The benchmark dataset for building the classifier to identify subcellular localizations of gram-negative bacterial proteins. 1392 proteins are classified into 8 categories, corresponding to 8 subcellular locations. Proteins, represented by UniProt IDs, under each subcellular location are listed as below.

## 1) Inner membrane

P76264 P17201 P0ABB4 P76169 P08550 P08848 P0AE14 O9RPF3 P04124 P32129 P56580 P02942 Q46909 P31064 P0AC41 P0AB12 P38055 P39196 P61380 P0AFN6 P32705 P0AE74 P45394 P33226 Q06910 P32135 P27125 P36646 P0ADR0 P42590 POAEK4 P76103 P31436 P0AAE5 P32166 P71238 P28303 P0AAR5 P33915 P0AAG5 P64515 P56427 P37621 P76630 P76470 P0A712 P37669 P69853 P72292 P27243 P0AEJ0 P04140 P0AFS7 P0AG90 P46139 P33021 P64439 P05701 P0A2R8 P46125 P22729 P69831 P23830 P63235 P30845 P39338 P76226 P29824 P27303 P27650 P11551 P17443 P76339 P75892 P07014 P31069 P64590 P27254 P32137 P38392 P0ADM0 P0A924 P0AAI3 P0AEB0 P0AER8 P39401 P0ADL1 P0AGA2 P29913 P02916 P0A8Q0 P76552 P06611 P42601 P45800 P55734 P75925 P21865 P07000 P69681 P0AEN4 P0AEK7 Q03478 P75788 P75961 033953 P15928 Q9ZHG0 P77308 P26266 P33361 P0ABT8 P76460 P77377 P07654 P0AAC6 P29915 P0A8U0 P69805 P0ACB7 P0AFR2 P0AEW1 P0AAP7 P32678 P13033 P23136 P0A996 P75958 P0A7C8 P33790 P32709 P29923 P37619 P69425 Q59601 P13738 P0AEH1 007282 P0A6I3 P27844 P0AC23 P0AGK1 P75810 P0AF98 P31462 P0A6H8 P07001 P69212 P04846 Q05605 P0AFA5 P0AE34 P77307 P56579 Q56348 P0AFQ2 P29920 P0AFV0 P0ACG4 P46889 Q00185 P39398 P0AGC0 P26406 P69423 P0AGH1 P75962 P39301 P76417 P0AD65 P69797 P77031 P0AD47 P21365 P25522 P0C2V3 P77354 P37748 P0AAS3 P0AE06 P0ABF8 P29922 P22610 P33599 P77510 P0AG99 P38540 Q51575 P0AA70 P76111 P0AD17 Q8FJ36 P76224 P0ADR2 P33602 P29040 P39282 P0ABA4 P0AAA7 P42628 Q09049 P33650 P23889 P64585 P77858 POAAE8 P60778 P75685 P0ABP3 P0AAD8 P21503 P03959 P63183 P20471 P30149 P31446 P31549 P62723 P60782 P76175 P06030 P0AGF4 P52966 P60632 P77579 P31224 P46133 P0AFM6 P0AGH5 P37327 P0ABN9 P76425 P67153 P39270 P0A742 P06739 P0ABC9 P0A9C0 P37433 P0AER3 P28785 P0AC44 P76180 P0AF54 P36672 P77306 P15070 P69432 P23894 Q05490 P0A6A0 P0A6J5 P76242 P0AD30 P33695 Q59659 P0ABG4 P09391 P0ABB8 P06974 P39314 P41036 P0ABB0 P0AF16 P77804 P0AG00 P18777 P75885 P76657 P77921 P77400 P08400 P80588 POAGMO P39284 P33011 P75835 POAEB2 POAAZO POACXO P64423 P37746 P37002 P37617 P37739 P0A6E6 P0AE16 P0ABI1 P77589 P52636 P45130 O47377 P75712 P30878 P54702 Q56973 P23910 P09852 P69428 P0A1W8 P04825 P76221 P0ABC0 P0AFL1 P18814 P0AET5 P67601 006916 P0AFS1 P75747 P0ABH4 POA8Q3 POAEY8 P75916 P36561 P76278 P64481 P46927 POAGH8 087576 087656 P31801 P00804 Q46839 P0A710 P0AC05 P45768 P0ADW3 P34009

