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|---------------------------------------------|------------------------------------------------------------------------------------|----|
| NTDB id 1306 DR RS10060 WP 027479822.1      | MALSI GDRRLGAILLDQGYLGDN DLQRALERHSEVGGRLADVLIDSGMVGEKRIARAIEEALGIPLVNLLAVQPDPAALR | 80 |
| NTDB id 1168 A1552VC RS11070 WP 000957200.1 | .....                                                                              | 0  |
| NTDB id 1293 VP RS12240 WP 005479695.1      | .....                                                                              | 0  |
| NTDB id 1401 DSB67 RS12665 WP 010643259.1   | .....                                                                              | 0  |
| NTDB id 70262 T556 RS10085 WP 003689817.1   | .....                                                                              | 0  |
| NTDB id 1110 NGFG RS09235 WP 003689817.1    | .....                                                                              | 0  |
| NTDB id 1251 GC085 RS07725 WP 011946523.1   | .....                                                                              | 0  |
| NTDB id 1018 ACIAD RS01685 WP 004920473.1   | .....                                                                              | 0  |
| NTDB id 1058 ABD1 RS01615 WP 001274986.1    | .....                                                                              | 0  |
| consensus                                   |                                                                                    |    |

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| NTDB id 1306 DR RS10060 WP 027479822.1      | SIRPQTALNLQAFPPFALEGDRRLRVALVDPLSSFSIETLEDDSGFDIEPYQALREEVMWAIATHYPELGLEI WVPSGASDA | 160 |
| NTDB id 1168 A1552VC RS11070 WP 000957200.1 | .....                                                                               | 0   |
| NTDB id 1293 VP RS12240 WP 005479695.1      | .....                                                                               | 0   |
| NTDB id 1401 DSB67 RS12665 WP 010643259.1   | .....                                                                               | 0   |
| NTDB id 70262 T556 RS10085 WP 003689817.1   | .....                                                                               | 0   |
| NTDB id 1110 NGFG RS09235 WP 003689817.1    | .....                                                                               | 0   |
| NTDB id 1251 GC085 RS07725 WP 011946523.1   | .....                                                                               | 0   |
| NTDB id 1018 ACIAD RS01685 WP 004920473.1   | .....                                                                               | 0   |
| NTDB id 1058 ABD1 RS01615 WP 001274986.1    | .....                                                                               | 0   |
| consensus                                   |                                                                                     |     |

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| NTDB id 1306 DR RS10060 WP 027479822.1      | GRTGGKLGERLITHGYITDAQLQVALDAQQTGEALGATLISQRAITEDQLYEVLAEQEGTTFLPNPSGFGHPGEEVLGSM | 240 |
| NTDB id 1168 A1552VC RS11070 WP 000957200.1 | .....                                                                            | 0   |
| NTDB id 1293 VP RS12240 WP 005479695.1      | .....                                                                            | 0   |
| NTDB id 1401 DSB67 RS12665 WP 010643259.1   | .....                                                                            | 0   |
| NTDB id 70262 T556 RS10085 WP 003689817.1   | .....                                                                            | 0   |
| NTDB id 1110 NGFG RS09235 WP 003689817.1    | .....                                                                            | 0   |
| NTDB id 1251 GC085 RS07725 WP 011946523.1   | .....                                                                            | 0   |
| NTDB id 1018 ACIAD RS01685 WP 004920473.1   | .....                                                                            | 0   |
| NTDB id 1058 ABD1 RS01615 WP 001274986.1    | .....                                                                            | 0   |
| consensus                                   |                                                                                  |     |

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| NTDB id 1306 DR RS10060 WP 027479822.1      | LRADALRLLAVPVDETEQGVTVLTS DPRKRPDIDALIGRPVQLMLTRPRDIERLIEQFYPPQRGRLGEQLVQEGT LSRDQL | 320 |
| NTDB id 1168 A1552VC RS11070 WP 000957200.1 | .....                                                                               | 0   |
| NTDB id 1293 VP RS12240 WP 005479695.1      | .....                                                                               | 0   |
| NTDB id 1401 DSB67 RS12665 WP 010643259.1   | .....                                                                               | 0   |
| NTDB id 70262 T556 RS10085 WP 003689817.1   | .....                                                                               | 0   |
| NTDB id 1110 NGFG RS09235 WP 003689817.1    | .....                                                                               | 0   |
| NTDB id 1251 GC085 RS07725 WP 011946523.1   | .....                                                                               | 0   |
| NTDB id 1018 ACIAD RS01685 WP 004920473.1   | .....                                                                               | 0   |
| NTDB id 1058 ABD1 RS01615 WP 001274986.1    | .....                                                                               | 0   |
| consensus                                   |                                                                                     |     |

