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|---------------------------------------------|----------------------------------------------------------------------------------|----|
| NTDB id 1306 DR RS10060 WP 027479822.1      | MALSIGDRRLGAILLDQGYLGDNDLQRALERHSEVGGRLADVLIDSGMVGEKRIARAIEEALGIPLVNLLAVQPDPAALR | 80 |
| NTDB id 1366 NTHI RS01950 WP 011271972.1    | .....                                                                            | 0  |
| NTDB id 1355 HI 0298 AAC21962.1             | .....                                                                            | 0  |
| NTDB id 1384 A4U84 RS08525 WP 010787006.1   | .....                                                                            | 0  |
| NTDB id 1468 ASU2 RS05090 WP 014991734.1    | .....                                                                            | 0  |
| NTDB id 1436 BW25113 RS00530 WP 001025145.1 | .....                                                                            | 0  |
| 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 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      | SIRPQTALNLQAFPPFALEGDRRLRVALVDPLSSFSIETLEDDSGFDIEPYQALREEVMWAIATHYPELGLEIWPVSGASDA | 160 |
| NTDB id 1366 NTHI RS01950 WP 011271972.1    | .....                                                                              | 0   |
| NTDB id 1355 HI 0298 AAC21962.1             | .....                                                                              | 0   |
| NTDB id 1384 A4U84 RS08525 WP 010787006.1   | .....                                                                              | 0   |
| NTDB id 1468 ASU2 RS05090 WP 014991734.1    | .....                                                                              | 0   |
| NTDB id 1436 BW25113 RS00530 WP 001025145.1 | .....                                                                              | 0   |
| 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 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      | GRTGGKLGERLITHGYITDAQLQVALDAQQTGEALGATLISQRAITEDQLYEVLAEQEGTTFLPNPSGFHPGEEVLGSM | 240 |
| NTDB id 1366 NTHI RS01950 WP 011271972.1    | .....                                                                           | 0   |
| NTDB id 1355 HI 0298 AAC21962.1             | .....                                                                           | 0   |
| NTDB id 1384 A4U84 RS08525 WP 010787006.1   | .....                                                                           | 0   |
| NTDB id 1468 ASU2 RS05090 WP 014991734.1    | .....                                                                           | 0   |
| NTDB id 1436 BW25113 RS00530 WP 001025145.1 | .....                                                                           | 0   |
| 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 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      | LRADALRLLAVPVDETEQGVTVLTSDPRKRPDIDALIGRPVQLMLTRPRDIERLIEQFYPPQRGRLGEQLVQEGTLSRDQL | 320 |
| NTDB id 1366 | NTHI RS01950 WP 011271972.1    | .....                                                                             | 0   |
| NTDB id 1355 | HI 0298 AAC21962.1             | .....                                                                             | 0   |
| NTDB id 1384 | A4U84 RS08525 WP 010787006.1   | .....                                                                             | 0   |
| NTDB id 1468 | ASU2 RS05090 WP 014991734.1    | .....                                                                             | 0   |
| NTDB id 1436 | BW25113 RS00530 WP 001025145.1 | .....                                                                             | 0   |
| 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 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      | REALQVQAREGKVKPLGEVITELGFASPDEVDSALQKQNVGGGRLEDTLVQSGKLSPEMLARSLAAQLGYEFLDPIQNP | 400 |
| NTDB id 1366 | NTHI RS01950 WP 011271972.1    | .....MTSY....ALLHTQRVTAQNGEIFTI.....SP                                          | 24  |
| NTDB id 1355 | HI 0298 AAC21962.1             | .....MTSY....ALLHTQRVTAKNGEVFTI.....SP                                          | 24  |
| NTDB id 1384 | A4U84 RS08525 WP 010787006.1   | .....MSQY....T....ICEQQTERIFDI.....SP                                           | 19  |
| NTDB id 1468 | ASU2 RS05090 WP 014991734.1    | .....MQY....S....VCDMNSQQVFDI.....SE                                            | 18  |
| NTDB id 1436 | BW25113 RS00530 WP 001025145.1 | .....MNIPQLT.....                                                               | 7   |
| NTDB id 1168 | A1552VC RS11070 WP 000957200.1 | .....MLTNLVAIIRQAELISATQEQA VVTQVSASGTSVPEALLELSIFHAQELTEQLSHIFGLPETDLSRYDY     | 69  |
