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|                                             |      |    |
|---------------------------------------------|------|----|
| NTDB id 1169 A1552VC RS11075 WP 000648511.1 | MAKN | 72 |
| NTDB id 1402 DSB67 RS12670 WP 010643257.1   | MAKN | 71 |
| NTDB id 1113 AAA85695.1 219..1451( )        | MAKN | 74 |
| NTDB id 1112 NGFG RS09215 WP 003689811.1    | MAKN | 74 |
| NTDB id 183964 A9E78 RS07365 WP 010947252.1 | MAKN | 71 |
| NTDB id 1252 GC085 RS07730 WP 011213805.1   | MAKN | 71 |
| NTDB id 1198 PSJM300 03950 AFN76868.1       | MAKN | 70 |
| NTDB id 1016 ACIAD RS01680 WP 004920476.1   | MAKN | 73 |
| NTDB id 1059 ABD1 RS01610 WP 000279215.1    | MAKN | 73 |
| consensus                                   | MAKN |    |

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| NTDB id 1169 A1552VC RS11075 WP 000648511.1 | FTRQLATM | 152 |
| NTDB id 1402 DSB67 RS12670 WP 010643257.1   | FTRQLATM | 151 |
| NTDB id 1113 AAA85695.1 219..1451( )        | FTRQLATM | 154 |
| NTDB id 1112 NGFG RS09215 WP 003689811.1    | FTRQLATM | 154 |
| NTDB id 183964 A9E78 RS07365 WP 010947252.1 | FTRQLATM | 151 |
| NTDB id 1252 GC085 RS07730 WP 011213805.1   | FTRQLATM | 151 |
| NTDB id 1198 PSJM300 03950 AFN76868.1       | FTRQLATM | 150 |
| NTDB id 1016 ACIAD RS01680 WP 004920476.1   | FTRQLATM | 153 |
| NTDB id 1059 ABD1 RS01610 WP 000279215.1    | FTRQLATM | 153 |
| consensus                                   | FTRQLATM |     |

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|---------------------------------------------|-----------|-----|
| NTDB id 1169 A1552VC RS11075 WP 000648511.1 | DRVATYKEK | 232 |
| NTDB id 1402 DSB67 RS12670 WP 010643257.1   | DRVATYKEK | 231 |
| NTDB id 1113 AAA85695.1 219..1451( )        | DRVATYKEK | 234 |
| NTDB id 1112 NGFG RS09215 WP 003689811.1    | DRVATYKEK | 234 |
| NTDB id 183964 A9E78 RS07365 WP 010947252.1 | DRVATYKEK | 231 |
| NTDB id 1252 GC085 RS07730 WP 011213805.1   | DRVATYKEK | 231 |
| NTDB id 1198 PSJM300 03950 AFN76868.1       | DRVATYKEK | 230 |
| NTDB id 1016 ACIAD RS01680 WP 004920476.1   | DRVATYKEK | 233 |
| NTDB id 1059 ABD1 RS01610 WP 000279215.1    | DRVATYKEK | 233 |
| consensus                                   | DRVATYKEK |     |

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| NTDB id 1169 A1552VC RS11075 WP 000648511.1 | ALGAIYSE | 312 |
| NTDB id 1402 DSB67 RS12670 WP 010643257.1   | ALGAIYSE | 311 |
| NTDB id 1113 AAA85695.1 219..1451( )        | ALGAIYSE | 314 |
| NTDB id 1112 NGFG RS09215 WP 003689811.1    | ALGAIYSE | 314 |
| NTDB id 183964 A9E78 RS07365 WP 010947252.1 | ALGAIYSE | 311 |
| NTDB id 1252 GC085 RS07730 WP 011213805.1   | ALGAIYSE | 311 |
| NTDB id 1198 PSJM300 03950 AFN76868.1       | ALGAIYSE | 310 |
| NTDB id 1016 ACIAD RS01680 WP 004920476.1   | ALGAIYSE | 313 |
| NTDB id 1059 ABD1 RS01610 WP 000279215.1    | ALGAIYSE | 313 |
| consensus                                   | ALGAIYSE |     |

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NTDB id 1059 ABD1 RS01610 WP 000279215.1
consensus

