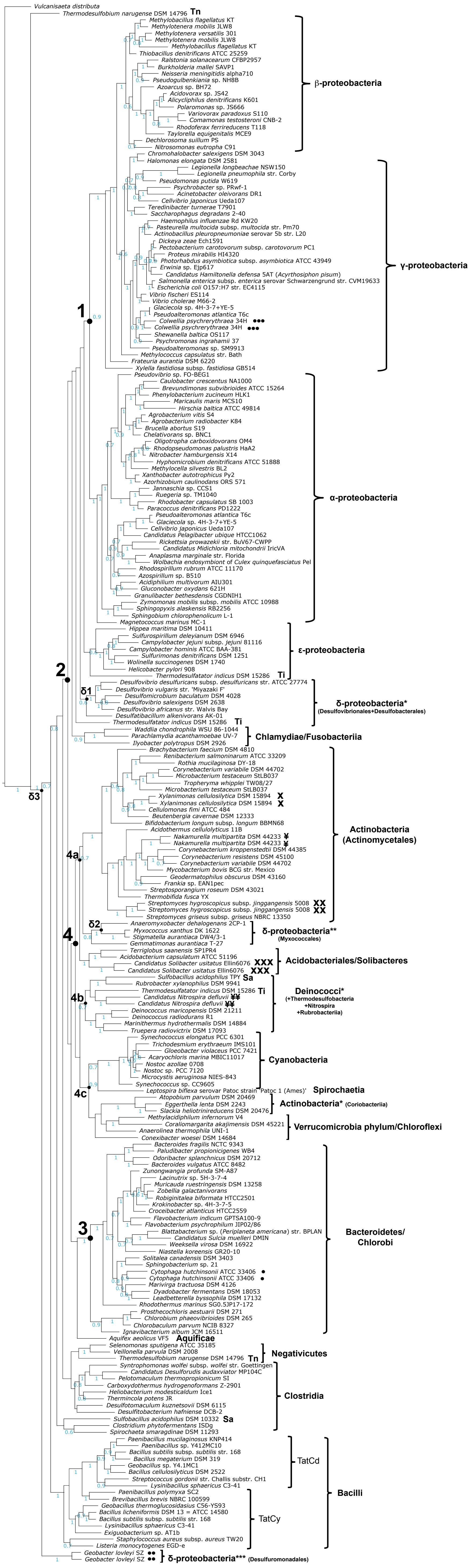
Vulcanisaeta distributa
Thermodesulfobium narugense DSM 14796 Tn
Methylobacillus flagellatus KT
Methylotenera mobilis JLW8
Methylotenera versatilis 301
Methylotenera mobilis JLW8
Methylobacillus flagellatus KT
Thiobacillus denitrificans ATCC 25259
Ralstonia solanacearum CFBP2957
Burkholderia mallei SAVP1
Neisseria meningitidis alpha710
Pseudogulbenkiania sp. NH8B
Azoarcus sp. BH72
Acidovorax sp. JS42
Alicycliphilus denitrificans K601
Polaromonas sp. JS666
Variovorax paradoxus S110
Comamonas testosteroni CNB-2
Rhodoferax ferrireducens T118
Taylorella equigenitalis MCE9
Dechlorosoma suillum PS
Nitrosomonas eutropha C91
β-proteobacteria
Chromohalobacter salexigens DSM 3043
Halomonas elongata DSM 2581
Legionella longbeachae NSW150
Legionella pneumophila str. Corby
Pseudomonas putida W619
Psychrobacter sp. PRwf-1
Acinetobacter oleivorans DR1
Cellvibrio japonicus Ueda107
Teredinibacter turnerae T7901
Saccharophagus degradans 2-40
Haemophilus influenzae Rd KW20
Pasteurella multocida subsp. multocida str. Pm70
Actinobacillus pleuropneumoniae serovar 5b str. L20
Dickeya zeae Ech1591
Pectobacterium carotovorum subsp. carotovorum PC1
Proteus mirabilis HI4320
Photorhabdus asymbiotica subsp. asymbiotica ATCC 43949
Erwinia sp. Ejp617
Candidatus Hamiltonella defensa 5AT (Acyrthosiphon pisum)
Salmonella enterica subsp. enterica serovar Schwarzengrund str. CVM19633
Escherichia coli O157:H7 str. EC4115
Vibrio fischeri ES114
Vibrio cholerae M66-2
Glaciecola sp. 4H-3-7+YE-5
Pseudoalteromonas atlantica T6c
Colwellia psychrerythraea 34H ●●●
Colwellia psychrerythraea 34H ●●●
Shewanella baltica OS117
Psychromonas ingrahamii 37
Pseudoalteromonas sp. SM9913
Methylococcus capsulatus str. Bath
Frateuria aurantia DSM 6220
Xylella fastidiosa subsp. fastidiosa GB514
γ-proteobacteria
1
Pseudovibrio sp. FO-BEG1
Caulobacter crescentus NA1000
Brevundimonas subvibrioides ATCC 15264
Phenylobacterium zucineum HLK1
Maricaulis maris MCS10
Hirschia baltica ATCC 49814
Agrobacterium vitis S4
Agrobacterium radiobacter K84
Brucella abortus S19
Chelativorans sp. BNC1
Oligotropha carboxidovorans OM4
Rhodopseudomonas palustris HaA2
Nitrobacter hamburgensis X14
Hyphomicrobium denitrificans ATCC 51888
Methylocella silvestris BL2
Xanthobacter autotrophicus Py2
Azorhizobium caulinodans ORS 571
Jannaschia sp. CCS1
Ruegeria sp. TM1040
Rhodobacter capsulatus SB 1003
Paracoccus denitrificans PD1222
Pseudoalteromonas atlantica T6c
Glaciecola sp. 4H-3-7+YE-5
Cellvibrio japonicus Ueda107
Candidatus Pelagibacter ubique HTCC1062
Rickettsia prowazekii str. BuV67-CWPP
Candidatus Midichloria mitochondrii IricVA
Anaplasma marginale str. Florida
Wolbachia endosymbiont of Culex quinquefasciatus Pel
Rhodospirillum rubrum ATCC 11170
Azospirillum sp. B510
