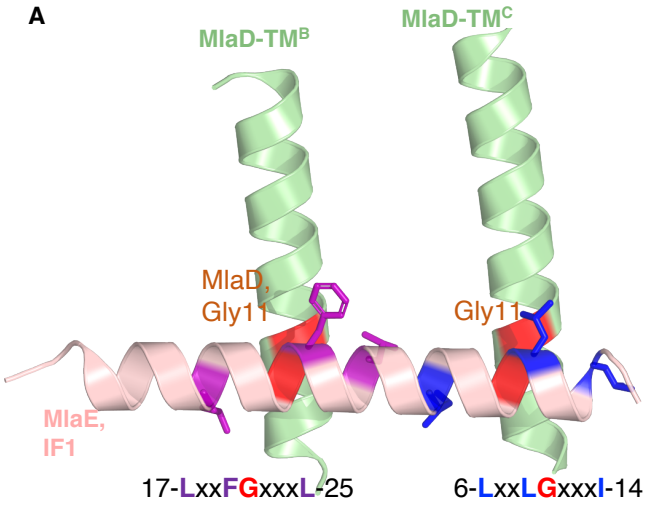

B

MlaD

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                                                    10        20        30
                                                    |         |         |
E. coli WP_001296448.1/1-183                  -MQTKKNEIWVGIFLLAALLAALFVCLKAANVTS
R. rickettsii AFB21753.1/1-149                -MQQNIIETIIGFVVL--IIALLFLIFAYKTGSS
N. moscoviensis WP_053378545.1/1-147          -MEKTKLELAVGVFVLVGVVCLGYLSIKLGKLEV
F. tularensis WP_003014807.1/1-177            -MRNKYFETSVGIFIIIGVLCLLFLTFKVSGTSF
N. gonorrhoeae WP_071197970.1/1-165           -MKKNILEFWVGLFVLIGAAAVAFLAFRVAGGAA
A. baumannii WP_000842362.1/1-226             -MKSRTSELAVGIFVIIFGIALFFLAMKVSGLVG
B. cepacia AIO25115.1/1-181                   -MKKTALDFWVGLFVVVGFLAVLFLALKVGNMSS
L. pneumophila WP_027221206.1/1-158           MKKQRYVDISVGIFMLLGLLALLVMAMKVSNITD
P. luteoviolacea AOT09785.1/1-181             -MNTRKIEILVGLFVALGVAAFVMLAMKVANAGI
V. cholerae AAF95660.1/1-163                  MQQTRKIEFWVGSFVIAGICAILVMIFQVADVKG
K. pneumoniae WP_002918387.1/1-183            -MQTKKTEIWVGVFLLVALLAALFVCLKAANVTS
H. influenzae P45029.1/1-167                  MRQTIKYEFWVGLFLLLGIGALVFLGLRVANVQG
P. aeruginosa WP_003094339.1/1-157            -MQTRTLEIGVGLFLLAGLLALLLLALRVSGLSV
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C

