Moorella thermoacetica YP_429679
Clostridium tetani NP_782005
Clostridium perfringens NP_562715
Sulfolobus solfataricus NP_342957
Pyrobaculum aerophilum NP_560142
Pyrococcus horikoshii NP_143295
Pyrococcus furiosus NP_579151
Bacillus halodurans NP_241645
Candidatus Protochlamydia YP_007150
Chlamydia muridarum NP_297219
Chlamydia trachomatis YP_328380
Chlamydia trachomatis NP_220072
Chlamydophila felis YP_514998
Chlamydophila abortus YP_220287
Chlamydophila caviae NP_829794
Chlamydophila pneumoniae NP_877134
Chlamydophila pneumoniae NP_300890
Chlamydophila pneumoniae NP_225028
Chlamydophila pneumoniae NP_445574
Firmicutes
Archaea
Archaea
Archaea
Firmicutes
PVC group (Chlamydiales-Verrucomicrobia-Planctomycetales)
Gid/GidA-related
Thermus thermophilus YP_005503
Thermus thermophilus YP_145163
Deinococcus geothermalis YP_605554
Deinococcus radiodurans NP_295404
Deinococci
<= CRISTALLISED
Gid/GidA-related
Lactobacillus sakei YP_395598
Lactobacillus salivarius YP_535614
Lactobacillus plantarum NP_785399
Lactobacillus sakei YP_395599
Lactobacillus delbrueckii YP_619139
Lactobacillus acidophilus YP_193864
Lactobacillus johnsonii NP_964965
Enterococcus faecalis NP_815357
Lactococcus lactis NP_267387
Streptococcus pneumoniae NP_345426
Streptococcus pneumoniae NP_358438
Streptococcus agalactiae NP_735404
Streptococcus agalactiae YP_329685
Streptococcus agalactiae NP_687981
Streptococcus thermophilus YP_139385
Streptococcus thermophilus YP_141304
Streptococcus mutans NP_721398
Streptococcus pyogenes YP_282256
Streptococcus pyogenes NP_269319
Streptococcus pyogenes YP_602536
Streptococcus pyogenes YP_060200
Streptococcus pyogenes YP_598616
Streptococcus pyogenes YP_596741
Streptococcus pyogenes YP_600562
Streptococcus pyogenes YP_280334
Streptococcus pyogenes NP_607247
Streptococcus pyogenes NP_802284
Streptococcus pyogenes NP_664625
Mesoplasma florum YP_053774
Mycoplasma capricolum YP_424581
Mycoplasma mycoides NP_975368
Mesoplasma florum YP_053483
Mycoplasma mycoides NP_975480
Mycoplasma capricolum YP_424450
Bacillus clausii YP_175773
Bacillus halodurans NP_243332
Bacillus subtilis NP_389495
Bacillus licheniformis YP_091421
Bacillus licheniformis YP_079006
Bacillus cereus NP_833551
Bacillus cereus NP_980171
Bacillus thuringiensis YP_037893
Bacillus cereus YP_085173
Bacillus anthracis YP_029934
Bacillus anthracis YP_020609
Bacillus anthracis NP_846213
Listeria innocua NP_470651
Listeria monocytogenes NP_464801
Listeria monocytogenes YP_013892
Staphylococcus saprophyticus YP_301607
Staphylococcus epidermidis YP_188399
Staphylococcus epidermidis NP_764482
Staphylococcus haemolyticus YP_253578
Staphylococcus aureus YP_040638
Staphylococcus aureus YP_499759
Staphylococcus aureus YP_493841
Staphylococcus aureus YP_416593
Staphylococcus aureus NP_371775
Staphylococcus aureus YP_186126
Staphylococcus aureus YP_043311
Staphylococcus aureus NP_374367
Staphylococcus aureus NP_645951
Firmicutes
Moorella thermoacetica YP_429884
Rubrobacter xylanophilus YP_645070
Symbiobacterium thermophilum YP_075311
Desulfitobacterium hafniense YP_518786
Actinobacteria
Firmicutes
Firmicutes