P37674 P69380 P39396 P31119 P0AAM1 P42910 Q53174 P43009 P0ABG1 POAD19 P31553 POABM9 POAC98 P37147 POAD68 P31135 P37661 P75955 POABM1 P75742 POA6Z3 Q51393 P69801 P76343 P22708 Q2YQ73 Q05807 P09127 Q46867 P0ABL8 P69739 P0AAA1 Q09068 P0ABJ6 Q46841 P23849 P15877 P69826 P29918 085093 P76299 P0ADD5 P0AAC4 P76334 P62517 P58593 P76228 POABK2 P24586 POADZ7 P77328 POASS5 POAF52 P02919 POAFA2 P77338 P37180 POAEA5 POAA73 P23516 P77682 P80586 POAB98 POAECO Q3J6C1 P23597 P31125 008120 P0AB67 P08306 P24077 P54745 P38101 P18006 P0AFI7 P26185 P0AD27 P46136 P56621 P39277 P68699 P60955 P26273 P46141 P29914 P0AEH8 P0ADY1 P16683 P11696 P04683 P46481 P97253 P0AFA7 P18200 P16429 P05055 P75870 P77757 P44607 P77179 P0AGI4 P0A7B1 Q06401 P06136 Q05613 P76538 P32482 P11667 P33927 P43531 P31547 P0AC78 P76473 P45570 P10121 P77172 P75830 P29925 P0AF80 P42640 P76445 Q46821 P75757 P42603 P0A6M2 P27843 Q51392 P40608 P14376 P37652 P0AG38 P34008 P46187 P0AA93 P0AEY1 P31437 P0ABA0 P0AA78 P0AAW5 P31826 P31448 P0AFK2 P0AFC3 P37642 P21345 P0AF40 P0ADL6 P0A8D9 P25396 P0AER0 P25714 P33218 P09348 P0C0L7 P06282 P29924 P36655 P09129 P31468 P08401 P0A221 P09323 P33950 P0AF32 051330 A5F389 POAG14 POADI8 P76361 POAASO P15643 POABA6 Q46892 P17334 P45306 POABN1 P76236 P60932 POADK4 POAEB5 POAFPO P09833 P77726 P16256 POAG96 POAFUO POAGE4 PO0803 Q92J98 P29926 P37340 P29131 P76345 P41441 P0ABI8 P0A8K8 P26417 P69367 P76090 P15279 P76474 P0ACV4 P0AD03 P37630 P18004 P0A9P0 P33788 P0AA47 P08691 000593 P27457 P64606 P0ABV6 P0A1J9 P10903 P77610 P64432 052043 P0A8R7 Q46755 P03819 P75831 Q59660 P16552 P0A6Y8 P75770 P31710 P08369

# 2) Cell outer membrane

P41052 P07110 Q00738 P16239 P05825 P0A903 Q03155 P41069 Q05811 P84838 P39180 Q05202 Q70M91 P14916 Q9JTK4 P20440 P13972 P0A924 P0A927 Q7VNU1 P14789 Q51487 P22340 P0A263 P77774 P02930 P29842 P31499 P31631 P12375 P69411 P09169 Q9S142 P18149 P80604 P69973 P10641 P37423 P57041 P0A901 P61320 P38399 P15320 P0C2M9 P16945 Q8K9A7 P24328 P0A3P1 Q51485 Q9K187 P10325 P0A221 P15492 P19809 P37194 P18895 P14542 P0A3N8 P16465 P46026 P06626 P26093 P13670 P17907 P05695 P31600 P69776 P31106 P38370 P15921 Q53047 P31489 P13036 P0ABZ6 Q06282 P43262 P80672 Q83EK8 Q04064 068562 008237 P08321 A5F934 P24082 P32722 P05837 P69996 Q9ZA21 P0A3W4 P26466 P44833 Q934G3 Q47474 033407 Q04877 P0A3U4 P0A231 P45357 Q04641 P0A908 054339 Q57483 P76773 P0A0V8 P08008 P35823 P13980 P0A940 P11910 P44601 P76045 A5F661 Q00595 P40710 P55127 Q02937 P31243 P75780 P69856 P17778 P06971 P23988 Q08017 P07211

