

|                                                 |           |                       |                      |                        |                       |          |
|-------------------------------------------------|-----------|-----------------------|----------------------|------------------------|-----------------------|----------|
| NTDB id 602 KW2 RS03060 WP 011834647.1          | .....MGYL | VPTVIEQSSRGERAYDIYSRL | LKDRIIMLTGPVEDGMANS  | IAQLFLDAQDNTKDIYLYVNT  | PGGSVSAG              | 75       |
| NTDB id 611 V4T04 RS07970 WP 003129593.1        | .....MGYL | VPTVIEQSSRGERAYDIYSRL | LKDRIIMLTGPVEDGMANS  | IAQLFLDAQDNTKDIYLYVNT  | PGGSVSAG              | 75       |
| NTDB id 330 STU RS11365 WP 002949732.1          | .....     | MIPVVEIQT             | SRGERSYDIYSRL        | LKDRIIMLTGPIEDNMANS    | IAQLFLDAQDNTKDIYLYVNT | PGGSVSAG |
| NTDB id 298 STER RS01925 WP 002949732.1         | .....     | MIPVVEIQT             | SRGERSYDIYSRL        | LKDRIIMLTGPIEDNMANS    | IAQLFLDAQDNTKDIYLYVNT | PGGSVSAG |
| NTDB id 282 KZH43 RS03215 WP 000613477.1        | .....     | MIPVVEIQT             | SRGERSYDIYSRL        | LKDRIIMLTGPVEDNMANS    | IAQLFLDAQDSTKDIYLYVNT | PGGSVSAG |
| NTDB id 246 SPD RS03495 WP 000613477.1          | .....     | MIPVVEIQT             | SRGERSYDIYSRL        | LKDRIIMLTGPVEDNMANS    | IAQLFLDAQDSTKDIYLYVNT | PGGSVSAG |
| NTDB id 244 SPR RS03300 WP 000613477.1          | .....     | MIPVVEIQT             | SRGERSYDIYSRL        | LKDRIIMLTGPVEDNMANS    | IAQLFLDAQDSTKDIYLYVNT | PGGSVSAG |
| NTDB id 242 SP RS03655 WP 000613477.1           | .....     | MIPVVEIQT             | SRGERSYDIYSRL        | LKDRIIMLTGPVEDNMANS    | IAQLFLDAQDSTKDIYLYVNT | PGGSVSAG |
| NTDB id 978736 MGAS37830 RS01915 WP 002985850.1 | .....     | MIPVVEIQT             | SRGERSYDIYSRL        | LKDRIIMLTGPVEDNMANS    | IAQLFLDAQDNTKDIYLYVNT | PGGSVSAG |
| NTDB id 446 SpyM6JRS4 RS01695 WP 002985850.1    | .....     | MIPVVEIQT             | SRGERSYDIYSRL        | LKDRIIMLTGPVEDNMANS    | IAQLFLDAQDNTKDIYLYVNT | PGGSVSAG |
| NTDB id 445 SPYM3 RS01720 WP 002985850.1        | .....     | MIPVVEIQT             | SRGERSYDIYSRL        | LKDRIIMLTGPVEDNMANS    | IAQLFLDAQDNTKDIYLYVNT | PGGSVSAG |
| NTDB id 376 SMU RS07595 WP 255262720.1          | MELKEKYS  | MIPVVEIQT             | SRGERSYDIYSRL        | LKDRIIMLTGPVEDNMANS    | IAQLFLDAQDNTKDIYLYINS | PGGSVSAG |
| NTDB id 1223 Cj0192c YP 002343650.1             | .....MF   | IPYVIEKSSRGERSYDIYSRL | LKDRIIMLTSGEIHDELAAS | IVAQLFLFAEDPTKDIYLYINS | PGGVITSG              | 73       |
| NTDB id 86 BSU 34540 NP 391334.1                | .....MNL  | IPTVIEQTNRGERAYDIYSRL | LKDRIIMLTGSAIDNVANS  | IVSQLFLFAEDPEKESLYINS  | PGGSITAG              | 74       |
| consensus                                       | *****     | *****                 | *****                | *****                  | *****                 |          |

|                                                 |              |       |         |    |    |      |        |          |      |   |        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |     |   |   |   |   |   |   |   |   |   |   |   |   |   |   |     |     |   |     |