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| NTDB id 1306 DR RS10060 WP 027479822.1      | REALQVQAREGKVKPLGEVITELGFASPD                   | EVDSALQKQNVGGRIEDTLVQSGKLSPEMLARSLAAQLGYEFLDPIQNPP                     | 400 |
| NTDB id 1168 A1552VC RS11070 WP 000957200.1 | .....MLTNLVA                                    | ILRQAEELISATQEAVVTQVSASGTSVPEALL                                       | 69  |
| NTDB id 1293 VP RS12240 WP 005479695.1      | .....MHSNLS                                     | TILRQKGLLTF                                                            | 69  |
| NTDB id 1401 DSB67 RS12665 WP 010643259.1   | .....MLTNLST                                    | VLRQAGILTF                                                             | 69  |
| NTDB id 70262 T556 RS10085 WP 003689817.1   | .....MSVGLLR                                    | ILVQNVVTV                                                              | 68  |
| NTDB id 1110 NGFG RS09235 WP 003689817.1    | .....MSVGLLR                                    | ILVQNVVTV                                                              | 68  |
| NTDB id 1251 GC085 RS07725 WP 011946523.1   | ...MALATEEYRLQ                                  | IGQLLVLEKLLDKTKAIELHKLAAAEKISLLQYIVKNKILSAEQIALTA                      | 77  |
| NTDB id 1018 ACIAD RS01685 WP 004920473.1   | ...MSAFTTPPKF                                   | SGFIRRLVEEGYVNAQNMQQALEKAKKFKQDIPVYLIDNFSISPLTIAEITISLEFGEPLDLGVFDP    | 77  |
| NTDB id 1058 ABD1 RS01615 WP 001274986.1    | ...MSALHTSPKFT                                  | GGFRRLLVEEKHVSAAATMQTALDAAKRAKQDVTAVYLIEEVHLSPSLLAEETISAEFAEPYFDLDVYDT | 77  |
| consensus                                   | * * * * * * * * * * * * * * * * * * * * * * * * |                                                                        |     |

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|---------------------------------------------|-------------------------------------------------|------------------------|----------------------------------------------------------|-----|
| NTDB id 1306 DR RS10060 WP 027479822.1      | DPKVALMIP                                       | EATARRIVVPVRLQGN       | SLVAMKDPRNVFALDDLKLITGKEILPAVMAEKDIIIRLIERYFGEKGF        | 480 |
| NTDB id 1168 A1552VC RS11070 WP 000957200.1 | ANLCQQ                                          | LGLRELITRYDALPIAKQGNLL | LLAVSDPTLLQAEEEFRFATGLQVELALADHRA                        | 149 |
| NTDB id 1293 VP RS12240 WP 005479695.1      | ASLCQQ                                          | LGLRELITRHNALPLHRTPTLL | LAVADPTNQQAEDDFRATGLQVELVLADFREL                         | 149 |
| NTDB id 1401 DSB67 RS12665 WP 010643259.1   | ASLCQT                                          | LGLRDLITRHNALPLNRTSSTL | LAVADPTNIQAEDDFRATGLQVELVLADFREL                         | 149 |
| NTDB id 70262 T556 RS10085 WP 003689817.1   | HRVLMG                                          | VLTEEQMVEFHCVPVFR      | RGDKVFFAVSDPTQMPQIQKTVSAAGIAVELVIVEDDQLAGLLDWVGS         | 146 |
| NTDB id 1110 NGFG RS09235 WP 003689817.1    | HRVLMG                                          | VLTEEQMVEFHCVPVFR      | RGDKVFFAVSDPTQMPQIQKTVSAAGIAVELVIVEDDQLAGLLDWVGS         | 146 |
| NTDB id 1251 GC085 RS07725 WP 011946523.1   | GTIPVN                                          | LVNEKLIKRRHAMVPLFS     | RGTNLYLATDDPSKQASLKEIQFHTGLNTHAIVVETDKLSALIDNLL          | 157 |
| NTDB id 1018 ACIAD RS01685 WP 004920473.1   | ALFLKDK                                         | IDEKLIQKYRIMPLVHRGHVLY | VATSNPTNIEAMDAIRFNSKLLKVEPIIVEHDKLERLLSEHFVEETHFN        | 157 |
| NTDB id 1058 ABD1 RS01615 WP 001274986.1    | SQIPKD                                          | LVDDKLLILKHRI          | LPLIQRGQILYVATSNPSNIEAIDAIRFNSKLLVEPVIVEHHKLEKVLGQHFAEES | 157 |
| consensus                                   | * * * * * * * * * * * * * * * * * * * * * * * * |                        |                                                          |     |

