

## Supplementary table 1.

A detailed list of TIR domain-containing proteins in bacteria.

Species Name	Quantity	Gi Number	Taxonomy Id
<i>Acaryochloris marina</i> MBIC11017	10	158333903,158335132,158335320,158335656,158335901,158337429,158338098,158338261,158341339,158341564	329726
<i>Acidobacteria bacterium</i> Ellin345	2	94970501,94971286	204669
<i>Acidovorax avenae</i> subsp. <i>citrulli</i> AAC00-1	1	120609226	397945
<i>Acidovorax</i> sp. JS42	3	121594563,121594965,121594971	232721
<i>Acinetobacter</i> sp. ADP1	1	50086248	62977
<i>Actinobacillus pleuropneumoniae</i> serovar 1 str. 4074	1	53729072	228399
<i>Agrobacterium tumefaciens</i>	1	10955119	358
<i>Algoriphagus</i> sp. PR1	3	126648330,126648357,126648781	388413
<i>Alteromonadales bacterium</i> TW-7	2	119472125,119472278	156578
<i>Anabaena variabilis</i> ATCC 29413	3	75910019,75910020,75910382	240292
<i>Anaeromyxobacter</i> sp. Fw109-5	2	153006835,153006836	404589
<i>Anaerotruncus colihominis</i> DSM 17241	1	167771152	445972
<i>Arthrobacter chlorophenolicus</i> A6	1	169174118	452863
<i>Arthrobacter nitroguajacolicus</i>	1	146351247	211146
<i>Aurantimonas</i> sp. SI85-9A1	1	90420036	314269
<i>Azoarcus</i> sp. BH72	4	119897555,119898857,119898888,11989914	62928
<i>Bacillus cereus</i> AH187	1	166980602	405534
<i>Bacillus cereus</i> AH820	1	166997552	405535
<i>Bacillus cereus</i> G9842	1	168142494	405531
<i>Bacillus licheniformis</i> ATCC 14580	1	52080622	279010
<i>Bacillus subtilis</i> subsp. <i>subtilis</i> str. 168	1	16077567	224308
<i>bacterium</i> Ellin514	3	186456604,186457644,186460978	320771
<i>Bacteroides ovatus</i> ATCC 8483	4	160882635,160883125,160887045,160887046	411476
<i>Bacteroides thetaiotaomicron</i> VPI-5482	2	29348412,29348810	226186
<i>Bacteroides uniformis</i> ATCC 8492	1	160888318	411479
<i>Bacteroides vulgatus</i> ATCC 8482	1	150006151	435590
<i>Beggiatoa</i> sp. PS	2	153869313,153871845	422289
<i>Beijerinckia indica</i> subsp. <i>indica</i> ATCC 9039	3	182676913,182676914,182678743	395963
<i>Bordetella bronchiseptica</i> RB50	1	33599474	257310
<i>Bradyrhizobium</i> sp. BTAi1	4	148240889,148240894,148254643,148254944	288000
<i>Bradyrhizobium</i> sp. ORS278	1	146339216	114615
<i>Brucella abortus</i> bv. 1 str. 9-941	1	62289692	262698