# 3) Cytoplasm

P0AGI9 P42321 P0A944 P36662 P0ACC7 P74863 P0A9K1 002286 P06110 P14916 P44521 P0A796 Q9A5I5 087386 P29930 P28894 P31658 P04772 P0A7D4 P0A948 P27888 056973 P43859 P80193 P61380 A1WCP8 P24518 P0A6T1 P69428 P60293 P04825 P69811 Q05526 P60595 P0A1K1 P0A715 P0A9B6 P22320 P55913 Q8GHL1 P0A6F5 P0A7G6 P0A9L5 Q8Y211 P0A9J6 Q59685 P78055 P0AED0 Q1DES4 P22523 Q09064 Q9ABY6 P11071 P33393 P0AC69 Q9EXP1 P50176 Q46822 P68739 Q9ZKG9 P69853 P21338 P33920 P0A962 P17052 P75726 Q9I742 P76346 P0A805 P12994 P26477 P45573 P22608 Q1DB04 P23869 P0A6P9 P76008 P80354 P06722 P24251 P33012 A6SX19 P82998 P07642 P0A9C9 P0A6F9 P0A6R0 Q00594 P60919 P39405 006644 Q7VK65 P32099 P56104 P23830 P75949 P12758 P13024 P0A9D8 P59505 Q9I317 Q62LE0 085300 Q0K9H3 P0A6Z3 P0A8S9 P31473 P0A2Q4 P55711 Q057T0 A4XZ93 P0A9K7 P10908 P77915 P10183 P03030 P27828 P15977 P33771 Q2YQ56 P33697 P0A7E9 P06149 P23619 Q04713 P0A8G9 P06987 P16100 P30335 P0A8P6 Q4QLY5 P24150 P0A6V5 P23536 Q7VFL0 P13039 P69910 P69783 P46547 P44420 P11295 Q65V95 Q1RIS8 P09373 P0A8P1 P84308 Q2W3D5 P0A955 P0A8F4 P33694 Q8XYN6 P18330 P0ABD5 Q165[6 P13266 Q9]W[3 P21762 P0A2J9 P36767 P17854 P0A9G6 087712 P09384 P44694 P0A8U0 P69996 P45363 P0A2U4 Q89UH1 Q84H41 P0A7B5 P13033 P0A763 Q05097 P0A996 P00499 P17169 001551 P07004 P31858 P25745 P07118 P11880 P72324 P0A9A6 P22319 P76145 Q7VZ05 P0A8G0 P08997 P05827 P23996 P0A1F0 P0AGG4 P69819 P0A6G7 P08178 Q07739 P37330 P23872 P0A9I3 P0A821 P0A2W5 P07294 P62601 P44853 P22939 P57777 P21517 P50199 P69506 A4JIA2 P45754 P51837 P0A6D0 P00963 P56601 P34895 P0A6Q3 Q492P3 P08308 P0A6K1 Q3SVA1 P38434 P0A1Y2 P43313 P28629 Q46877 P0A7B8 P10772 P0A8T1 Q2N6X5 P43927 P61698 P46889 P31101 P11886 P04036 P05055 Q6XVY3 P21513 P0A1R2 P0A6I6 P26475 P55995 P54737 A1W0G5 P0AFK0 P30013 P94212 P52093 P21244 P30139 P10902 P69797 P0A6Y5 P69795 Q9APM5 P16525 P33547 083004 P04744 P0A953 Q2GCI5 P25522 068703 P0A9I1 P0C093 P0A7A5 P0A794 P16659 P0C348 P18775 P30850 P35636 006925 P15034 P0A6K6 P0A9A9 P12295 P33599 P0A790 P0A6I0 P62395 085094 P51064 O33732 P0A9N4 P04994 A6Q6H4 Q7BU69 P0C0L2 Q51480 P07639 P52197 P26311 P32199 P33602 P60546 P0A9G2 P0A6L4 P32169 P0A717 P60390 Q07566 P43500 P0A6V8 Q1GND0 P0A6L0 P0A8F8 P0ABT2 P0A9L8 P25080 P76407 Q9S449 Q56415 P27859 P61417 Q6MNT9 P24404 P0A229 P0A6H5 P36936 Q5GTF2 086262 P24171 Q1D823 P69791 P55704 Q87DU6 P26474 P07623 P23721 P0A9L3 P30621 P11458 P0A282 P0A9N8 Q9JT95 P39440 P43341 P0A9H7 01CZL0 P46849 P22317 P0A890 P42195 P44527 P52966 P26612 P10443 P95435 P06989 P77499 P0A988 P22259 P0A731 P44406 P60716 Q46ZI4 P03004 P45131 P69922 O9FA38 P0A9C0 P43336 P50319 O5P409 O85014 O05529 P15070 P0C6D6 P0A968 P0C058 Q9EXP2 P09378 P42673 P50286 Q46M54 P0A9K9 P94845 P39662 P22524 P28181 P69330 P32055 P0A9P0 P63224 P06614 P26602 A5VT73 P13000 P0A9G8 P00944 Q46604 P0A1J9 P0A9F6 Q1Q845 Q2QCI9 P08622 P44442 P0A8U6 Q56019 P55818 P32173 Q51434 Q59516 Q72ER1 P81433 Q9X758