Deinococcus geothermalis YP_603955
Deinococcus radiodurans NP_293933
Thermus thermophilus YP_005046
Thermus thermophilus YP_144708
Deinococci
<= TRUE Gid(TrmFO)
Prochlorococcus marinus NP_894880
Synechococcus sp YP_377433
Synechococcus sp NP_896992
Synechococcus sp YP_381990
Prochlorococcus marinus YP_291829
Prochlorococcus marinus NP_874978
Prochlorococcus marinus YP_397622
Prochlorococcus marinus NP_893233
Thermosynechococcus elongatus NP_681240
Gloeobacter violaceus NP_926549
Synechococcus sp YP_476315
Synechococcus sp YP_476060
Synechocystis sp NP_442151
Synechococcus elongatus YP_400332
Synechococcus elongatus YP_170948
Anabaena variabilis YP_322992
Nostoc sp NP_488611
Cyanobacteria
Carboxydothermus hydrogenoformans YP_36
Fusobacterium nucleatum NP_603967
Thermotoga maritima NP_228543
Aquifex aeolicus NP_213473
Syntrophus aciditrophicus YP_461418
Acidobacteria bacterium YP_593703
Pelobacter carbinolicus YP_355835
Geobacter metallireducens YP_383860
Geobacter sulfurreducens NP_953593
Desulfotalea psychrophila YP_065705
Anaeromyxobacter dehalogenans YP_465904
Myxococcus xanthus YP_631216
Lawsonia intracellularis YP_595223
Desulfovibrio desulfuricans YP_387916
Desulfovibrio vulgaris YP_011563
Bdellovibrio bacteriovorus NP_970158
Jannaschia sp YP_510440
Silicibacter sp YP_613386
Silicibacter pomeroyi YP_166925
Rhodobacter sphaeroides YP_352686
Zymomonas mobilis YP_162426
Sphingopyxis alaskensis YP_616208
Novosphingobium aromaticivorans YP_4971
Erythrobacter litoralis YP_458160
Magnetospirillum magneticum YP_421845
Rhodospirillum rubrum YP_426844
Rhodopseudomonas palustris YP_532639
Rhodopseudomonas palustris NP_948170
Rhodopseudomonas palustris YP_569902
Rhodopseudomonas palustris YP_486341
Bradyrhizobium japonicum NP_771367
Nitrobacter winogradskyi YP_318377
Nitrobacter hamburgensis YP_577078
Caulobacter crescentus NP_421399
Bartonella henselae YP_033425
Sinorhizobium meliloti NP_385649
Rhizobium etli YP_469356
Agrobacterium tumefaciens NP_532353
Agrobacterium tumefaciens NP_354655
Mesorhizobium loti NP_102736
Brucella melitensis YP_414338
Brucella abortus YP_221632
Brucella suis NP_697907
Brucella melitensis NP_539990
Firmicutes
Fusobacteria
Thermotoga
Aquificales
delta-Proteobacteria
delta-Proteobacteria
delta-Proteobacteria
alpha-Proteobacteria
Gid(TrmFO)
Fusobacterium nucleatum NP_602921
Fusobacterium nucleatum NP_602539
Symbiobacterium thermophilum YP_077160
Desulfitobacterium hafniense YP_521287
Moorella thermoacetica YP_431343
Carboxydothermus hydrogenoformans YP_35
Thermoanaerobacter tengcongensis NP_624
Thermoanaerobacter tengcongensis NP_622
Clostridium perfringens NP_563570
Clostridium tetani NP_780814
Clostridium acetobutylicum NP_350313
Mesoplasma florum YP_053911
Mycoplasma capricolum YP_424798
Mycoplasma mycoides NP_976004
Mycoplasma mycoides NP_975981
Aster yellows YP_456649
Onion yellows NP_950520
Mycoplasma penetrans NP_757554
Ureaplasma parvum NP_077869
Mycoplasma gallisepticum NP_853425
Mycoplasma genitalium NP_073051
Mycoplasma pneumoniae NP_110246
Mycoplasma mobile YP_015851
Mycoplasma pulmonis NP_326084
Mycoplasma synoviae YP_278634
Mycoplasma hyopneumoniae YP_115518
