                                                                                             | 363   |
| DKKLGGGREN <sup>+</sup> SK <sup>+</sup> AF <sup>+</sup> LKEN <sup>+</sup> PEI <sup>+</sup> DE <sup>+</sup> IT <sup>+</sup> KA <sup>+</sup> IQ <sup>+</sup> NS <sup>+</sup> MG <sup>+</sup> IE <sup>+</sup> GM <sup>+</sup> IS <sup>+</sup> GS <sup>+</sup> ..ED <sup>+</sup> DEGE <sup>+</sup> ..E.....                                                                                                                                                                                                                                                                                                    | 343   |
| DKKLGGGREN <sup>+</sup> AK <sup>+</sup> ALL <sup>+</sup> KED <sup>+</sup> KAL <sup>+</sup> ADE <sup>+</sup> IT <sup>+</sup> LK <sup>+</sup> IK <sup>+</sup> ES <sup>+</sup> IG <sup>+</sup> SNEE <sup>+</sup> IMPL <sup>+</sup> ..PDE <sup>+</sup> PLE <sup>+</sup> ..EME.....                                                                                                                                                                                                                                                                                                                             | 347   |
| DKKLGGGREN <sup>+</sup> AK <sup>+</sup> ALL <sup>+</sup> KED <sup>+</sup> KAL <sup>+</sup> ADE <sup>+</sup> IT <sup>+</sup> LK <sup>+</sup> IK <sup>+</sup> ES <sup>+</sup> IG <sup>+</sup> SNEE <sup>+</sup> IMPL <sup>+</sup> ..PDE <sup>+</sup> PLE <sup>+</sup> ..EME.....                                                                                                                                                                                                                                                                                                                             | 347   |
| DTKLGGGRD <sup>+</sup> TV <sup>+</sup> KEL <sup>+</sup> IK <sup>+</sup> DN <sup>+</sup> PE <sup>+</sup> LAE <sup>+</sup> ELE <sup>+</sup> EAK <sup>+</sup> IRE <sup>+</sup> KL <sup>+</sup> QAK <sup>+</sup> ..                                                                                                                                                                                                                                                                                                                                                                                            | 343   |
| GTKIGQGK <sup>+</sup> NN <sup>+</sup> AV <sup>+</sup> KWL <sup>+</sup> KEN <sup>+</sup> PEI <sup>+</sup> AD <sup>+</sup> KL <sup>+</sup> EQ <sup>+</sup> IR <sup>+</sup> NT <sup>+</sup> LA <sup>+</sup> SN <sup>+</sup> PN <sup>+</sup> SV <sup>+</sup> LK <sup>+</sup> ..AT <sup>+</sup> AS <sup>+</sup> DS <sup>+</sup> SN <sup>+</sup> D <sup>+</sup> ES <sup>+</sup> DVEE <sup>+</sup> FSE <sup>+</sup> .....EEL.....                                                                                                                                                                                 | 372   |
| GAKIGGQK <sup>+</sup> DN <sup>+</sup> RV <sup>+</sup> WL <sup>+</sup> KEN <sup>+</sup> PEI <sup>+</sup> SD <sup>+</sup> EI <sup>+</sup> DA <sup>+</sup> KI <sup>+</sup> RAL <sup>+</sup> NG <sup>+</sup> VM <sup>+</sup> HIT <sup>+</sup> EG <sup>+</sup> ..TQ <sup>+</sup> DET <sup>+</sup> .....GER <sup>+</sup> PE <sup>+</sup> .....E.....                                                                                                                                                                                                                                                             | 348   |
| GAKIGGQK <sup>+</sup> DN <sup>+</sup> RV <sup>+</sup> WL <sup>+</sup> KEN <sup>+</sup> PEI <sup>+</sup> SD <sup>+</sup> EI <sup>+</sup> DA <sup>+</sup> KI <sup>+</sup> RAL <sup>+</sup> NG <sup>+</sup> VM <sup>+</sup> HIT <sup>+</sup> EG <sup>+</sup> ..TQ <sup>+</sup> DET <sup>+</sup> .....GER <sup>+</sup> PE <sup>+</sup> .....E.....                                                                                                                                                                                                                                                             | 348   |
| GAKIGGQK <sup>+</sup> DN <sup>+</sup> RV <sup>+</sup> WL <sup>+</sup> KEN <sup>+</sup> PEI <sup>+</sup> SD <sup>+</sup> EI <sup>+</sup> DA <sup>+</sup> KI <sup>+</sup> RAL <sup>+</sup> NG <sup>+</sup> VM <sup>+</sup> HIT <sup>+</sup> EG <sup>+</sup> ..TQ <sup>+</sup> DET <sup>+</sup> .....GER <sup>+</sup> PE <sup>+</sup> .....E.....                                                                                                                                                                                                                                                             | 348   |
| GERIGGGRD <sup>+</sup> NC <sup>+</sup> REF <sup>+</sup> LREN <sup>+</sup> AE <sup>+</sup> LAR <sup>+</sup> EI <sup>+</sup> EN <sup>+</sup> KV <sup>+</sup> RE <sup>+</sup> HL <sup>+</sup> GV <sup>+</sup> TP <sup>+</sup> MG <sup>+</sup> AV <sup>+</sup> ..TLA <sup>+</sup> EE <sup>+</sup> VEED <sup>+</sup> .....                                                                                                                                                                                                                                                                                      | 352   |
| GDKIGGQKAN <sup>+</sup> ACK <sup>+</sup> YL <sup>+</sup> KEN <sup>+</sup> PEI <sup>+</sup> AK <sup>+</sup> TL <sup>+</sup> DK <sup>+</sup> KL <sup>+</sup> RE <sup>+</sup> ML <sup>+</sup> LN <sup>+</sup> PEN <sup>+</sup> MQL <sup>+</sup> ..AET <sup>+</sup> SSA <sup>+</sup> AD <sup>+</sup> DVE <sup>+</sup> FG <sup>+</sup> AV <sup>+</sup> PE <sup>+</sup> .....EF.....                                                                                                                                                                                                                             | 354   |
| GDKIGGQKAN <sup>+</sup> ACK <sup>+</sup> YL <sup>+</sup> KEN <sup>+</sup> PEI <sup>+</sup> AK <sup>+</sup> TL <sup>+</sup> DK <sup>+</sup> KL <sup>+</sup> RE <sup>+</sup> ML <sup>+</sup> LN <sup>+</sup> PEN <sup>+</sup> MQL <sup>+</sup> ..AET <sup>+</sup> SSA <sup>+</sup> AD <sup>+</sup> DVE <sup>+</sup> FG <sup>+</sup> AV <sup>+</sup> PE <sup>+</sup> .....EF.....                                                                                                                                                                                                                             | 354   |
| GNKIGGQK <sup>+</sup> NN <sup>+</sup> VIR <sup>+&lt;/</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |

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|                                             |        |   |   |   |   |   |     |
|---------------------------------------------|--------|---|---|---|---|---|-----|
|                                             | E      | I | E | L | 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 364287 FE003 RS08070 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