

The All-Species Living Tree (Release LTPs115):

March 2014

16S rRNA-based phylogenetic tree harboring all type strains of all species with validly published names up to June 2013.

Type species are highlighted in red. Incorrectly affiliated and ungrouped species are indicated by their valid family.

For suggestions please contact:

living-tree@arb-silva.de

For further information and downloads:

www.elsevier.de/syapm

www.arb-silva.de/projects/living-tree

www.arb-home.de

www.bacterio.net

References:

R. Munoz, P. Yarza, W. Ludwig, J. Euzéby, R. Amann, K.H. Schleifer, F.O. Glöckner, R. Rosselló-Móra. *Release LTPs104 of the All-Species Living Tree*. Syst. Appl. Microbiol. 34 (2011) 169-170.

<http://www.dx.doi.org/10.1016/j.syapm.2011.03.001>

P. Yarza, W. Ludwig, J. Euzéby, R. Amann, K.-H. Schleifer, F.O. Glöckner, R. Rosselló-Móra. *Update of the All-Species Living Tree Project based on 16S and 23S rRNA sequence analyses*. Syst. Appl. Microbiol. 33 (2010) 291-299.

<http://www.dx.doi.org/10.1016/j.syapm.2010.08.001>

P. Yarza, M. Richter, J. Peplies, J. Euzéby, R. Amann, K.-H. Schleifer, W. Ludwig, F.O. Glöckner, R. Rosselló-Móra. *The All-Species Living Tree Project: a 16S rRNA-based phylogenetic tree of all sequenced type strains*. Syst. Appl. Microbiol. 31 (2008) 241-250.

<http://www.dx.doi.org/10.1016/j.syapm.2008.07.001>

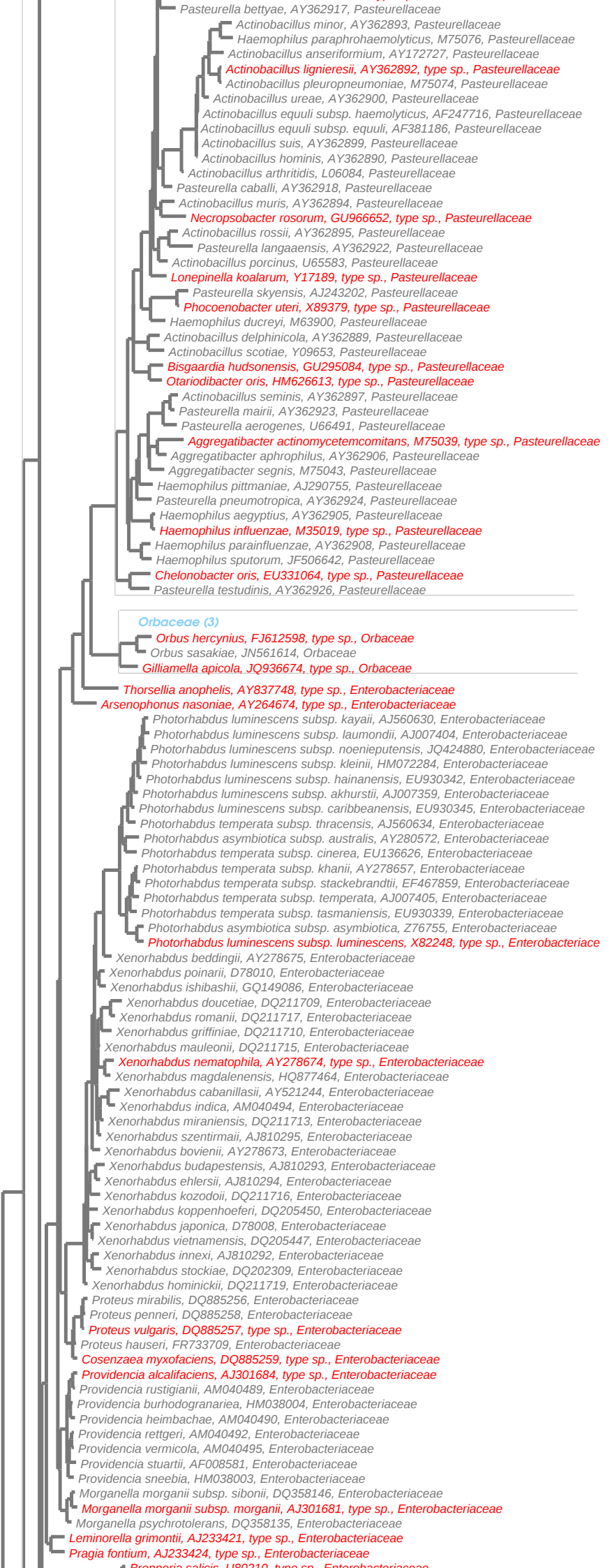
Enterobacteriaceae and Pasteurellaceae (326)