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|       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       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| NTDB id 1306 DR RS10060 WP 027479822.1      | EL.....AE..RNKTQ | QSQAEDLSVADES       | AIQVVDSIIREAALQDASDIHIETTEDAVKVR  | YRI                 | DGALRE   | QNSFP    | 549             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| NTDB id 1168 A1552VC RS11070 WP 000957200.1 | GK..EISQDE       | LANLVKVSDELQ        | SIEDLSQDDSPVSRFINQVLLDAVRKGASDIHF | EPYENQYR            | IRLRCDG  | ILVETQ   | QPA 227         |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| NTDB id 1293 VP RS12240 WP 005479695.1      | LK..EINQEEL      | ASLVDVGADEIDNIEDLSQ | DESPVSR                           | YINQILLDAVRKGASDIHF | EPYEKMYR | VRRLRCDG | ILIIETQ QPP 227 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| NTDB id 1401 DSB67 RS12665 WP 010643259.1   | LK..EINQEEL      | ASLVDVGADEIDNIEDLSQ | DESPVSR                           | YINQILLDAVRKGASDIHF | EPYENMYR | VRRLRCDG | ILIIETQ QPP 227 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| NTDB id 70262 T556 RS10085 WP 003689817.1   | EL.....GEGQ      | EEEEESHTLYIDNEEA    | EDGVPVPRFIHKTLSDALRSGASDIHF       | FYEHNARIR           | FRV      | DGQLRE   | VVQPP 217       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| NTDB id 1110 NGFG RS09235 WP 003689817.1    | EL.....GEGQ      | EEEEESHTLYIDNEEA    | EDGVPVPRFIHKTLSDALRSGASDIHF       | FYEHNARIR           | FRV      | DGQLRE   | VVQPP 217       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| NTDB id 1251 GC085 RS07725 WP 011946523.1   | YVEDSGDLEG       | LEISAD.DEDQ         | DIDTATSVTDDAPIVKFVNKILLDAIR       | QGASDIHF            | EPYEREYR | IRYRQDG  | ILHEVATPP 236   |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       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|       |       |       |       |       |       |       |       |       |       |       |       |       |
| NTDB id 1018 ACIAD RS01685 WP 004920473.1   | E...ELD...LDVE   | VDPHTTDDDDDEDK      | KLDEAPIVKYINKLLIDAIRMSASDL        | HFEPYEKS            | YRVRYR   | VDGVLRL  | LIATPP 231      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       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|       |       |       |       |       |       |       |       |       |       |       |       |       |
| NTDB id 1058 ABD1 RS01615 WP 001274986.1    | E...EFD...LDVN   | LDGPTAQEDEE         | EAPQGEDAPIVKYINKLLIDAIRMGASDL     | HFEPYEKS            | YRVRYR   | VDGVLRL  | LIATPP 231      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       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|       |       |       |       |       |       |       |       |       |       |       |       |       |
| consensus                                   | *                | *                   | **                                | **                  | *        | *        | *****           | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** | ***** |