| NTDB id 1293 | VP RS12240 WP 005479695.1      | .....MHSNLSTIIRQKGLLTFSQEE SLIEQVKASGISMPEALLSSGFFTSSSLAEHLSSIFGLSQPELSQY       | 69  |
| NTDB id 1401 | DSB67 RS12665 WP 010643259.1   | .....MLTNLSTVLRQAGILTFSQEE SLLEQVKASGISMPEALLSSGFFQSHL TEHLSSVFGLSCTSLNQY       | 69  |
| NTDB id 1110 | NGFG RS09235 WP 003689817.1    | .....MSVGLLRILVQNQVVTVEQAEHYY.NESQAGKEVLPM LFS DGVISPKSLAALIARVFSYSILDLRHYPR    | 68  |
| NTDB id 1251 | GC085 RS07725 WP 011946523.1   | ...MALATEEYRLQGIGQLLVLEKLLDKTKAIELHKLAAAEKISLLQYIVKNKILSAEQIALTAAQNFVPM         | 77  |
| NTDB id 1018 | ACIAD RS01685 WP 004920473.1   | ...MSAFTTPPKFSGFIRRLVEEGYVNAQNMQQALEKAKKFKQDIVPYLIDNFSISPLTIAEIIISLEFGEPL       | 77  |
| NTDB id 1058 | ABD1 RS01615 WP 001274986.1    | ...MSALHTSPKFTGFFRRLVEEKHVSAA TMQTALDAKRAKQDTVAYLIEEVHLSPSLLAETISA EFAEPYFDL    | 77  |
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| NTDB id 1306 | DR RS10060 WP 027479822.1      | DPKVALMIPEATARRVYVVPVRLQGNLSLVVAMKDPRNVFALDDLKLITGKETLPVAVMAEKDIIRLIERYFGEKGFEKLNK | 480 |
| NTDB id 1366 | NTHI RS01950 WP 011271972.1    | DLWERNQQQQSLILRYFALPLKEENNRLWLGVDLSNLSACETIAFITGKPVPEPILLESSQLKELLQQLTPHQM         | 104 |
| NTDB id 1355 | HI 0298 AAC21962.1             | DLWERNQQQQSLILRYFALPLKEENNRLWLGVDLSNLSACETIAFITGKPVPEPILLESSQLKELLQQLTPNQM         | 104 |
| NTDB id 1384 | A4U84 RS08525 WP 010787006.1   | SRWQKNCEEKQLILRYLAVPVQETEHKLWLAVDENNLTACEIFAFMTHKQIEPVVIASDELKYLLNALSPEQQPI        | 99  |
| NTDB id 1468 | ASU2 RS05090 WP 014991734.1    | SLWQKNCDEKHILLRYLAIPIQENDDTLWLAIDDMNNLSACEIFAFIAHKTIEPVLISSDELKYLLNQLSPEQQS        | 98  |
| NTDB id 1436 | BW25113 RS00530 WP 001025145.1 | .....ALCLRYHGVLLDASEEVVHVAVVDAPSHELLDALHFATTKRITCITCWTRQQMEGHAS.....               | 64  |
| NTDB id 1168 | A1552VC RS11070 WP 000957200.1 | ANLCQQGLGLRELITRYDALPIAKQGNL LLLAVSDPTLLQAE EEF RFATGLQVELALADHRA LQAATIRRLYGRS    | 149 |
| NTDB id 1293 | VP RS12240 WP 005479695.1      | ASLCQQGLGLRELITRHNALPLHRT PSTLLLAVADPTNQAEDDFRFATGLQVELVLADFRELSTAIRRLYGRS         | 149 |
| NTDB id 1401 | DSB67 RS12665 WP 010643259.1   | ASLCQTLGLRDLITRHNALPLNRTSSTLILAVADPTNLQAEDDFRFATGLQVELVLADFRELTAATIRRLYGRS         | 149 |
| NTDB id 1110 | NGFG RS09235 WP 003689817.1    | HRVLMGVLTEEQMV E FHCVPVFRRGDKVFFAVSDPTQMPQIQKT VSAAGIAVELVIVEDDQLAGLLDWVGS         | 146 |
| NTDB id 1251 | GC085 RS07725 WP 011946523.1   | GTIPVNLVNEKLIK RHAMVP LFSRGTNLYLATDPSKQASLKEI QFHTGLNTHAIVVETDKLSALIDNLLTAKE       | 157 |
| NTDB id 1018 | ACIAD RS01685 WP 004920473.1   | ALFLDKDIDEKLIQKRIIMPLVHRGHVLYVATSNPTNIEAMDIAIRFNSKLLKVEPIIVEHDKLLEHFLTAKE          | 157 |
| NTDB id 1058 | ABD1 RS01615 WP 001274986.1    | SQIPKDLVDQKLLIKHRI LPLIQRGQILYVATSNPSNIEAIDAIRFNSKLLVEPVIVEHHKLEKVLGQHFAE          | 157 |
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| NTDB      | id | 1306 | DR      | RS10060 | WP         | 027479822.1 |
| NTDB      | id | 1366 | NTHI    | RS01950 | WP         | 011271972.1 |
| NTDB      | id | 1355 | HI      | 0298    | AAC21962.1 |             |
| NTDB      | id | 1384 | A4U84   | RS08525 | WP         | 010787006.1 |
| NTDB      | id | 1468 | ASU2    | RS05090 | WP         | 014991734.1 |
| NTDB      | id | 1436 | BW25113 | RS00530 | WP         | 001025145.1 |
| 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 | 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 |
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| NTDB      | id | 1306 | DR      | RS10060 | WP         | 027479822.1 |
| NTDB      | id | 1366 | NTHI    | RS01950 | WP         | 011271972.1 |
| NTDB      | id | 1355 | HI      | 0298    | AAC21962.1 |             |
| NTDB      | id | 1384 | A4U84   | RS08525 | WP         | 010787006.1 |
| NTDB      | id | 1468 | ASU2    | RS05090 | WP         | 014991734.1 |
| NTDB      | id | 1436 | BW25113 | RS00530 | WP         | 001025145.1 |
| 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 | 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 |
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|-----------|----|------|---------|---------|------------|-------------|
| NTDB      | id | 1306 | DR      | RS10060 | WP         | 027479822.1 |
| NTDB      | id | 1366 | NTHI    | RS01950 | WP         | 011271972.1 |
| NTDB      | id | 1355 | HI      | 0298    | AAC21962.1 |             |
| NTDB      | id | 1384 | A4U84   | RS08525 | WP         | 010787006.1 |
| NTDB      | id | 1468 | ASU2    | RS05090 | WP         | 014991734.1 |
| NTDB      | id | 1436 | BW25113 | RS00530 | WP         | 001025145.1 |
| 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 | 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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 non conserved  
 similar  
  $\geq 50\%$  conserved