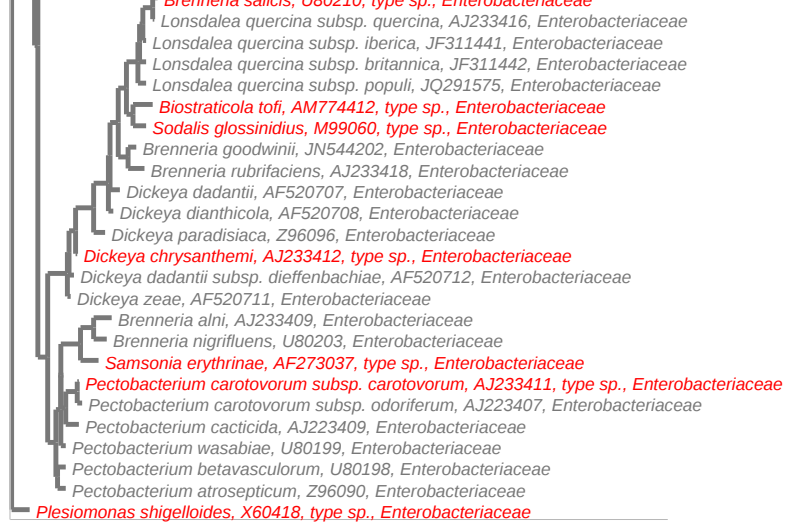
- Erwinia oleae, GU810925, Enterobacteriaceae
- Erwinia typographi, GU166291, Enterobacteriaceae
- Pantoea calida, GQ367478, Enterobacteriaceae
- Pantoea gaviniae, GQ367483, Enterobacteriaceae
- Erwinia toletana, FR870447, Enterobacteriaceae
- Pantoea cyripedii, AJ233413, Enterobacteriaceae
- Pantoea dispersa, DQ504305, Enterobacteriaceae
- Pantoea wallisii, JF295057, Enterobacteriaceae
- Erwinia aphidicola, FN547376, Enterobacteriaceae
- Erwinia persicina, Z96086, Enterobacteriaceae
- Erwinia rhapontici, AJ233417, Enterobacteriaceae
- Erwinia tasmaniensis, AM055716, Enterobacteriaceae
- Erwinia amylovora, AJ233410, type sp., Enterobacteriaceae
- Erwinia uzenensis, AB546198, Enterobacteriaceae
- Pantoea eucrina, EU216736, Enterobacteriaceae
- Erwinia mallotivora, AJ233414, Enterobacteriaceae
- Erwinia psidii, JQ809696, Enterobacteriaceae
- Erwinia tracheiphila, Y13250, Enterobacteriaceae
- Pantoea agglomerans, AJ233423, type sp., Enterobacteriaceae
- Pantoea vagans, EF688012, Enterobacteriaceae
- Pantoea eucalypti, EF688009, Enterobacteriaceae
- Pantoea anthophila, EF688010, Enterobacteriaceae
- Pantoea conspicua, EU216737, Enterobacteriaceae
- Pantoea deleyi, EF688011, Enterobacteriaceae
- Pantoea brenneri, EU216735, Enterobacteriaceae
- Pantoea ananatis, U80196, Enterobacteriaceae
- Pantoea allii, AY530795, Enterobacteriaceae
- Pantoea stewartii subsp. stewartii, U80208, Enterobacteriaceae
- Pantoea septica, EU216734, Enterobacteriaceae
- Enterobacter pyrinus, AJ010486, Enterobacteriaceae
- Enterobacter gergoviae, AB004748, Enterobacteriaceae
- Enterobacter hormaechei, AJ508302, Enterobacteriaceae
- Escherichia vulneris, AF530476, Enterobacteriaceae
- Enterobacter mori, EU721605, Enterobacteriaceae
- Enterobacter ludwigii, AJ853891, Enterobacteriaceae
- Enterobacter cancerogenus, Z96078, Enterobacteriaceae
- Enterobacter asburiae, AB004744, Enterobacteriaceae
- Enterobacter nimipressuralis, Z96077, Enterobacteriaceae
- Raoultella ornithinolytica, U78182, Enterobacteriaceae
- Raoultella planticola, AF129443, type sp., Enterobacteriaceae
- Enterobacter aerogenes, AB004750, Enterobacteriaceae
- Tatumella ptyseos, AJ233437, type sp., Enterobacteriaceae
- Tatumella terreus, EF688007, Enterobacteriaceae
- Tatumella punctata, FJ756351, Enterobacteriaceae
- Phaseolibacter flectens, AB021400, Enterobacteriaceae
- Tatumella morbirosei, EU344769, Enterobacteriaceae
- Tatumella citrea, DQ838096, Enterobacteriaceae
- Kluyvera ascorbata, AF008579, type sp., Enterobacteriaceae
- Kluyvera georgiana, AF047186, Enterobacteriaceae