Mycoplasma hyopneumoniae YP_278808
Mycoplasma hyopneumoniae YP_287403
Enterococcus faecalis NP_816906
Lactobacillus plantarum NP_786868
Lactobacillus salivarius YP_535024
Lactobacillus sakei YP_396490
Lactobacillus delbrueckii YP_619795
Lactobacillus acidophilus YP_194799
Lactobacillus johnsonii NP_965832
Lactococcus lactis NP_268004
Streptococcus pneumoniae NP_357718
Streptococcus pneumoniae NP_344666
Streptococcus thermophilus YP_140411
Streptococcus thermophilus YP_142327
Streptococcus agalactiae YP_330690
Streptococcus agalactiae NP_689127
Streptococcus agalactiae NP_736531
Streptococcus mutans NP_722426
Streptococcus pyogenes NP_665642
Streptococcus pyogenes YP_061174
Streptococcus pyogenes NP_803096
Streptococcus pyogenes NP_608155
Streptococcus pyogenes NP_270094
Streptococcus pyogenes YP_599566
Streptococcus pyogenes YP_283201
Streptococcus pyogenes YP_281335
Streptococcus pyogenes YP_603448
Streptococcus pyogenes YP_597580
Streptococcus pyogenes YP_601465
Oceanobacillus iheyensis NP_694412
Geobacillus kaustophilus YP_149346
Staphylococcus saprophyticus YP_302533
Staphylococcus haemolyticus YP_254590
Staphylococcus epidermidis YP_187604
Staphylococcus epidermidis NP_765971
Staphylococcus aureus NP_373235
Staphylococcus aureus YP_044709
Staphylococcus aureus YP_042130
Staphylococcus aureus NP_647446
Staphylococcus aureus NP_375829
Staphylococcus aureus YP_418030
Staphylococcus aureus YP_187523
Staphylococcus aureus YP_495279
Staphylococcus aureus YP_501497
Bacillus cereus NP_835138
Bacillus cereus YP_086748
Bacillus cereus NP_981926
Bacillus thuringiensis YP_039473
Bacillus anthracis YP_031573
Bacillus anthracis YP_022418
Bacillus anthracis NP_847878
Listeria monocytogenes YP_015388
Listeria innocua NP_472269
Listeria monocytogenes NP_466332
Bacillus clausii YP_177607
Bacillus halodurans NP_244929
Bacillus subtilis NP_391981
Bacillus licheniformis YP_093875
Bacillus licheniformis YP_081438
Firmicutes
Thermotoga maritima NP_228076
Deinococcus geothermalis YP_605798
Deinococcus radiodurans NP_293753
Thermus thermophilus YP_005576
Thermus thermophilus YP_145238
Deinococci
<= GidA
Prochlorococcus marinus YP_292467
Prochlorococcus marinus NP_876227
Prochlorococcus marinus YP_398264
Prochlorococcus marinus NP_893792
Prochlorococcus marinus NP_896001
Synechococcus sp YP_378198
Synechococcus sp YP_382828
Synechococcus sp NP_898471
Synechococcus sp YP_479008
Synechococcus sp YP_473781
Gloeobacter violaceus NP_923827
Thermosynechococcus elongatus NP_681325
Nostoc sp NP_487601
Anabaena variabilis YP_324041
Synechocystis sp NP_442153
Synechococcus elongatus YP_172393
Synechococcus elongatus YP_401440
Cyanobacteria
Syntrophus aciditrophicus YP_463077
Acidobacteria bacterium YP_589159
Pelobacter carbinolicus YP_358546
Geobacter metallireducens YP_386489
Geobacter sulfurreducens NP_954504
d-Proteobacteria
d-Proteobacteria
Candidatus Protochlamydia YP_008838
Chlamydia muridarum NP_297158
Chlamydia trachomatis YP_328321
Chlamydia trachomatis NP_220013
Chlamydophila felis YP_515800
Chlamydophila abortus YP_219552
Chlamydophila caviae NP_828997
Chlamydophila pneumoniae NP_876915
