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|               |       |         |                |                |               |           |          |               |                  |                |             |             |            |         |     |         |       |         |         |         |
|---------------|-------|---------|----------------|----------------|---------------|-----------|----------|---------------|------------------|----------------|-------------|-------------|------------|---------|-----|---------|-------|---------|---------|---------|
| NTDB id 601   | KW2   | RS02615 | WP 021036805.1 | EVTDEMPVITEKDI | EQVIEQKTIQIPV | GDLKEKE   | EQTQLNL  | ADDLKAHVIGQDE | AVDKITS          | KAIRRSRVGL     | GKPNRPIGSFL | FVGP        | 482        |         |     |         |       |         |         |         |
| NTDB id 378   | SMU   | RS02690 | WP 002263569.1 | KLDKENTPVITEKN | IEVIVEQKTNIPV | GELKEKE   | EQSQLIHL | ADDLKTRVIGQDA | AVDKIA           | KAIRNRNVGL     | GTPNRPIGSFL | FVGP        | 489        |         |     |         |       |         |         |         |
| NTDB id 241   | SP    | RS04015 | WP 000882523.1 | KITDQDTPSISEKT | IEHIEQKTNIPV  | GDLKEKE   | EQSQLIHL | AEDLKSHVIGQDA | VDKIA            | KAIRNRNVGL     | GTPNRPIGSFL | FVGP        | 488        |         |     |         |       |         |         |         |
| NTDB id 281   | KZH43 | RS03550 | WP 000882517.1 | KITDQDTPPISEKT | IEHIEQKTNIPV  | GDLKEKE   | EQSQLIHL | AEDLKSHVIGQDA | VDKIA            | KAIRNRNVGL     | GTPNRPIGSFL | FVGP        | 488        |         |     |         |       |         |         |         |
| NTDB id 245   | SPD   | RS03860 | WP 000882517.1 | KITDQDTPPISEKT | IEHIEQKTNIPV  | GDLKEKE   | EQSQLIHL | AEDLKSHVIGQDA | VDKIA            | KAIRNRNVGL     | GTPNRPIGSFL | FVGP        | 488        |         |     |         |       |         |         |         |
| NTDB id 243   | SPR   | RS03635 | WP 000882517.1 | KITDQDTPPISEKT | IEHIEQKTNIPV  | GDLKEKE   | EQSQLIHL | AEDLKSHVIGQDA | VDKIA            | KAIRNRNVGL     | GTPNRPIGSFL | FVGP        | 488        |         |     |         |       |         |         |         |
| NTDB id 37894 | BACI  | RS00610 | WP 000971179.1 | EQQGKENSEVIV   | EDIANVVS      | TWTRIPVSK | LAQTETDK | KLNL          | LESILHDRVIGQDE   | AVVAVAKA       | VRRARAGL    | KDPRKPIGSFI | FLGP       | 547     |     |         |       |         |         |         |
| NTDB id 85    | BSU   | 00860   | NP 387967.1    | EKQGGKENSEVIV  | DDIAMVVS      | SWTGVPSK  | LAQTETDK | KLNL          | MENILHSRVIGQDE   | AVVAVAKA       | VRRARAGL    | KDPRKPIGSFI | FLGP       | 546     |     |         |       |         |         |         |
| NTDB id 610   | V4T04 | RS10165 | WP 012897346.1 | VKEDKRQEVTDQ   | AVVAVAST      | LTGVPI    | TQMTKSE  | SDRLIN        | LEKELHKRVVGQEEAT | SAVRA          | IRNRARS     | GVADSRP     | MGSFMFLGP  | 555     |     |         |       |         |         |         |
| NTDB id 290   | KZH43 | RS10025 | WP 001109677.1 | VVPV.YKDLV     | TESDIL        | TTL       | SRLSGIPV | QKLTQ         | TDAKKYN          | LEAELHKRVIGQDQ | AVSSISR     | AIRRNQSGIR  | SHKRPIGSFM | FLGP    | 550 |         |       |         |         |         |
| NTDB id 289   | SPD   | RS10700 | WP 001109677.1 | VVPV.YKDLV     | TESDIL        | TTL       | SRLSGIPV | QKLTQ         | TDAKKYN          | LEAELHKRVIGQDQ | AVSSISR     | AIRRNQSGIR  | SHKRPIGSFM | FLGP    | 550 |         |       |         |         |         |
| NTDB id 287   | SP    | RS11210 | WP 001109712.1 | VVPV.YKDLV     | TESDIL        | TTL       | SRLSGIPV | QKLTQ         | TDAKKYN          | LEAELHKRVIGQDQ | AVSSISR     | AIRRNQSGIR  | SHKRPIGSFM | FLGP    | 550 |         |       |         |         |         |
| NTDB id 377   | SMU   | RS09275 | WP 002262344.1 | .PLLKKRAEVR    | KEEDIL        | ATLSKLS   | GIPVKK   | LTQAD         | SKKYNL           | LERELHKRVIGQD  | AVSSISR     | AIRRNQSGIR  | VGKRPIGSFM | FLGP    | 553 |         |       |         |         |         |