- Kluyvera intermedia, AF310217, Enterobacteriaceae
- Kluyvera cryocrescens, AF310218, Enterobacteriaceae
- Klebsiella michiganensis, JQ070300, Enterobacteriaceae
- Klebsiella oxytoca, AF129440, Enterobacteriaceae
- Citrobacter werkmanii, AF025373, Enterobacteriaceae
- Citrobacter braakii, AF025368, Enterobacteriaceae
- Citrobacter murlinae, AF025369, Enterobacteriaceae
- Citrobacter freundii, AJ233408, type sp., Enterobacteriaceae
- Yokenella regensburgei, AB519796, type sp., Enterobacteriaceae
- Citrobacter gillenii, AF025367, Enterobacteriaceae
- Buttiauxella agrestis, AJ233400, type sp., Enterobacteriaceae
- Buttiauxella brennerae, AJ233401, Enterobacteriaceae
- Buttiauxella ferrugutiae, AJ233402, Enterobacteriaceae
- Buttiauxella gaviniae, AJ233403, Enterobacteriaceae
- Buttiauxella warmboldiae, AJ233406, Enterobacteriaceae
- Buttiauxella noackiae, AJ233405, Enterobacteriaceae
- Pantoea rodasii, JF295053, Enterobacteriaceae
- Pantoea rwardensis, JF295055, Enterobacteriaceae
- Buttiauxella izardii, AJ233404, Enterobacteriaceae
- Enterobacter amnigenus, AB004749, Enterobacteriaceae
- Enterobacter kobei, AJ508301, Enterobacteriaceae
- Raoultella terrigena, Y17658, Enterobacteriaceae
- Cronobacter dublinensis subsp. lactaridi, EF059838, Enterobacteriaceae
- Cronobacter dublinensis subsp. dublinensis, EF059892, Enterobacteriaceae
- Cronobacter dublinensis subsp. lausannensis, EF059841, Enterobacteriaceae
- Cronobacter muytjensii, EF059845, Enterobacteriaceae
- Cronobacter universalis, EF059877, Enterobacteriaceae
- Cronobacter turicensis, EF059891, Enterobacteriaceae
- Cronobacter malonaticus, EF059881, Enterobacteriaceae
- Cronobacter sakazakii, EF088379, type sp., Enterobacteriaceae
- Cronobacter condimenti, FN539031, Enterobacteriaceae
- Shimwellia blattae, FJ267520, Enterobacteriaceae
- Shimwellia pseudoproteus, FJ267523, type sp., Enterobacteriaceae
- Enterobacter oryzae, EF488759, Enterobacteriaceae
- Enterobacter radicincitans, AY563134, Enterobacteriaceae
- Enterobacter arachidis, EU672801, Enterobacteriaceae
- Enterobacter cowanii, AJ508303, Enterobacteriaceae
- Enterobacter pulveris, DQ273684, Enterobacteriaceae
- Escherichia albertii, AJ508775, Enterobacteriaceae
- Escherichia coli, X80725, type sp., Enterobacteriaceae
- Shigella flexneri, X96963, Enterobacteriaceae
- Escherichia fergusonii, AF530475, Enterobacteriaceae
- Shigella sonnei, FR870445, Enterobacteriaceae
- Shigella dysenteriae, X96966, type sp., Enterobacteriaceae
- Citrobacter koseri, HQ992945, Enterobacteriaceae
- Citrobacter youngae, AB273741, Enterobacteriaceae