Chlamydophila pneumoniae NP_300673
Chlamydophila pneumoniae NP_224813
Chlamydophila pneumoniae NP_444682
PVC group (Planctomycetales - Verrucomicrobia - Chlamydiales)
Aquifex aeolicus NP_213523
Borrelia garinii YP_072627
Borrelia burgdorferi NP_212312
Treponema denticola NP_971438
Treponema pallidum NP_218484
Aquificales
Spirochetes
Rhodopirellula baltica NP_868785
Chlorobium tepidum NP_663154
Chlorobium chlorochromatii YP_380297
Pelodictyon luteolum YP_373941
Salinibacter ruber YP_444213
Porphyromonas gingivalis NP_906064
Bacteroides thetaiotaomicron NP_812180
Bacteroides fragilis YP_097383
Bacteroides fragilis YP_209853
Leptospira interrogans YP_003392
Leptospira interrogans NP_714539
PVC group (Planctomycetales - Verrucomicrobia - Chlamydiales)
Bacteroidetes
Bacteroidetes
Spirochetes
Desulfotalea psychrophila YP_064588
Bdellovibrio bacteriovorus NP_970609
Myxococcus xanthus YP_635597
Lawsonia intracellularis YP_595321
Desulfovibrio desulfuricans YP_388301
Desulfovibrio vulgaris YP_011046
delta-Proteobacteria
Wolinella succinogenes NP_907028
Thiomicrospira denitrificans YP_394432
Campylobacter jejuni NP_282335
Campylobacter jejuni YP_179309
Helicobacter hepaticus NP_859544
Helicobacter acinonychis YP_665226
Helicobacter pylori YP_626955
Helicobacter pylori NP_222920
Helicobacter pylori NP_207011
epsilon-Proteobacteria
Candidatus Pelagibacter YP_265776
Neorickettsia sennetsu YP_506583
Rickettsia typhi YP_067044
Rickettsia prowazekii NP_220450
Rickettsia bellii YP_538522
Rickettsia felis YP_246135
Rickettsia conorii NP_359721
Wolbachia endosymbiont YP_198441
Wolbachia endosymbiont NP_966735
Anaplasma marginale YP_154116
Anaplasma phagocytophilum YP_504843
Ehrlichia canis YP_303283
Ehrlichia chaffeensis YP_507179
Ehrlichia ruminantium YP_196594
Ehrlichia ruminantium YP_180510
Ehrlichia ruminantium YP_197553
Rhodospirillum rubrum YP_428706
Zymomonas mobilis YP_163716
Sphingopyxis alaskensis YP_617892
Erythrobacter litoralis YP_459500
Novosphingobium aromaticivorans YP_4954
Bartonella henselae YP_034358
Bartonella quintana YP_032870
Rhodobacter sphaeroides YP_354311
Silicibacter sp YP_614859
Silicibacter pomeroyi YP_165274
Jannaschia sp YP_508142
Caulobacter crescentus NP_422549
Gluconobacter oxydans YP_191490
Magnetospirillum magneticum YP_419365
Bradyrhizobium japonicum NP_767273
Nitrobacter hamburgensis YP_575466
Nitrobacter winogradskyi YP_316717
Rhodopseudomonas palustris YP_530184
Rhodopseudomonas palustris NP_945647
Rhodopseudomonas palustris YP_484013
Rhodopseudomonas palustris YP_567569
Rhizobium etli YP_471592
Sinorhizobium meliloti NP_387443
Agrobacterium tumefaciens NP_533496
Agrobacterium tumefaciens NP_355757
Mesorhizobium loti NP_105343
Brucella abortus YP_222698
Brucella melitensis YP_415390
Brucella melitensis NP_538925
Brucella suis NP_699036
alpha-Proteobacteria
GidA
Baumannia cicadellinicola YP_588617
Candidatus Blochmannia YP_277523
Candidatus Blochmannia NP_878316
Wigglesworthia glossinidia NP_871004
Buchnera aphidicola NP_777640
Buchnera aphidicola NP_239843
Buchnera aphidicola NP_660362
Francisella tularensis YP_170164