Acidiphilium multivorum AIU301
Gluconobacter oxydans 621H
Granulibacter bethesdensis CGDNIH1
Zymomonas mobilis subsp. mobilis ATCC 10988
Sphingopyxis alaskensis RB2256
Sphingobium chlorophenolicum L-1
Magnetococcus marinus MC-1
α-proteobacteria
Hippea maritima DSM 10411
Sulfurospirillum deleyianum DSM 6946
Campylobacter jejuni subsp. jejuni 81116
Campylobacter hominis ATCC BAA-381
Sulfurimonas denitrificans DSM 1251
Wolinella succinogenes DSM 1740
Helicobacter pylori 908
Thermodesulfatator indicus DSM 15286 Ti
ε-proteobacteria
2
Desulfovibrio desulfuricans subsp. desulfuricans str. ATCC 27774
Desulfovibrio vulgaris str. 'Miyazaki F'
δ1
Desulfomicrobium baculatum DSM 4028
Desulfovibrio salexigens DSM 2638
Desulfovibrio africanus str. Walvis Bay
Desulfatibacillum alkenivorans AK-01
Thermodesulfatator indicus DSM 15286 Ti
δ-proteobacteria*
(Desulfovibrionales+Desulfobacterales)
Waddlia chondrophila WSU 86-1044
Parachlamydia acanthamoebae UV-7
Ilyobacter polytropus DSM 2926
Chlamydiae/Fusobacteriia
δ3
Brachybacterium faecium DSM 4810
Renibacterium salmoninarum ATCC 33209
Rothia mucilaginosa DY-18
Corynebacterium variabile DSM 44702
Microbacterium testaceum StLB037
Tropheryma whipplei TW08/27
Microbacterium testaceum StLB037
Xylanimonas cellulosilytica DSM 15894 X
Xylanimonas cellulosilytica DSM 15894 X
Cellulomonas fimi ATCC 484
Beutenbergia cavernae DSM 12333
Bifidobacterium longum subsp. longum BBMN68
Acidothermus cellulolyticus 11B
Nakamurella multipartita DSM 44233 ¥
Nakamurella multipartita DSM 44233 ¥
Corynebacterium kroppenstedtii DSM 44385
Corynebacterium resistens DSM 45100
Corynebacterium variabile DSM 44702
Mycobacterium bovis BCG str. Mexico
Geodermatophilus obscurus DSM 43160
Frankia sp. EAN1pec
Streptosporangium roseum DSM 43021
Thermobifida fusca YX
Streptomyces hygroscopicus subsp. jinggangensis 5008 XX
Streptomyces hygroscopicus subsp. jinggangensis 5008 XX
Streptomyces griseus subsp. griseus NBRC 13350
Actinobacteria
(Actinomycetales)
4a
δ2
Anaeromyxobacter dehalogenans 2CP-1
Myxococcus xanthus DK 1622
Stigmatella aurantiaca DW4/3-1
Gemmatimonas aurantiaca T-27
δ-proteobacteria**
(Myxococcales)
4
Terriglobus saanensis SP1PR4
Acidobacterium capsulatum ATCC 51196
Candidatus Solibacter usitatus Ellin6076 XXX
Candidatus Solibacter usitatus Ellin6076 XXX
Acidobacteriales/Solibacteres
Sulfobacillus acidophilus TPY Sa
Rubrobacter xylanophilus DSM 9941
Thermodesulfatator indicus DSM 15286 Ti
Candidatus Nitrospira defluvii ¥¥
Candidatus Nitrospira defluvii ¥¥
4b
Deinococcus maricopensis DSM 21211
Deinococcus radiodurans R1
Marinithermus hydrothermalis DSM 14884
Truepera radiovictrix DSM 17093
Deinococci*
(+Thermodesulfobacteria
+Nitrospira
+Rubrobacteriia)
Synechococcus elongatus PCC 6301
Trichodesmium erythraeum IMS101