MlaE

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                                                    10        20        30        40        50        60        70        80
                                                    |         |         |         |         |         |         |         |
E. coli EIQ68638.1/1-260 /1-260               ----MLLNALASLGHKGIKTLRTFGRAGLMLFNALVGKPEFRKHAPLLVRQLYNVGVLSMLIIVVSGVFIGMVLGLQGYLVLTTYSAETSLGM
R. rickettsii AFB22698.1/1-259                ----MLFNIANSVGKRTVKFAQSVGSFSLFSFAAVSSIIRPPLYLSLIIRQLLFIGFHSLPVVAMTTFFSGAVLALQSYIGFSRFSAESSIAT
N. moscoviensis ALA57157.1/1-256              -----MIHLIERIGAFVLKYVGEMGRMLIFVLSAFAWLIRPPLRFAQIMKQVHFIGYKSTFVVVLTAGFTGMVLGLQGYYTLRKFGSEALLGS
F. tularensis WP 003035471.1/1-254            ------MTIFSKVYTLTFSLIYSLVKALSLILRIVISKLNIRD----CIIQIKAVGVNSIIIIVTSGVFIGLVLSLQGYYTLSKFGAHSLLGV
N. gonorrhoeae WP 071197969.1/1-258           ------MNFIRSVGAKTLGFIQSLGSITLFLLNILAKSGTAFVRPRLSVRQVYFAGVLSVLIVAVSGLFVGMVLGLQGYTQLSKFKSADILGY
A. baumannii WP 001091949.1/1-258             ------MNTIAWLGRLVIERIRGIGVAALMLLQIIFSLPSAG-GFGRFVYQMHRVGVMSLLIITVSGLFIGLVLGLQGYSILVNVGSESMLGT
B. cepacia AIO25368.1/1-255                   --------MISAIGRYVIGGLERAGYGTRLFVRLVLEFFPLLRRPRLVTKQIHFLGNYSFVIIAVSGLFVGFVLGLQGYYTLNRYGSEQALGL
L. pneumophila AMP90450.1/1-260               -----MLDTIARLGNRGVRALQGIGSSGLFLFSMLFRKPNVLRLWPLVRYQLYFIGVLSCLIIVVSALFIGMVVGLQGYNTLQKFGASSQLGQ
P. luteoviolacea AOT09786.1/1-258             ------MDFLQKLGRKTLNRFASIGRATQMLLGALLNVPNLRQGTPLLIKQLYMVGHQSLLIIMVSGLFIGMVLALQGYTVLVGYGAEDSLGP
V. cholerae AAF95661.1/1-258                  ------MRWVSSVGQRTLAVSETFGRASLMLFGALVGRPQPIRHFPLLVRQLYSIGVQSLAIIIVSGLFIGMVLSLQGYVILVDYGAETSLGQ
K. pneumoniae WP 004150949.1/1-260            ----MLFNALAALGHRGIKTTATFGRAGLMLFNAVVGKPEFRKHAPLLVRQLYNVGVLSMLIIIVSGLFIGMVLGLQGYLVLTTYSAETSLGM
H. influenzae AAC22742.1/1-261                ----MIVNFISALGKQVIDFFRALGRAGFMLFGALIGKPQIRKHFPLLVKQMHVLGVQSLLIILLSGLFIGMVLGLQGYVVLIDFSAETSLGQ
P. aeruginosa KEA30503.1/1-265                MRRVSPLERIRLFGRAGLDVVAALGRSTLFLGHALLGRRTPGTGLHLLVKQLYSVGVLSLAIIVVSGLFIGMVLALQGYNILISYGSEQAVGQ

                                              90        100       110       120       130       140       150       160       170       180
                                              |         |         |         |         |         |         |         |         |         |
E. coli EIQ68638.1/1-260 /1-260               LVALSLLREIGPVVAALLFAGRAGSALTAEIGLMRATEQLSSMEMMAVDPLRRVISPRFWAGVISLPLLTVIFVAVGIWGGSLVGVSWKGIDS
R. rickettsii AFB22698.1/1-259                VVVLSLTREIGPVLAGLMVAGRVGASIAAEIATMRVTEQVDALYTLSTDPIKYLVFPRVITAIITMPCLVLIGDIIGVMGGYLVGVYKLDFNS
N. moscoviensis ALA57157.1/1-256              AVALSMIREIGPVLAALMVTARAGSAMTAEIGIMRITEQIDALDTMAVNPLQYLIAPKLVAGLIGVPLLVAIFDVVGIYGGYLVGVDLLGVSA
F. tularensis WP 003035471.1/1-254            MVALSVLREIGPVVTAMLFAGRACSSITSEIGLMKATDQINSLKVMNVNPISFILSTRFWACMISGPILALIFASVAILAGFILAEAALGISY
N. gonorrhoeae WP 071197969.1/1-258           MVAASLLREIGPVLAAILFASSAGGAMTSEIGLMKTTEQLEAMNVMAVNPVARVVAPRFWAGVFSMPLLASIFNVAGIFGAYLVGVSWLGLDS
A. baumannii WP 001091949.1/1-258             MVSLTLLREIAPVVAALLFAGRAGSALTAEIGSMKQSEQLASMEMIGVDPLKQIVSPRLWAGIVSLPMLTVIFAAIGIVGGKLVGVDFLGVDE
B. cepacia AIO25368.1/1-255                   LVALSLVREIGPVVTALLFAGRAGTSLTAEIGLMKAGEQLTALEMMAVDPIKNVIAPRLWAGIIAMPLLAAIFNAVGVLGGYFVGVVLIGVDP
L. pneumophila AMP90450.1/1-260               LLALSVAREIGPVISALLFAGRAGSALTAEIGLMKATEQLSSMDMMGVDPLGRVVYPRFVAGFIALPILALIFSAVAIYGGYFIGVYWLGVDA
P. luteoviolacea AOT09786.1/1-258             LVALSLLREIGPVVTALLFAGRAGSALTAEIGLMKATEQLSSLEMMAVDPLKRVVAPRFWAGFISMPLLALIFSAVAILGAHLVGVDWLGVDS
V. cholerae AAF95661.1/1-258                  MVALSLLREIGPVVTALLFAGRAGSALTAEIGLMKATEQLSSLEMMAVDPLKRVIAPRFWAGVISMPLLAMIFMAVGIWGGQLVGVDWKGIDH
K. pneumoniae WP 004150949.1/1-260            LVALSLLREIGPVVAALLFAGRAGSALTAEIGLMRATEQLSSMEMMAVDPLRRVISPRFWAGVISLPLLTIIFVAVGIWGGALVGVSWKGIDG
H. influenzae AAC22742.1/1-261                LVALSLLREIGPVVTALLFAGRAGSALTAEIGLMKATEQLSSLEMMAVDPLRRVIAPRFWAGVISMPVLSILFIAIGIWGGSLVGVDWKGVDS
P. aeruginosa KEA30503.1/1-265                MVALTLLREIGPVVTGLLFAGPAGSALTAEIGNMKATEQLSSLEMIGVDPLKYIVAPRLWAGFISMPLLAAIFSVVGIWGGAMVAVDWLGVYE