<i>Brucella abortus</i> S19	1	189023503	430066
<i>Brucella melitensis</i> 16M	2	17987499,17987957	224914
<i>Brucella melitensis</i> biovar Abortus 2308	1	82699179	359391
<i>Brucella ovis</i> ATCC 25840	2	148559127,148559442	444178
<i>Brucella suis</i> 1330	1	23501622	204722
<i>Brucella suis</i> ATCC 23445	1	163842531	470137
<i>Burkholderia ambifaria</i> MC40-6	1	172063457	398577
<i>Burkholderia multivorans</i> ATCC 17616	1	161524091	395019
<i>Burkholderia pseudomallei</i> DM98	1	167717459	441161
<i>Burkholderia thailandensis</i> E264	1	83720538	271848
<i>Burkholderia xenovorans</i> LB400	1	91781261	266265
<i>Campylobacter coli</i> RM2228	1	57504994	306254
<i>Caulobacter crescentus</i> CB15	1	16125662	190650
<i>Caulobacter</i> sp. K31	1	167647765	366602
<i>Chlorobaculum parvum</i> NCIB 8327	4	193211967,193212322,193212749,193213051	517417
<i>Chlorobium ferrooxidans</i> DSM 13031	1	110597354	377431
<i>Chlorobium limicola</i> DSM 245	2	189346112,189346983	290315
<i>Chlorobium phaeobacteroides</i> BS1	1	189501384	331678
<i>Chlorobium phaeobacteroides</i> DSM 266	6	119356007,119356119,119356671,119356721,119356730,119357110	290317
<i>Chlorobium tepidum</i> TLS	2	21673871,21674286	194439
<i>Chloroflexus aurantiacus</i> J-10-fl	1	163848015	324602
<i>Chloroherpeton thalassium</i> ATCC 35110	2	193215022,193215915	517418
<i>Clostridium beijerinckii</i> NCIMB 8052	2	150017657,150017658	290402
<i>Clostridium boltea</i> ATCC BAA-613	2	160936295,160940648	411902
<i>Clostridium botulinum</i> B str. Eklund 17B	1	187935016	508765
<i>Clostridium butyricum</i> 5521	2	182418236,182418248	447214
<i>Clostridium novyi</i> NT	1	118443757	386415
<i>Clostridium perfringens</i> B str. ATCC 3626	1	168210190	451754
<i>Clostridium perfringens</i> C str. JGS1495	2	169342429,169344357	445334
<i>Clostridium perfringens</i> E str. JGS1987	1	168204813	451755
<i>Clostridium scindens</i> ATCC 35704	1	167759769	411468
<i>Clostridium spiroforme</i> DSM 1552	1	169350767	428126
<i>Clostridium thermocellum</i> ATCC 27405	2	125973650,125973959	203119
<i>Colwellia psychrelythraea</i> 34H	2	71278055,71278712	167879
<i>Congregibacter litoralis</i> KT71	1	88706565	314285
<i>Coprococcus eutactus</i> ATCC 27759	2	163816538,163816550	411474
<i>Cyanothecce</i> sp. ATCC 51142	1	172035010	43989

<i>Cyanothece</i> sp. PCC 7424	17	186898775,186899312,186899355,186900266,186900303,186900530,186900824,186902869,186902894,186902954,186902955,186903249,186903250,186904237,186904241,186904243,186908547	65393
<i>Cyanothece</i> sp. PCC 8801	10	177663917,177664020,177664157,177664433,177664659,177664796,177665979,177666219,177666329,177667146	41431
<i>Dechloromonas aromatica</i> RCB	3	71907829,71908554,71909212	159087
<i>Desulfatibacillum alkenivorans</i> AK-01	2	163725356,163727072	439235
<i>Desulfitobacterium hafniense</i> DCB-2	1	109648169	272564
<i>Desulfitobacterium hafniense</i> Y51	2	89895600,89897330	138119
<i>Desulfococcus oleovorans</i> Hxd3	2	158521636,158523057	96561
<i>Desulfuromonas acetoxidans</i> DSM 684	1	95930804	281689
<i>Dorea formicigenerans</i> ATCC 27755	1	166032274	411461
<i>Dorea longicatena</i> DSM 13814	1	153855947	411462
<i>Endoriftia persephone</i> 'Hot96_1+Hot96_2'	1	167945761	394104
<i>Enterococcus faecalis</i> V583	1	29376482	226185
<i>Erythrobacter litoralis</i> HTCC2594	1	85372881	314225
<i>Erythrobacter</i> sp. NAP1	3	85707656,85709002,85710694	237727
<i>Erythrobacter</i> sp. SD-21	3	149184234,149185058,149185602	161528
<i>Escherichia coli</i> 536	1	110642087	362663
<i>Escherichia coli</i> CFT073	1	26248250	199310
<i>Eubacterium siraeum</i> DSM 15702	2	167749528,167750070	428128
<i>Faecalibacterium prausnitzii</i> M21/2	1	160943499	411485
<i>Flavobacteria bacterium</i> BBFL7	1	89891342	156586
<i>Flavobacteriales bacterium</i> ALC-1	1	163788951	391603
<i>Frankia alni</i> ACN14a	25	111219610,111219960,111220054,111220117,111220275,111220641,111221197,111221198,111221275,111221750,111221751,111221776,111222749,111223306,111223345,111223360,111223390,111223545,111224110,111224384,111224404,111224682,111224864,111224872,111224927	326424
<i>Frankia</i> sp. Ccl3	10	86738803,86738992,86739589,86740215,86740216,86740655,86741681,86742122,86742132,86742863	106370
<i>Frankia</i> sp. EAN1pec	24	158313324,158313711,158314149,158314285,158314575,158315148,158315241,158315321,158315434,158316028,158316033,158316034,158316041,158317093,158317472,158317473,158318093,158318116,158318117,158318124,158318483,158318512,158318516,158318619	298653
<i>Fusobacterium nucleatum</i> subsp. <i>nucleatum</i> ATCC 25586	1	19704057	190304
<i>Fusobacterium nucleatum</i> subsp. <i>polymorphum</i> ATCC 10953	1	167007634	393480
<i>Fusobacterium nucleatum</i> subsp. <i>vincentii</i> ATCC 49256	1	34762589	209882
<i>Gemmata obscuriglobus</i> UQM 2246	1	168702708	214688