Salmonella subterranea, AY373829, Enterobacteriaceae
Trabulsiella guamensis, AY373830, type sp., Enterobacteriaceae
Trabulsiella odontotermis, DQ453129, Enterobacteriaceae
Citrobacter amalonaticus, FR870441, Enterobacteriaceae
Citrobacter farmeri, AF025371, Enterobacteriaceae
Citrobacter rodentium, AF025363, Enterobacteriaceae
Citrobacter sedlakii, AF025364, Enterobacteriaceae
Salmonella enterica subsp. arizonae, AF008580, Enterobacteriaceae
Salmonella enterica subsp. houtenae, EU014684, Enterobacteriaceae
Salmonella enterica subsp. indica, EU014680, Enterobacteriaceae
Salmonella enterica subsp. salamae, EU014685, Enterobacteriaceae
Salmonella enterica subsp. diarizonae, EU014688, Enterobacteriaceae
Mangrovibacter plantisponsor, EF643377, type sp., Enterobacteriaceae
Salmonella bongori, AF029227, Enterobacteriaceae
Salmonella enterica subsp. enterica, AE006468, type sp., Enterobacteriaceae
Enterobacter cloacae subsp. dissolvens, Z96079, Enterobacteriaceae
Enterobacter cloacae subsp. cloacae, AJ251469, type sp., Enterobacteriaceae
Klebsiella singaporensis, AF250285, Enterobacteriaceae
Klebsiella variicola, AJ783916, Enterobacteriaceae
Klebsiella pneumoniae subsp. pneumoniae, X87276, type sp., Enterobacteriaceae
Klebsiella pneumoniae subsp. rhinoscleromatis, Y17657, Enterobacteriaceae
Klebsiella pneumoniae subsp. ozaenae, AF130982, Enterobacteriaceae
Serratia ureilytica, AJ854062, Enterobacteriaceae
Enterobacter soli, GU814270, Enterobacteriaceae
Cedecea davisae, AF493976, type sp., Enterobacteriaceae
Cedecea neteri, AB086230, Enterobacteriaceae
Edwardsiella ictaluri, AB050826, Enterobacteriaceae
Edwardsiella tarda, AB050827, type sp., Enterobacteriaceae
Edwardsiella hoshinae, AB050825, Enterobacteriaceae
Gibbsiella quercinecans, GU562337, type sp., Enterobacteriaceae
Gibbsiella dentisursi, AB566415, Enterobacteriaceae
Serratia rubidaea, AB004751, Enterobacteriaceae
Serratia marcescens subsp. sakuensis, AB061685, Enterobacteriaceae
Serratia nematodiphila, EU036987, Enterobacteriaceae
Serratia marcescens subsp. marcescens, AJ233431, type sp., Enterobacteriaceae
Serratia odorifera, AJ233432, Enterobacteriaceae
Serratia entomophila, AJ233427, Enterobacteriaceae
Serratia ficaria, AJ233428, Enterobacteriaceae
Budvicia aquatica, AJ233407, type sp., Enterobacteriaceae
Budvicia diplopodorum, HE574451, Enterobacteriaceae
Yersinia massiliensis, EF179119, Enterobacteriaceae
Yersinia bercovieri, AF366377, Enterobacteriaceae
Yersinia pestis, AF366383, type sp., Enterobacteriaceae
Yersinia pseudotuberculosis, AF366375, Enterobacteriaceae
Yersinia similis, AM182404, Enterobacteriaceae
Yersinia ruckeri, AF366385, Enterobacteriaceae
Yersinia aleksiciae, AJ627597, Enterobacteriaceae
Yersinia aldovae, AF366376, Enterobacteriaceae
Yersinia mollaretii, AF366382, Enterobacteriaceae
Yersinia pekkanenii, GQ451990, Enterobacteriaceae
Yersinia rohdei, AF366384, Enterobacteriaceae
Yersinia frederiksenii, AF366379, Enterobacteriaceae
Yersinia kristensenii, AF366381, Enterobacteriaceae
Yersinia intermedia, AF366380, Enterobacteriaceae
Yersinia nurmii, FJ717338, Enterobacteriaceae
Yersinia entomophaga, DQ400782, Enterobacteriaceae
Yersinia enterocolitica subsp. palearctica, FR729477, Enterobacteriaceae
Yersinia enterocolitica subsp. enterocolitica, AF366378, Enterobacteriaceae
Rahnella aquatilis, AJ233426, type sp., Enterobacteriaceae
Hafnia alvei, M59155, type sp., Enterobacteriaceae
Obesumbacterium proteus, AJ233422, type sp., Enterobacteriaceae
Hafnia paralvei, FM179943, Enterobacteriaceae
Serratia fonticola, AJ233429, Enterobacteriaceae
Serratia glossinae, FJ790328, Enterobacteriaceae
Serratia quinivorans, AJ233435, Enterobacteriaceae
Serratia proteamaculans, AJ233434, Enterobacteriaceae
Serratia grimesii, AJ233430, Enterobacteriaceae
Serratia liquefaciens, AJ306725, Enterobacteriaceae
Serratia plymuthica, AJ233433, Enterobacteriaceae
Serratia symbiotica, GU394001, Enterobacteriaceae