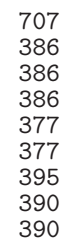
logo

|                                             |                                                 |                               |                                    |     |
|---------------------------------------------|-------------------------------------------------|-------------------------------|------------------------------------|-----|
| NTDB id 1306 DR RS10060 WP 027479822.1      | KGAAQQIMARL                                     | KIMGHLDIAERRVPQDGRVR..FKKGSID | LDLRLSTLPTVYGEKAVMRLLQKASNIPELEQLG | 627 |
| NTDB id 1168 A1552VC RS11070 WP 000957200.1 | SHLSRRLAARIK                                    | ILSKLDIAERRLPQDGRIKLRIS       | .DTAIDMRVSTLPTLWGEKIVLRLLDSSAANL   | 306 |
| NTDB id 1293 VP RS12240 WP 005479695.1      | NHLSRRLSARIK                                    | ILSKLDIAERRLPQDGRIKLRIS       | .DTAIDMRVSTLPTLWGEKIVLRLLDSSAANL   | 306 |
| NTDB id 1401 DSB67 RS12665 WP 010643259.1   | SHLSRRLSARIK                                    | ILSKLDIAERRLPQDGRIKLRIS       | .DTAIDMRVSTLPTLWGEKIVLRLLDSSAANL   | 306 |
| NTDB id 70262 T556 RS10085 WP 003689817.1   | IAVRGQLASRIK                                    | VMSRLDISEKRIPQDGRMQLTFQKGGK   | VPVDFRVSTLPTLFG                    | 297 |
| NTDB id 1110 NGFG RS09235 WP 003689817.1    | IAVRGQLASRIK                                    | VMSRLDISEKRIPQDGRMQLTFQKGGK   | VPVDFRVSTLPTLFG                    | 297 |
| NTDB id 1251 GC085 RS07725 WP 011946523.1   | ASLSSRITARIK                                    | VMSNLDISERRIPQDGGFKMKISK      | .SRAIDFRVSTCPTSAGEKVVMRVLDSGA      | 315 |
| NTDB id 1018 ACIAD RS01685 WP 004920473.1   | LQLATRLASRL                                     | KVMSQMDISEKRVPQDGRIKLRIS      | .SKTIDFRVNSLPTLFG                  | 310 |
| NTDB id 1058 ABD1 RS01615 WP 001274986.1    | LQLANRLASRL                                     | KVMSQMDISEKRVPQDGRIKLRIS      | .SKAIDFRVNSLPTLFG                  | 310 |
| consensus                                   | * * * * * * * * * * * * * * * * * * * * * * * * |                               |                                    |     |

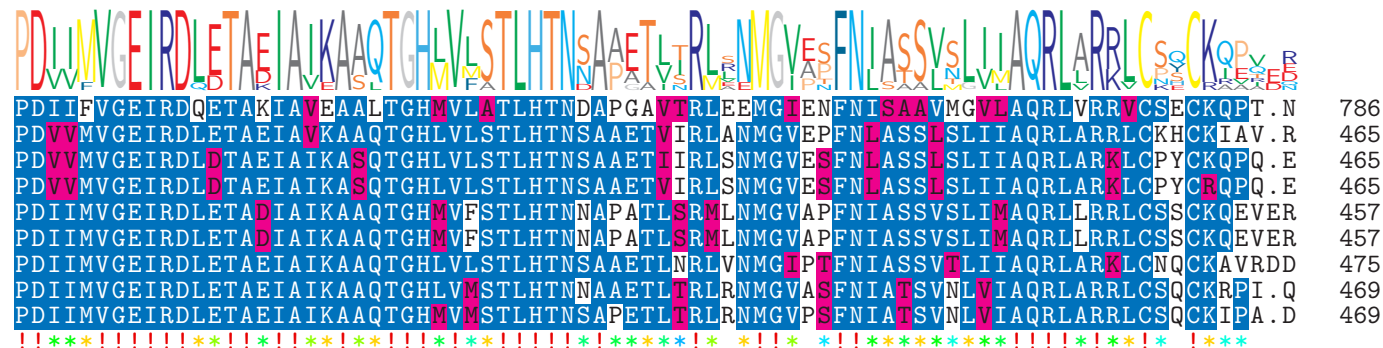
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NTDB id 1293 VP RS12240 WP 005479695.1
NTDB id 1401 DSB67 RS12665 WP 010643259.1
NTDB id 70262 T556 RS10085 WP 003689817.1
NTDB id 1110 NGFG RS09235 WP 003689817.1
NTDB id 1251 GC085 RS07725 WP 011946523.1
NTDB id 1018 ACIAD RS01685 WP 004920473.1
NTDB id 1058 ABD1 RS01615 WP 001274986.1
consensus