<i>Geobacter lovleyi</i> SZ	3	189423147,189423350,189423352	398767
<i>Geobacter metallireducens</i> GS-15	4	78222411,78222415,78223002,78224197	269799
<i>Geobacter</i> sp. FRC-32	2	110601028,110601039	316067
<i>Geobacter sulfurreducens</i> PCA	2	39995660,39997687	243231
<i>Geobacter uranii</i> reducens Rf4	2	148263900,148264783	351605
<i>Gloeobacter violaceus</i> PCC 7421	1	37523598	251221
<i>Gluconacetobacter diazotrophicus</i> PAI 5	1	162145848	272568
<i>Hermiimonas arsenicoxydans</i>	1	193222319	204773
<i>Hydrogenivirga</i> sp. 128-5-R1-1	1	163783407	392423
<i>Hyphomonas neptunium</i> ATCC 15444	1	114800256	228405
<i>Janthinobacterium</i> sp. Marseille	1	152983394	375286
<i>Kordia algicida</i> OT-1	1	163754122	391587
<i>Leptothrix cholodnii</i> SP-6	3	171058491,171059860,171060478	395495
<i>Leuconostoc mesenteroides</i> subsp. <i>mesenteroides</i> ATCC 8293	1	116618176	203120
<i>Limnobacter</i> sp. MED105	2	149928326,149928502	391597
<i>Lyngbya</i> sp. PCC 8106	1	119487330	313612
<i>Magnetospirillum magneticum</i> AMB-1	1	83312508	342108
<i>Maricaulis maris</i> MCS10	1	114571182	394221
<i>marine gamma proteobacterium</i> HTCC2080	1	119504025	247639
<i>Marinobacter algicola</i> DG893	1	149377411	443152
<i>Marinobacter aquaeolei</i> VT8	1	120554189	351348
<i>Marinomonas</i> sp. MED121	1	87120129	314277
<i>Mariprofundus ferrooxydans</i> PV-1	2	114777072,114778590	314345
<i>Mesorhizobium loti</i>	1	20803972	381
<i>Methylobacterium chloromethanicum</i> CM4	6	156451578,156451579,156451644,15645161,156451664,156451741	440085
<i>Methylobacterium extorquens</i> PA1	1	163851347	419610
<i>Methylobacterium nodulans</i> ORS 2060	2	163702122,163708277	460265
<i>Methylobacterium populi</i> BJ001	1	188579372	441620
<i>Methylococcus capsulatus</i> str. Bath	1	53802899	243233
<i>Microcystis aeruginosa</i> NIES-843	6	166363533,166364872,166364873,166366472,166368365,166368885	449447
<i>Microcystis aeruginosa</i> PCC 7806	5	159026969,159029511,159029512,159029883,159030587	267872
<i>Moritella</i> sp. PE36	1	149907700	58051
<i>Mycobacterium gilvum</i> PYR-GCK	1	145224874	350054
<i>Mycobacterium</i> sp. MCS	1	108798443	164756
<i>Nitrobacter hamburgensis</i> X14	1	92117623	323097
<i>Nitrobacter winogradskyi</i> Nb-255	1	75674455	323098
<i>Nitrococcus mobilis</i> Nb-231	1	88811546	314278
<i>Nitrosococcus oceani</i> ATCC 19707	1	77163540	323261
<i>Nitrosospira multiformis</i> ATCC 25196	1	82703380	323848