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| K | I | R | E | D | V | A | G | Q | M | I | A | M | R | T | E | L | F | P | M | N | L | A | T | G | E | E | S | G | L | D | M | L | N | K | V | A | F | E | F | E | V | D | N | A | V | D | L | S | S | M | E | P | L | M | A | L | G | L | V | G | L |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| E | V | K | R | E | T | T | A | L | P | L | F | S | E | S | E | S | E | F | L | O | K | M | A | T | G | E | E | S | G | L | D | M | L | N | K | V | A | F | E | F | E | V | D | N | A | V | D | L | S | S | M | E | P | L | M | A | L | G | L | V | G | L |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| E | V | Y | R | D | T | A | A | G | M | P | M | I | A | M | R | N | T | E | A | F | F | M | V | L | Q | M | V | I | G | E | E | S | G | L | D | M | L | N | K | V | A | T | I | F | E | F | E | V | D | N | T | V | D | N | L | G | K | I | L | E | P | L | I | I | V | F | L | G | T | V | V | G | G | L |   |   |   |   |   |
| E | V | Y | R | D | T | A | A | G | M | P | M | I | A | M | R | H | C | H | V | F | P | E | L | V | L | Q | M | V | I | G | E | E | S | G | R | L | D | M | L | N | K | A | A | I | Y | F | E | F | E | V | D | N | T | V | D | N | L | S | K | I | L | E | P | L | I | I | V | F | L | G | V | V | G | G | L |   |   |   |   |
| E | I | R | T | R | V | I | Q | L | S | M | T | S | G | M | R | A | T | E | L | F | P | N | M | L | Q | M | S | I | G | E | E | S | G | L | D | M | L | N | K | A | A | E | F | Y | E | D | E | V | D | N | A | V | G | W | L | S | A | M | M | E | P | I | I | I | L | T | L | G | L | V | I | G | T | L |   |   |   |   |   |
| E | I | R | T | R | V | I | Q | L | S | M | T | S | G | M | R | A | T | E | L | F | P | N | M | L | Q | M | S | I | G | E | E | S | G | L | D | M | L | N | K | A | A | E | F | Y | E | D | E | V | D | N | A | V | G | R | L | S | A | M | M | E | P | I | I | I | V | I | L | G | L | V | I | G | T | L |   |   |   |   |   |
| K | I | R | E | V | A | T | G | Q | Q | M | F | T | A | M | E | N | T | H | L | F | P | N | M | V | I | Q | M | V | A | I | G | E | E | S | G | A | L | E | K | M | L | S | K | V | A | D | F | Y | E | E | V | E | N | N | A | V | D | L | S | S | L | E | P | I | M | S | I | L | G | I | L | V | G | G | L |   |   |   |   |
| K | I | R | E | V | A | T | G | Q | Q | M | F | T | A | M | E | N | T | H | L | F | P | N | M | V | I | Q | M | V | A | I | G | E | E | S | G | A | L | E | K | M | L | S | K | V | A | D | F | Y | E | E | V | E | N | N | A | V | D | L | S | S | L | E | P | I | M | S | I | L | G | I | L | V | G | G | L |   |   |   |   |
| K | I | K | S | D | V | S | S | G | M | Q | L | N | F | S | M | R | T | T | G | T | F | P | S | M | A | V | Q | M | T | A | I | G | E | E | S | G | A | L | D | E | M | L | S | K | V | A | T | F | Y | E | D | E | V | D | N | M | V | D | G | L | T | A | L | M | E | P | M | I | M | A | V | L | G | V | L | V | G | G | L |
| K | I | R | E | D | V | S | T | G | Q | L | N | F | A | M | R | V | S | N | R | F | T | P | T | M | A | I | Q | M | V | A | I | G | E | E | S | G | A | L | D | E | M | L | D | K | V | A | N | Y | E | S | E | V | D | H | A | V | D | L | G | L | T | S | M | M | E | P | L | I | M | A | I | L | G | V | L | V | G | G | L |
| K | I | R | E | D | V | A | T | G | Q | Q | L | Q | F | A | M | R | I | S | N | R | F | P | S | M | A | I | Q | M | V | A | I | G | E | E | S | G | A | L | D | E | M | L | D | K | V | A | T | Y | E | N | E | V | D | N | A | V |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |



| Sequence                                                                                      | Position |
|-----------------------------------------------------------------------------------------------|----------|
| VVAMYLP <sup>10</sup> PIF <sup>11</sup> N <sup>12</sup> LMSV <sup>13</sup> LG <sup>14</sup> . | 408      |
| VTAMYLP <sup>10</sup> PIF <sup>11</sup> N <sup>12</sup> LMSV <sup>13</sup> LG <sup>14</sup> . | 407      |
| LVAMYLP <sup>10</sup> PIF <sup>11</sup> N <sup>12</sup> LGNV <sup>13</sup> VA <sup>14</sup> * | 410      |
| LVAMYLP <sup>10</sup> PIF <sup>11</sup> N <sup>12</sup> LGNV <sup>13</sup> VA <sup>14</sup> . | 410      |
| VVAMYLP <sup>10</sup> PIF <sup>11</sup> KLGS <sup>12</sup> AV <sup>13</sup> .                 | 406      |
| VVAMYLP <sup>10</sup> PIF <sup>11</sup> KLGS <sup>12</sup> AV <sup>13</sup> .                 | 406      |
| IIAMYLP <sup>10</sup> PIF <sup>11</sup> QMGSV <sup>12</sup> V <sup>13</sup> .                 | 405      |
| VIAMYLP <sup>10</sup> PIF <sup>11</sup> QMGSV <sup>12</sup> V <sup>13</sup> .                 | 408      |
| VIAMYLP <sup>10</sup> PIF <sup>11</sup> QMGSV <sup>12</sup> V <sup>13</sup> .                 | 408      |



- non conserved
- similar
- $\geq 50\%$  conserved