| NTDB id 297   | STER  | RS00545 | WP 011680614.1 | .AKFPKPA       | VDADQIM       | QTL       | SRLSGIPV | EKMTQ         | TDSKRYNL         | SESELHKRVIGQDE | AVSATISR    | AIRRNQSGIR  | TGKRPIGSFM | FLGP    | 556 |         |       |         |         |         |
| NTDB id 329   | STU   | RS10020 | WP 011225298.1 | .AKFPKPA       | VDADQIM       | QTL       | SRLSGIPV | EKMTQ         | TDSKRYNL         | SESELHKRVIGQDE | AVSATISR    | AIRRNQSGIR  | TGKRPIGSFM | FLGP    | 556 |         |       |         |         |         |
| consensus     |       |         |                | *              | *****         | *         | ****     | *             | *!* *            | *              | *****       | *           | *!* *      | *!*!* * | *   | *!*!* * | *!* * | *!*!* * | *!*!* * | *!*!* * |

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|               |       |         |                |                 |         |       |       |       |            |            |            |       |           |           |           |        |        |       |       |         |         |           |         |       |            |       |       |       |
|---------------|-------|---------|----------------|-----------------|---------|-------|-------|-------|------------|------------|------------|-------|-----------|-----------|-----------|--------|--------|-------|-------|---------|---------|-----------|---------|-------|------------|-------|-------|-------|
| NTDB id 601   | KW2   | RS02615 | WP 021036805.1 | TGVGKTELAKQLAKE | LF      | FGSS  | ES    | SMIR  | FDMSEYMEKH | SV         | AKL        | I     | GAPPGYVGY | EE        | AGQLTE    | RVR    | RNPYS  | L     | ILLDE | TEKAHPD | V       | MH        | MFL     | 567   |            |       |       |       |
| NTDB id 378   | SMU   | RS02690 | WP 002263569.1 | TGVGKTEL        | SKQLA   | IEL   | FGS   | E     | DSMIR      | FDMSEYMEKH | AV         | AKL   | V         | GAPPGYVGY | EE        | AGQLTE | KVR    | RNPYS | L     | ILLDE   | VEKAHPD | V         | MH      | MFL   | 574        |       |       |       |
| NTDB id 241   | SP    | RS04015 | WP 000882523.1 | TGVGKTEL        | SKQLA   | IEL   | FGS   | AD    | SMIR       | FDMSEYMEKH | SV         | AKL   | V         | GAPPGYVGY | DE        | AGQLTE | KVR    | HN    | PYS   | L       | ILLDE   | VEKAHPD   | V       | MH    | MFL        | 573   |       |       |
| NTDB id 281   | KZH43 | RS03550 | WP 000882517.1 | TGVGKTEL        | SKQLA   | IEL   | FGS   | AD    | SMIR       | FDMSEYMEKH | SV         | AKL   | V         | GAPPGYVGY | DE        | AGQLTE | KVR    | HN    | PYS   | L       | ILLDE   | VEKAHPD   | V       | MH    | MFL        | 573   |       |       |
| NTDB id 245   | SPD   | RS03860 | WP 000882517.1 | TGVGKTEL        | SKQLA   | IEL   | FGS   | AD    | SMIR       | FDMSEYMEKH | SV         | AKL   | V         | GAPPGYVGY | DE        | AGQLTE | KVR    | HN    | PYS   | L       | ILLDE   | VEKAHPD   | V       | MH    | MFL        | 573   |       |       |
| NTDB id 243   | SPR   | RS03635 | WP 000882517.1 | TGVGKTEL        | SKQLA   | IEL   | FGS   | AD    | SMIR       | FDMSEYMEKH | SV         | AKL   | V         | GAPPGYVGY | DE        | AGQLTE | KVR    | HN    | PYS   | L       | ILLDE   | VEKAHPD   | V       | MH    | MFL        | 573   |       |       |
| NTDB id 37894 | BACI  | RS00610 | WP 000971179.1 | TGVGKTEL        | ARALA   | ES    | MFG   | DE    | DAMIR      | DMSEYMEKH  | ST         | SRL   | V         | GSPPGYVGY | EE        | GGQLTE | KVR    | R     | KPYS  | V       | LLDE    | VEKAHPD   | V       | FN    | ILL        | 632   |       |       |
| NTDB id 85    | BSU   | 00860   | NP 387967.1    | TGVGKTEL        | ARALA   | ES    | MFG   | DE    | DSMIR      | DMSEYMEKH  | ST         | SRL   | V         | GSPPGYVGY | DE        | GGQLTE | KVR    | R     | KPYS  | V       | LLDE    | TEKAHPD   | V       | FN    | ILL        | 631   |       |       |