|-------------------------------------------------|--------------|-------|---------|----|----|------|--------|----------|------|---|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|-----|-----|---|-----|
| NTDB id 602 KW2 RS03060 WP 011834647.1          | LAIVDTMNFIKS | DVQTI | VMGMAAS | MG | TI | ASSG | TGKGRF | MPLPNAEY | L    | I | HQPMGG | A | Q | G | T | Q | T | D | M | A | V | A | E | Q | L | L | K | T | R | K | R | L | E | Q | 155 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |     |     |   |     |
| NTDB id 611 V4T04 RS07970 WP 003129593.1        | LAIVDTMNFIKS | DVQTI | VMGMAAS | MG | TI | ASSG | TGKGRF | MPLPNAEY | L    | I | HQPMGG | T | Q | G | T | Q | T | D | M | A | V | A | E | Q | L | L | K | T | R | K | R | L | E | Q | 155 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |     |     |   |     |
| NTDB id 330 STU RS11365 WP 002949732.1          | LAIVDTMNFIKS | DVQTI | VMGMAAS | MG | TI | ASSG | TGKGRF | MPLPNAEY | M    | I | HQPMGG | T | G | G | T | Q | T | D | M | A | I | A | E | H | L | L | K | T | R | N | N | L | E | Q | 152 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |     |     |   |     |
| NTDB id 298 STER RS01925 WP 002949732.1         | LAIVDTMNFIKS | DVQTI | VMGMAAS | MG | TI | ASSG | TGKGRF | MPLPNAEY | M    | I | HQPMGG | T | G | G | T | Q | T | D | M | A | I | A | E | H | L | L | K | T | R | N | N | L | E | Q | 152 |   |   |   |   |   |   |   |   |   |   |   |   |   |   |     |     |   |     |
| NTDB id 282 KZH43 RS03215 WP 000613477.1        | LAIVDTMNFIKA | DVQTI | VMGMAAS | MG | TI | ASSG | A      | K        | G    | K | R      | F | M | L | P | N | A | E | M | I | H | Q | P | M | G | G | T | G | G | G | T | Q | T | D | M   | A | I | A | E | H | L | L | K | T | R | N | T | L | E | K   | 152 |   |     |
| NTDB id 246 SPD RS03495 WP 000613477.1          | LAIVDTMNFIKA | DVQTI | VMGMAAS | MG | TI | ASSG | A      | K        | G    | K | R      | F | M | L | P | N | A | E | M | I | H | Q | P | M | G | G | T | G | G | T | Q | T | D | M | A   | I | A | E | H | L | L | K | T | R | N | T | L | E | K | 152 |     |   |     |
| NTDB id 244 SPR RS03300 WP 000613477.1          | LAIVDTMNFIKA | DVQTI | VMGMAAS | MG | TI | ASSG | A      | K        | G    | K | R      | F | M | L | P | N | A | E | M | I | H | Q | P | M | G | G | T | G | G | T | Q | T | D | M | A   | I | A | E | H | L | L | K | T | R | N | T | L | E | K | 152 |     |   |     |
| NTDB id 242 SP RS03655 WP 000613477.1           | LAIVDTMNFIKA | DVQTI | VMGMAAS | MG | TI | ASSG | A      | K        | G    | K | R      | F | M | L | P | N | A | E | M | I | H | Q | P | M | G | G | T | G | G | T | Q | T | D | M | A   | I | A | E | H | L | L | K | T | R | N | T | L | E | K | 152 |     |   |     |
| NTDB id 978736 MGAS37830 RS01915 WP 002985850.1 | LAIVDTMNFIKA | DVQTI | VMGMAAS | MG | TI | ASSG | T      | G        | K    | G | R      | F | M | L | P | N | A | E | M | I | H | Q | P | M | G | G | T | G | G | T | Q | T | D | M | A   | I | A | E | H | L | L | K | T | R | H | R | L | E | K | 152 |     |   |     |