                                              190       200       210       220       230       240       250       260
                                              |         |         |         |         |         |         |         |
E. coli EIQ68638.1/1-260 /1-260               GFFWSAMQNAVDWRMDLVNCLIKSVVFAITVTWISLFNGYDAIPTSAGISRATTRTVVHSSLAVLGLDFVLTALMFGN-
R. rickettsii AFB22698.1/1-259                AAYLTSTFQYLE-PIDVISGLVKAGVFGFIISIISCYSGYYSGKGAKGVGRATTSAVVNSSILILISNYLITELFFKV-
N. moscoviensis ALA57157.1/1-256              GSYWTSIESAVEWK-DVYGGILKSVSFGLIVSWVCCYKGFYTRMSAEGLGTATTEAVVLSSVLILVWDYFLTSVLL---
F. tularensis WP 003035471.1/1-254            GEFWSNIQSSVT-ASDISNGIIKSIVFAFITAWIALYQGYYCIPDSNGIAKATTKTVVYCCMSVLGADLILTSIMFGGV
N. gonorrhoeae WP 071197969.1/1-258           GIFWSQMQNNITIHYDVINGLIKSAAFGVAVTLIAVHQGFHCVPTSEGILRASTRTVVSSALTILAVDFILTAWMFTD-
A. baumannii WP 001091949.1/1-258             GSFWSGMQNNVQFGHDVVNGIIKSIVFALLCTWIAVFQGYACDPTPEGIATAMTRTVVYSSLCVLGFDFVLTAVMFGGI
B. cepacia AIO25368.1/1-255                   GAFWSQMQGGVQVWADVGNGVIKSIVFGFAVTFIALFQGYEAKPTPEGVSRATTKTVVFASLAVLGLDFLLTAMFS--
L. pneumophila AMP90450.1/1-260               GSFWSNMQAAVNFRIDILSGIIKSLVFAFVVTWISVFQGFECVPTAEGISHATTKTVVYSSLAVLGLDFLLTAMMIGDW
P. luteoviolacea AOT09786.1/1-258             GSFWSIMQSQVSLQQDILNGLIKSFVFALIVTWIALYKGYDCVPTSEGISKATTETVVHSSLAVLGFDFVLTAVMFSS-
V. cholerae AAF95661.1/1-258                  GSFWSAMQASVELGQDIGNSTIKCVVFAFTVTWIALFNGYDAIPTSEGISRATTRTVVHSSLAVLGLDFVLTALMFGN-
K. pneumoniae WP 004150949.1/1-260            GFFWTAMQNAVDWRMDLVNCLIKSLVFAITVTWIALFNGYDAIPTSAGISRATTRTVVHASLAVLGLDFVLTALMFGN-
H. influenzae AAC22742.1/1-261                GSFWSVMQNSVSWSYDILNGFIKAVFFAVAVTWIALFNGYDCMPTSEGISQATTRTVVHASLVVLGLDFILTAIMFGAG
P. aeruginosa KEA30503.1/1-265                GSFWANMQNSVQFTEDVLNGVIKSIVFAFVVTWIAVYQGYDCEPTSEGISRATTRTVVYASLAVLGLDFILTALMFGDF
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