<i>Nocardiooides</i> sp. JS614	1	119717788	196162
<i>Nodularia spumigena</i> CCY 9414	4	119509708,119510816,119511438,119512412	313624
<i>Nostoc punctiforme</i> PCC 73102	11	186681165,186681166,186681323,186681341,186681684,186682319,186683142,186685782,186686076,186686611,186686618	63737
<i>Nostoc</i> sp. PCC 7120	2	17229067,17229450	103690
<i>Oligotropha carboxidovorans</i> OM5	1	170789713	504832
<i>Opitutus terrae</i> PB90-1	2	182412358,182416269	452637
<i>Paracoccus denitrificans</i> PD1222	1	69937734	318586
<i>Parvibaculum lavamentivorans</i> DS-1	1	154251427	402881
<i>Pelobacter carbinolicus</i> DSM 2380	2	77920508,116878644	338963
<i>Planctomyces maris</i> DSM 8797	3	149173909,149177199,149179443	344747
<i>Plesiocystis pacifica</i> SIR-1	2	149921194,149923599	391625
<i>Polaromonas</i> sp. JS666	3	91790569,91790571,91791178	296591
<i>Porphyromonas gingivalis</i> ATCC 33277	1	188995660	431947
<i>Porphyromonas gingivalis</i> W83	2	34540210,34541475	242619
<i>Pseudoalteromonas tunicata</i> D2	1	88858979	87626
<i>Pseudomonas aeruginosa</i> PA7	1	152988748	381754
<i>Pseudomonas putida</i> W619	1	170722523	390235
<i>Pseudomonas syringae</i> pv. <i>syringae</i> B728a	1	66043375	205918
<i>Psychroflexus torquis</i> ATCC 700755	2	91217324,91218536	313595
<i>Reinekea</i> sp. MED297	1	88799612	314283
<i>Rhizobium etli</i> CIAT 652	1	190894000	491916
<i>Rhizobium</i> sp. NGR234	2	16519676,16519836	394
<i>Rhodobacter sphaeroides</i> 2.4.1	1	77465545	272943
<i>Rhodobacter sphaeroides</i> ATCC 17025	1	146280358	349102
<i>Rhodococcus</i> sp. RHA1	4	111025898,111025900,111025901,111025905	101510
<i>Rhodoferax ferrireducens</i> T118	3	89899866,89899868,89900025	338969
<i>Rhodopirellula baltica</i> SH 1	4	32472902,32472907,32476320,32476921	243090
<i>Rhodopseudomonas palustris</i> BisA53	1	115524812	316055
<i>Rhodopseudomonas palustris</i> BisB18	1	90424156	316056
<i>Rhodopseudomonas palustris</i> BisB5	1	91978097	316057
<i>Rhodopseudomonas palustris</i> CGA009	1	39934665	258594
<i>Rhodopseudomonas palustris</i> HaA2	1	86749749	316058
<i>Rhodospirillum rubrum</i> ATCC 11170	1	83592173	269796
<i>Robiginitalea biformata</i> HTCC2501	1	88804082	313596
<i>Roseovarius nubinhibens</i> ISM	1	83950960	89187
<i>Saccharophagus degradans</i> 2-40	1	90023560	203122
<i>Saccharopolyspora erythraea</i> NRRL 2338	1	134099913	405948
<i>Salinispora arenicola</i> CNS-205	2	159038226,159038227	391037