| NTDB id 446 SpyM6JRS4 RS01695 WP 002985850.1    | LAIVDTMNFIKA | DVQTI | VMGMAAS | MG | TI | ASSG | T      | G        | K    | G | R      | F | M | L | P | N | A | E | M | I | H | Q | P | M | G | G | T | G | G | T | Q | T | D | M | A   | I | A | E | H | L | L | K | T | R | H | R | L | E | K | 152 |     |   |     |
| NTDB id 445 SPYM3 RS01720 WP 002985850.1        | LAIVDTMNFIKA | DVQTI | VMGMAAS | MG | TI | ASSG | T      | G        | K    | G | R      | F | M | L | P | N | A | E | M | I | H | Q | P | M | G | G | T | G | G | T | Q | T | D | M | A   | I | A | E | H | L | L | K | T | R | H | R | L | E | K | 152 |     |   |     |
| NTDB id 376 SMU RS07595 WP 255262720.1          | LAIVDTMNFIKS | DVQTI | VMG     | TI | A  | AS   | MG     | TI       | ASSG | A | K      | G | K | R | F | M | L | P | N | A | E | L | I | H | Q | P | M | G | G | T | G | G | T | Q | S   | D | M | A | I | A | E | Q | L | L | K | T | R | K | K | L   | E   | K | 160 |

|                                                 |            |             |                           |     |
|-------------------------------------------------|------------|-------------|---------------------------|-----|
| NTDB id 602 KW2 RS03060 WP 011834647.1          | ILADNSNRSL | EQIHKDAERD  | HWMDAKETLEYGFIDEIMENNSLK. | 199 |
| NTDB id 611 V4T04 RS07970 WP 003129593.1        | ILADNSNRSL | EQIHKDAERD  | HWMDAKETLEYGFIDEIMENNSLK. | 199 |
| NTDB id 330 STU RS11365 WP 002949732.1          | ILADNSGQPI | IEKVHVDAERD | NWMSAQETLEYGFIDEIMTNNQLK. | 196 |
| NTDB id 298 STER RS01925 WP 002949732.1         | ILADNSGQPI | IEKVHVDAERD | NWMSAQETLEYGFIDEIMTNNQLK. | 196 |
| NTDB id 282 KZH43 RS03215 WP 000613477.1        | ILAENSGQSM | EKKVHADAERD | NWMSAQETLEYGFIDEIMANNSLN. | 196 |
| NTDB id 246 SPD RS03495 WP 000613477.1          | ILAENSGQSM | EKKVHADAERD | NWMSAQETLEYGFIDEIMANNSLN. | 196 |
| NTDB id 244 SPR RS03300 WP 000613477.1          | ILAENSGQSM | EKKVHADAERD | NWMSAQETLEYGFIDEIMANNSLN. | 196 |
| NTDB id 242 SP RS03655 WP 000613477.1           | ILAENSGQSM | EKKVHADAERD | NWMSAQETLEYGFIDEIMANNSLN. | 196 |
| NTDB id 978736 MGAS37830 RS01915 WP 002985850.1 | ILAQNAGKTI | KQIHKDAERDY | WMSAEETLAYGFIDEIMENNELK.  | 196 |
| NTDB id 446 SpyM6JRS4 RS01695 WP 002985850.1    | ILAQNAGKTI | KQIHKDAERDY | WMSAEETLAYGFIDEIMENNELK.  | 196 |
| NTDB id 445 SPYM3 RS01720 WP 002985850.1        | ILAQNAGKTI | KQIHKDAERDY | WMSAEETLAYGFIDEIMENNELK.  | 196 |
| NTDB id 376 SMU RS07595 WP 255262720.1          | ILSDNSGKTI | KQIHKDAERDY | WMDAKETLKYGFIDEIMENNELK.  | 204 |
| NTDB id 1223 Cj0192c YP 002343650.1             | ILAKNTKQKV | AKIAKDTERDF | FMSAQEAKLEYGLIDKVLKESFK.. | 194 |
| NTDB id 86 BSU 34540 NP 391334.1                | VLAERTGQPL | EVIERDTRDNR | FKSAEEALEYGLIDKILTHTEDKK  | 197 |
| consensus                                       | *****      | *****       | *****                     |     |

 non conserved  
 similar  
  $\geq 50\%$  conserved