Francisella tularensis YP_513488
Idiomarina loihiensis YP_157011
Pseudoalteromonas haloplanktis YP_34149
Pseudoalteromonas atlantica YP_663859
Colwellia psychrerythraea YP_271685
Shewanella denitrificans YP_564759
Shewanella oneidensis NP_720274
Saccharophagus degradans YP_529479
Chromohalobacter salexigens YP_575338
Hahella chejuensis YP_438120
Acinetobacter sp YP_047035
Psychrobacter arcticus YP_264524
Psychrobacter cryohalolentis YP_580417
Pseudomonas aeruginosa NP_254252
Pseudomonas fluorescens YP_351465
Pseudomonas fluorescens YP_263284
Pseudomonas entomophila YP_610943
Pseudomonas putida NP_742174
Pseudomonas syringae NP_795328
Pseudomonas syringae YP_277291
Pseudomonas syringae YP_238197
Legionella pneumophila YP_128129
Legionella pneumophila YP_096883
Legionella pneumophila YP_125250
Nitrosomonas europaea NP_842467
Nitrosospira multiformis YP_413449
Dechloromonas aromatica YP_287299
Azoarcus sp YP_158668
Thiobacillus denitrificans YP_316566
Methylobacillus flagellatus YP_546859
Bordetella pertussis NP_878920
Bordetella parapertussis NP_882367
Bordetella bronchiseptica NP_886554
Polaromonas sp YP_546938
Rhodoferax ferrireducens YP_521342
Ralstonia solanacearum NP_521447
Chromobacterium violaceum NP_900331
Neisseria meningitidis NP_273251
Neisseria gonorrhoeae YP_208819
Neisseria meningitidis NP_282925
Burkholderia xenovorans YP_560951
Ralstonia metallidurans YP_585647
Ralstonia eutropha YP_297559
Burkholderia cenocepacia YP_622831
Burkholderia sp YP_367521
Burkholderia thailandensis YP_443812
Burkholderia pseudomallei YP_331606
Burkholderia pseudomallei YP_110001
Burkholderia mallei YP_104449
Coxiella burnetii NP_820901
Nitrosococcus oceani YP_345056
Methylococcus capsulatus YP_112542
Xylella fastidiosa NP_299385
Xylella fastidiosa NP_778992
Xanthomonas campestris YP_241494
Xanthomonas campestris NP_635772
Xanthomonas oryzae YP_449236
Xanthomonas oryzae YP_198866
Xanthomonas campestris YP_362122
Xanthomonas axonopodis NP_640733
Photobacterium profundum YP_131673
Vibrio fischeri YP_205958
Vibrio cholerae NP_232401
Vibrio parahaemolyticus NP_799459
Vibrio vulnificus NP_936055
Vibrio vulnificus NP_759971
Thiomicrospira crunogena YP_392439
Haemophilus ducreyi NP_872636
Pasteurella multocida NP_246424
Mannheimia succiniciproducens YP_089546
Haemophilus influenzae YP_248318
Haemophilus influenzae NP_438740
Photorhabdus luminescens NP_927425
Yersinia pestis NP_407551
Yersinia pestis NP_671435
Yersinia pestis NP_995299
Yersinia pseudotuberculosis YP_072451
Yersinia pestis YP_654081
Yersinia pestis YP_649914
Sodalis glossinidius YP_456085
Erwinia carotovora YP_052604
Salmonella enterica NP_807282
Salmonella enterica NP_458069
Salmonella enterica YP_152817
Salmonella typhimurium NP_462773
Salmonella enterica YP_218774
Escherichia coli NP_290380
Escherichia coli NP_312710
Shigella dysenteriae YP_405416
Escherichia coli NP_418197
Escherichia coli YP_543254
Shigella sonnei YP_312652
Shigella boydii YP_410046
Escherichia coli NP_756527
Shigella flexneri NP_839125
Shigella flexneri NP_709554
Beta-Gamma-Proteobacteria
(458 sequences, 217 positions)
(This tree was drawn with treedyn)
3.