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                          1         10                  20        30        40        50        60        70
T4a-Ng-MS11-PilD        .MSDLSVLS..PFAVPLAAVLG.......LLVGSFLNVVIYRVPVMMERGWTVFAKEHLNLPLTDDESRTFNLMKPDSCC
T2S-Ko-KCTC1686-PulO    .MENIALLP..EFAAQYPSIWGGFLFLSGLAFGSFFNVVIHRLPLMMER...................AEGVNLCLPASFC
T4a-Pa-PAO1-PilD        .MPLLDYLASHPLAFVLCTILLG......LLVGSFLNVVVHRLPKMMERNWKAEAREALGLE.PEPKQATYNLVLPNSAC
    Cd-630-PilD2        .MDIIIVN.......LYVFIVG......IVFGSFFNVCIFRIP.........................EGISISRPPSHC
    Cp-13-PilD          .MSIIFFLFG...................LIIGSFLNVCIFRIP.........................AGESIAFPPSHC
    Cd-630-PilD1        ....................................................................................
T4b Vc-N16961-TcpJ      .MEYVYLILFSIVS...............LILGSFSNVVIYRLPRKILLKN................HFFYDIDSNRSMC
    EPEC-B171-BfpP      MQESIFLLLVFIYA...............ATITSFIWLAVERLPHQLKWVDN...............PVSDITIWSPGSKC

                                  80        90        100       110       120       130       140
    Ng-MS11-PilD        PKCRVPIRAWQNIPIVSYLLLRGKCASCQTKISIRYP..LIELLTGVLFGLVAWQYG.WSWITLGGLILTAFLISLTFID
    Ko-KCTC1686-PulO    PQCRQPIAWRDNIPLLSFLWLRGRARCCGQPISRRYP..LMELTTGALFVLAGYLMA.PGMPLLGGLIFVSVLLILAAID
    Pa-PAO1-PilD        PRCGHEIRPWENIPLVSYLALGGKCSSCKAAIGKRYP..LVELATALLSGYVAWHFG.FTWQAGAMLLLTWGLLAMSLID
    Cd-630-PilD2        MSCNTRLKPIDLIPVLSYLMSGRKCRYCYEKISSRYA..IVELITGLLFLTVFMLYG.ISTSTIYYLVLVSLLIIITFID
    Cp-13-PilD          GTCKKQLKPIDLVPVFSYLFLGGKCRYCKSKISIRYP..LIELLTGFLYFYVYKYYG.ISFLTVKYIVLITFLIVISFID
    Cd-630-PilD1        .MLQTMEYIIIISLFFAHLINKSLCVFCDREKKNLYNTFFIYIITVVLSVLIYLKFG.ISVECVQYMVLIPFLIIISIVD
    Vc-N16961-TcpJ      PKCGNKISWYDNVPLLSYLLLHGKCRHCDEKISLSYF..IVELSFFIIAFPIYWLST.DWVDSFVLLGLYFILFNLFVID
    EPEC-B171-BfpP      NNCGKKIRWYYLIPVLGYFLCRGECGYCHAKVPVRYP..LTEFICGVCSVIIFVFLGDRLYDAVIVSLLFLCLVFLALID
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                        150       160       170       180       190       200       210       220
    Ng-MS11-PilD        ADTQYLPDSMTLPLIWLGLIFNLDGGFVPLQSAVLGAVAGYSSLWLLCAVYKLLTGKTGMGNGDFKLIAALGAWLGISAL
    Ko-KCTC1686-PulO    AQTQLLPDRLTLPLLWAGLLFNLSDTFAPLAEAVIGAMVGYLSLWSVYWVFRLLTGKEALGYGDFKLLAALGAWLGWQPL
    Pa-PAO1-PilD        ADHQLLPDVLVLPLLWLGLIANHFGLFASLDDALFGAVFGYLSLWSVFWLFKLVTGKEGMGYGDFKLLAMLGAWGGWQIL
    Cd-630-PilD2        IDHFIIPDKILVFGAIFSMIFNLLFKEIPVKDSILGVFICGGSVWIIVLLIEFVIKKECMGGGDIKLFAMLGLYMGVKNG
    Cp-13-PilD          YDTQDVYAVTTYPAVILGIIFALIEKFY.FGENLLNYFMGLVISALVIFLISKLTG..AMGSGDIEIHAIAGIFLGWKLA
    Cd-630-PilD1        YYTIYVYDITIVSGIIVQGII.FLAFFNIAQFDYINHIFGLLIGFIIPYIIAKLTK..GLGYGDVGLYSLCCFALGNNYG
    Vc-N16961-TcpJ      FKSMLLPNLLTYPIFMLAFIYVQQNPALTVESSIIGGFAAFIISYVSNFIVRLFKRIDVMGGGDIKLYTAIGTLIGVEFV
    EPEC-B171-BfpP      LRENWLPACVTYPLFWAGMIT...PGFASSDDKIFGAFTGFLIMYISMKLVSALRKEDVFAGGDIALATAAGAWLGIDKM
                                                                                        *

                        230       240       250       260       270       280
    Ng-MS11-PilD        PVLIFVSSLIGLVA...AIVMRVAKGR....HFAFGPALTVSGWIIFTANDSVWRAVNWWLTHPVR 286
    Ko-KCTC1686-PulO    PQTLLLASASGLVW...TLLQRLVTRRSLEQPLAFGPWLALAGGGIF.....LWSQV......... 265
    Pa-PAO1-PilD        PLTILLSSLVGAIL...GVIMLRLRNAESGTPIPFGPYLAIAGWIALLWGDQITRTYLQFAGFK.. 290
    Cd-630-PilD2        LLTALLSVYVGAVYGICVIIISRIKGKEYNSVIPYGPFISIGALITILCGKQLLELYFSMVI.... 260
    Cp-13-PilD          IINIFLSFIIGGII...AVLAILFKQKKKGDYIAFGPAIGISTIILIFFGNIIIPIYFGV...... 247
    Cd-630-PilD1        FYVIVLSFILAFLFFIILYITKVFKDVDIRKQIPFTPFISLSTILIIFTEYNIFNFYYNLLYKFI. 220
    Vc-N16961-TcpJ      PYLFLLSSIIAFIH.....WFFARVSCRYCLYIPLGPSIIISFVIVFFSIRLM............. 253
    EPEC-B171-BfpP      PFFLILSSFIFILY.....SLPARLRGQVFVPMGPALSASFFICLVYH.................... 249
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