| NTDB id 610   | V4T04 | RS10165 | WP 012897346.1 | TGVGKTEL        | AKALAD  | SV    | FGS   | ED    | NMIR       | VDMEK      | EH         | ST    | SRL       | I         | GAPPGYVGY | DE     | GGQLTE | R     | V     | RNPYS   | V       | LLDE      | VEKAHPD | V     | FN         | IML   | 640   |       |
| NTDB id 290   | KZH43 | RS10025 | WP 001109677.1 | TGVGKTELAKALA   | EV      | LF    | DD    | ESAL  | IR         | FDMSEYMEK  | FAA        | SRL   | N         | GAPPGYVGY | EE        | GGELTE | KVR    | N     | KPYS  | V       | LLF     | DEVEKAHPD | I       | FN    | VLL        | 635   |       |       |
| NTDB id 289   | SPD   | RS10700 | WP 001109677.1 | TGVGKTELAKALA   | EV      | LF    | DD    | ESAL  | IR         | FDMSEYMEK  | FAA        | SRL   | N         | GAPPGYVGY | EE        | GGELTE | KVR    | N     | KPYS  | V       | LLF     | DEVEKAHPD | I       | FN    | VLL        | 635   |       |       |
| NTDB id 287   | SP    | RS11210 | WP 001109712.1 | TGVGKTELAKALA   | EV      | LF    | DD    | ESAL  | IR         | FDMSEYMEK  | FAA        | SRL   | N         | GAPPGYVGY | EE        | GGELTE | KVR    | N     | KPYS  | V       | LLF     | DEVEKAHPD | I       | FN    | VLL        | 635   |       |       |
| NTDB id 377   | SMU   | RS09275 | WP 002262344.1 | TGVGKTELAKALA   | EV      | LF    | DD    | ESAL  | IR         | FDMSEYMEK  | FAA        | SRL   | N         | GAPPGYVGY | EE        | GGELTE | KVR    | N     | KPYS  | V       | LLF     | DEVEKAHPD | I       | FN    | VLL        | 638   |       |       |
| NTDB id 297   | STER  | RS00545 | WP 011680614.1 | TGVGKTELAKALA   | EV      | LF    | DD    | ESAL  | IR         | FDMSEYMEK  | FAA        | SRL   | N         | GAPPGYVGY | DE        | GGELTE | KVR    | N     | KPYS  | V       | LLF     | DETEKAHPD | I       | FN    | VLL        | 641   |       |       |
| NTDB id 329   | STU   | RS10020 | WP 011225298.1 | TGVGKTELAKALA   | EV      | LF    | DD    | ESAL  | IR         | FDMSEYMEK  | FAA        | SRL   | N         | GAPPGYVGY | DE        | GGELTE | KVR    | N     | KPYS  | V       | LLF     | DETEKAHPD | I       | FN    | VLL        | 641   |       |       |
| consensus     |       |         |                | !!!!!!!!!!      | *!*!* * | *!* * | *!* * | *!* * | *!* *      | *!* *      | !!!!!!!!!! | *!* * | *!* *     | *!* *     | *!* *     | *!* *  | *!* *  | *!* * | *!* * | *!* *   | *!* *   | *!* *     | *!* *   | *!* * | !!!!!!!!!! | *!* * | *!* * | *!* * |



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|-------------------------------------------|---------------------|-----|
| NTDB id 601 KW2 RS02615 WP 021036805.1    | ISNQTQETAETTDEEVP   | 748 |
| NTDB id 378 SMU RS02690 WP 002263569.1    | VIKASNK.VETVTKATSD. | 753 |
| NTDB id 241 SP RS04015 WP 000882523.1     | QIKSAKK.AEVKSSEKEK. | 752 |
| NTDB id 281 KZH43 RS03550 WP 000882517.1  | QIKSAKK.AEVKSSEKEK. | 752 |
| NTDB id 245 SPD RS03860 WP 000882517.1    | QIKSAKK.AEVKSSEKEK. | 752 |
| NTDB id 243 SPR RS03635 WP 000882517.1    | QIKSAKK.AEVKSSEKEK. | 752 |
| NTDB id 37894 BACI RS00610 WP 000971179.1 | VIHSAEKVK.....      | 811 |
| NTDB id 85 BSU 00860 NP 387967.1          | VVKTTAKTN.....      | 810 |
| NTDB id 610 V4T04 RS10165 WP 012897346.1  | KIAQIV.....         | 816 |
| NTDB id 290 KZH43 RS10025 WP 001109677.1  | KFDIA.....          | 810 |
| NTDB id 289 SPD RS10700 WP 001109677.1    | KFDIA.....          | 810 |
| NTDB id 287 SP RS11210 WP 001109712.1     | KFDIA.....          | 810 |
| NTDB id 377 SMU RS09275 WP 002262344.1    | KFDIV.....          | 813 |
| NTDB id 297 STER RS00545 WP 011680614.1   | TFTVV.....          | 816 |
| NTDB id 329 STU RS10020 WP 011225298.1    | TFTVV.....          | 816 |
| consensus                                 |                     |     |



-  non conserved
-  similar
-  ≥ 50% conserved