Gloeobacter violaceus PCC 7421
Acaryochloris marina MBIC11017
Nostoc azollae 0708
Nostoc sp. PCC 7120
Microcystis aeruginosa NIES-843
Synechococcus sp. CC9605
Cyanobacteria
4c
Leptospira biflexa serovar Patoc strain 'Patoc 1 (Ames)' Spirochaetia
Atopobium parvulum DSM 20469
Eggerthella lenta DSM 2243
Slackia heliotrinireducens DSM 20476
Actinobacteria* (Coriobacteriia)
Methylacidiphilum infernorum V4
Coraliomargarita akajimensis DSM 45221
Anaerolinea thermophila UNI-1
Conexibacter woesei DSM 14684
Verrucomicrobia phylum/Chloroflexi
Bacteroides fragilis NCTC 9343
Paludibacter propionicigenes WB4
Odoribacter splanchnicus DSM 20712
Bacteroides vulgatus ATCC 8482
Zunongwangia profunda SM-A87
Lacinutrix sp. 5H-3-7-4
Muricauda ruestringensis DSM 13258
Zobellia galactanivorans
Robiginitalea biformata HTCC2501
Krokinobacter sp. 4H-3-7-5
Croceibacter atlanticus HTCC2559
Flavobacterium indicum GPTSA100-9
Flavobacterium psychrophilum JIP02/86
3
Blattabacterium sp. (Periplaneta americana) str. BPLAN
Candidatus Sulcia muelleri DMIN
Weeksella virosa DSM 16922
Niastella koreensis GR20-10
Solitalea canadensis DSM 3403
Sphingobacterium sp. 21
Cytophaga hutchinsonii ATCC 33406 ●
Cytophaga hutchinsonii ATCC 33406 ●
Marivirga tractuosa DSM 4126
Dyadobacter fermentans DSM 18053
Leadbetterella byssophila DSM 17132
Rhodothermus marinus SG0.5JP17-172
Prosthecochloris aestuarii DSM 271
Chlorobium phaeovibrioides DSM 265
Chlorobaculum parvum NCIB 8327
Ignavibacterium album JCM 16511
Bacteroidetes/
Chlorobi
Aquifex aeolicus VF5 Aquificae
Selenomonas sputigena ATCC 35185
Veillonella parvula DSM 2008
Thermodesulfobium narugense DSM 14796 Tn
Negativicutes
Syntrophomonas wolfei subsp. wolfei str. Goettingen
Candidatus Desulforudis audaxviator MP104C
Pelotomaculum thermopropionicum SI
Carboxydothermus hydrogenoformans Z-2901
Heliobacterium modesticaldum Ice1
Thermincola potens JR
Desulfotomaculum kuznetsovii DSM 6115
Desulfitobacterium hafniense DCB-2
Clostridia
Sulfobacillus acidophilus DSM 10332 Sa
Clostridium phytofermentans ISDg
Spirochaeta smaragdinae DSM 11293
Paenibacillus mucilaginosus KNP414
Paenibacillus sp. Y412MC10
Bacillus subtilis subsp. subtilis str. 168
Bacillus megaterium DSM 319
Geobacillus sp. Y4.1MC1
Bacillus cellulosilyticus DSM 2522
Streptococcus gordonii str. Challis substr. CH1
Lysinibacillus sphaericus C3-41
TatCd
Paenibacillus polymyxa SC2
Brevibacillus brevis NBRC 100599
Geobacillus thermoglucosidasius C56-YS93
Bacillus licheniformis DSM 13 = ATCC 14580
Bacillus subtilis subsp. subtilis str. 168
Lysinibacillus sphaericus C3-41
Exiguobacterium sp. AT1b
Staphylococcus aureus subsp. aureus TW20
Listeria monocytogenes EGD-e
TatCy
Bacilli
Geobacter lovleyi SZ ●●
Geobacter lovleyi SZ ●●
δ-proteobacteria*** (Desulfuromonadales)