### 4) Extracell

Q9ZEU2 P61416 P37773 Q46669 Q99289 P20041 P33693 P74863 P35483 Q9RBS0 Q9R9R6 P33546 P08038 006949 P22522 Q8RP17 Q05489 P0C1A7 Q06517 Q9PHW6 Q87W65 Q52430 P13717 Q56705 Q8VSP9 Q888Y8 P62530 Q9X2V7 P23031 Q9KLD5 P18010 Q56020 P36175 Q56026 P18014 P55724 Q59639 P09167 Q47096 P22542 P0C1A9 068703 P04959 P74849 Q56827 Q887D0 082882 P45386 P27458 P95434 P13720 P45354 P22251 P81717 P0A6P9 P12625 Q93Q17 Q11137 P15318 025001 Q05608 005465 P27755 Q43998 P77335 Q7BU69 P08407 P14727 Q9RBS1 Q07566 P55711 P42779 P40601 Q9RBS2 P04127 P04977 P07111 P23024 Q8Z289 P15922 Q47499 P16326 Q8ZMM8 Q9I747 P55704 P0C556 P08408 P21158 P22963 P31498 Q8RJP2 P07965 P02969 Q9HWK6 P35482 P58330 P22630 033680 Q6LAD6 P04737 Q48258 Q54450 P44415 Q9X6X9 Q60106 Q9EZE7 P21347 A5F7A4 P09545 P0A4M3 Q5SF96 P08062 P13734 Q01099 P29484 P40600 P0C1A4 Q03475 Q59478 P74873 P52090 P96747 Q887C6 Q2QCI9 P96786 Q56019 Q51718 P08715 P55127 Q8ZNG2 P33219 Q08860 P09489

## 5) Fimbrium

P11900 P53508 P20862 P08180 P07111 P62607 P22595 P33781 P02970 P08191 P25448 P13429 P0ABW7 P21648 P18103 Q52473 Q47953 P12061 Q93U24 Q03846 P33782 P08190 P33784 P25447 P04738 P20861 P15488 P19369 P12267 P53522 P05788 P33406

#### 6) Flagellum

P96786 Q9PHW6 Q03475 P58330 P22251 Q56827 Q56705 P96747 Q08860 P02969 P16326 Q9R9R6

#### 7) Nucleoid

POABT2 P33920 P22523 P36767 P60293 P36659 P0C093 P22524

### 8) Periplasm

P25718 P39185 P77214 P53052 P35483 P0A862 P11278 P31133 P72181 P05465 Q03315 P72298 O68897 Q57142 P21852 P18278 P12376 P0AAA9 P39186 P05458 Q01269 P04032 P02924 Q06530 P42790 P37735 P06875 P31545 P37734 P03841 P37902 P10488 Q8RNT4 P38554 P23006 P00811 Q8VUS8 Q52812 P0AFI5 P18035

P22619 P40120 Q59452 Q06529 Q05433 Q9X4Y1 P61316 P18472 P21170 Q50925 P24930 P33363 P07024 Q01537 P07598 P33407 P21338 O08368 P14924 P14171 P39325 Q9HXB1 Q3J164 P31810 P0ADA1 P51698 Q47084 P0AEQ3 P0AEX9 Q52963 P29822 P62395 P74917 P31550 Q9X759 P77335 P16700 P46883 P24183 P35077 P18126 Q9XDP1 P38683 P23847 P07662 P42213 Q51393 P00099 P0AG82 P37994 P0ABE7 P18473 P0AB24 Q46684 Q51705 P07822 P15069 P00260 Q8GPG1 P17543 Q9L7P2 P0AFH8 P0AEL6 P14497 P0AD59 P37975 P15931 Q47459 P21853 A2TJI4 P42517 P0A326 P0AEE5 Q3J2P2 P07102 P0AFM2 P24037 O53021 P33225 Q82S91 P13656 Q9Z4P0 P39265 P0AG80 P18471 P39691 Q9Z4P4 P35482 P18956 P23485 Q44642 P0AEE1 P40695 P19567 P19843 P60069 Q56952 P0AGC3 Q07982 P0AE85 P13482 P25548 Q03026 P26648 P29898 P0ABZ6 P77202 P04816 P05149 Q9S1H0 Q51658 P33979 P0AAJ8 P51697 P0A855 P77368 Q54468 P52236 P43478 Q06062 Q05097 P29484 P12374 P0A0Y3 P39172 P24059 P24092 P45523 P50024 P36560 P26982 P09394 P0AEU7 P23827 P06202 P0A1W4 P0A321 P13628 Q56686 P0C0T5