<i>Salmonella enterica</i> subsp. <i>enterica</i> serovar <i>Agona</i> str. <i>SL483</i>	1	168219791	454166
<i>Salmonella enterica</i> subsp. <i>enterica</i> serovar <i>Dublin</i> str.	1	167560111	439851
<i>Salmonella enterica</i> subsp. <i>enterica</i> serovar <i>Schwarzengrund</i> str.	1	167982220	439843
<i>Shewanella baltica</i> OS223	1	149115100	407976
<i>Shewanella denitrificans</i> OS217	2	91794923,91794925	318161
<i>Shewanella pealeana</i> ATCC 700345	2	157961878,157961881	398579
<i>Shewanella putrefaciens</i> 200	1	124545219	399804
<i>Shewanella sediminis</i> HAW-EB3	1	157376880	425104
<i>Shewanella</i> sp. <i>MR-7</i>	2	114046539,114047355	60481
<i>Shewanella woodyi</i> ATCC 51908	1	170728949	392500
<i>Sinorhizobium medicae</i> WSM419	1	150378393	366394
<i>Solibacter usitatus</i> Ellin6076	6	116620737,116623992,116624951,116625512,116626041,116626738	234267
<i>Sorangium cellulosum</i> 'So ce 56'	10	162448499,162449191,162450065,162451481,162451482,162451823,162451903,162452076,162452079,162457026	448385
<i>Sphingomonas paucimobilis</i>	1	124271054	13689
<i>Sphingomonas wittichii</i> RW1	2	148553127,148553717	392499
<i>Staphylococcus aureus</i> subsp. <i>aureus</i> MSSA476	1	49484950	282459
<i>Staphylococcus epidermidis</i> RP62A	1	57865917	176279
<i>Staphylococcus hominis</i>	1	18148891	1290
<i>Stigmatella aurantiaca</i> DW4/3-1	2	115373543,115377374	378806
<i>Streptococcus infantarius</i> subsp. <i>infantarius</i> ATCC BAA-102	1	171779053	471872
<i>Streptococcus thermophilus</i>	1	46019823	1308
<i>Streptomyces avermitilis</i> MA-4680	4	29831850,29831852,29832255,29832256	227882
<i>Streptomyces coelicolor</i> A3(2)	10	21218854,21221060,21223014,21223642,21223646,21223984,21223993,21224291,21224333,32141178	100226
<i>Streptomyces griseus</i> subsp. <i>griseus</i> NBRC 13350	4	182435847,182438868,182439560,182439561	455632
<i>Sulfurovum</i> sp. <i>NBC37-1</i>	7	152993685,152993686,152993687,152993688,152993690,152993691,152993693	387093
<i>Synechococcus</i> sp. <i>JA-2-3B'a(2-13)</i>	1	86609036	321332
<i>Synechococcus</i> sp. <i>JA-3-3Ab</i>	1	86606719	321327
<i>Synechococcus</i> sp. <i>WH 5701</i>	3	87302369,87302373,87302395	69042
<i>Synechocystis</i> sp. <i>PCC 6803</i>	1	16332137	1148
<i>Syntrophobacter fumaroxidans</i> MPOB	1	116748530	335543
<i>Syntrophomonas wolfei</i> subsp. <i>wolfei</i> str. <i>Goettingen</i>	1	114567777	335541
<i>Syntrophus aciditrophicus</i> SB	2	85858750,85859890	56780
<i>Thaueria</i> sp. <i>MZ1T</i>	4	169181897,169181955,169182364,169184392	85643
<i>Thermobifida fusca</i> YX	1	72161132	269800
<i>Thermosynechococcus elongatus</i> BP-1	1	22299003	197221

<i>Thiomicrospira crunogena</i> XCL-2	1	78484711	317025
<i>Treponema denticola</i> ATCC 35405	2	42527126,42527322	243275
<i>Trichodesmium erythraeum</i> IMS101	1	113477673	203124
uncultured bacterium	1	119029680	77133
<i>Verrucomicrobium spinosum</i> DSM 4136	2	171915047,171915063	240016
<i>Vibrio angustum</i> S14	1	90580561	314292
<i>Vibrio cholerae</i> 623-39	1	153829970	417397
<i>Vibrio cholerae</i> MZO-2	1	153824424	417398
<i>Vibrio parahaemolyticus</i> RIMD 2210633	1	28898586	223926
<i>Vibrio</i> sp. Ex25	1	116186391	150340
<i>Vibrio</i> sp. MED222	1	86148091	314290
<i>Vibrio vulnificus</i> YJ016	1	37680110	196600
<i>Xanthobacter autotrophicus</i> Py2	1	154243756	78245
<i>Xanthomonas axonopodis</i> pv. <i>citri</i> str. 306	1	21244022	190486
<i>Xanthomonas campestris</i> pv. <i>campestris</i> str. 8004	1	66571812	314565
<i>Yersinia pestis</i> KIM	1	22126310	187410
<i>Yersinia pseudotuberculosis</i>	1	49658892	633
<i>Yersinia pseudotuberculosis</i> IP 31758	2	153947653,153948345	349747
<i>Yersinia pseudotuberculosis</i> YPIII	2	170024518,170025361	502800
<i>Zymomonas mobilis</i> subsp. <i>mobilis</i> ZM4	1	56552485	264203

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Members of the normal human gut microbiota are labeled in red.