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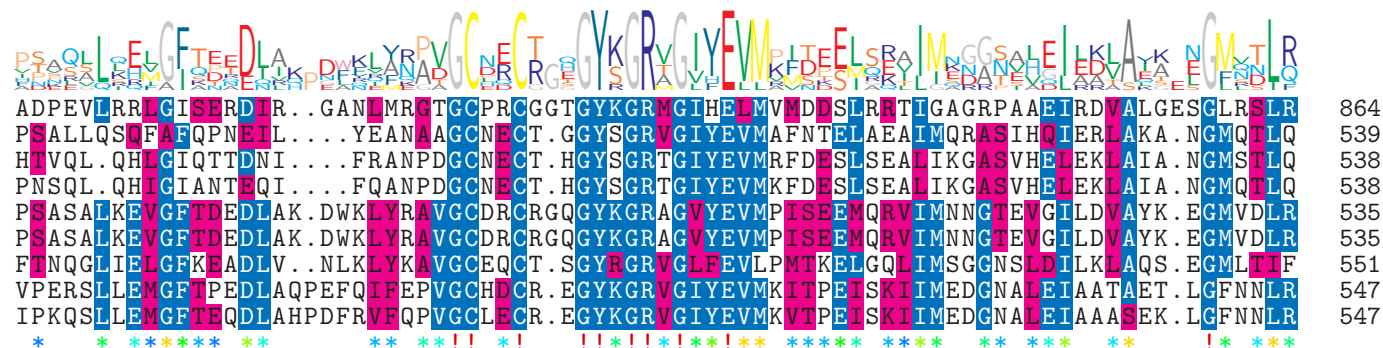
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NTDB id 1168 A1552VC RS11070 WP 000957200.1
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NTDB id 1401 DSB67 RS12665 WP 010643259.1
NTDB id 70262 T556 RS10085 WP 003689817.1
NTDB id 1110 NGFG RS09235 WP 003689817.1
NTDB id 1251 GC085 RS07725 WP 011946523.1
NTDB id 1018 ACIAD RS01685 WP 004920473.1
NTDB id 1058 ABD1 RS01615 WP 001274986.1
consensus
```



```

NTDB id 1306 DR RS10060 WP 027479822.1
NTDB id 1168 A1552VC RS11070 WP 000957200.1
NTDB id 1293 VP RS12240 WP 005479695.1
NTDB id 1401 DSB67 RS12665 WP 010643259.1
NTDB id 70262 T556 RS10085 WP 003689817.1
NTDB id 1110 NGFG RS09235 WP 003689817.1
NTDB id 1251 GC085 RS07725 WP 011946523.1
NTDB id 1018 ACIAD RS01685 WP 004920473.1
NTDB id 1058 ABD1 RS01615 WP 001274986.1
consensus

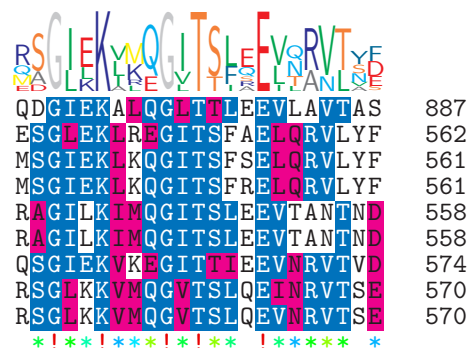
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```

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NTDB id 1168 A1552VC RS11070 WP 000957200.1
NTDB id 1293 VP RS12240 WP 005479695.1
NTDB id 1401 DSB67 RS12665 WP 010643259.1
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NTDB id 1058 ABD1 RS01615 WP 001274986.1
consensus

```



 non conserved  
 similar  
  $\geq 50\%$  conserved