Pasteurellaceae (74)

Gallibacterium salpingitidis, L06078, Pasteurellaceae
Gallibacterium anatis, AF228001, type sp., Pasteurellaceae
Gallibacterium melopsittaci, EU423985, Pasteurellaceae
Gallibacterium trehalosifermentans, EU339199, Pasteurellaceae
Volucribacter amazonae, AY216869, Pasteurellaceae
Volucribacter psittacida, AY216868, type sp., Pasteurellaceae
Avibacterium gallinarum, AY362921, type sp., Pasteurellaceae
Avibacterium volantium, M75070, Pasteurellaceae
Avibacterium paragallinarum, AY498868, Pasteurellaceae
Avibacterium avium, M75058, Pasteurellaceae
Actinobacillus succinogenes, AF024525, Pasteurellaceae
Histophilus somni, AF549387, type sp., Pasteurellaceae
Haemophilus haemoglobinophilus, AY362907, Pasteurellaceae
Actinobacillus indolicus, AY362891, Pasteurellaceae
Haemophilus parasuis, AY362909, Pasteurellaceae
Actinobacillus capsulatus, AY362886, Pasteurellaceae
Haemophilus paracuniculus, M75061, Pasteurellaceae
Pasteurella canis, AY362919, Pasteurellaceae
Pasteurella oralis, M75052, Pasteurellaceae
Pasteurella dagmatis, AY362920, Pasteurellaceae
Pasteurella stomatis, AY362925, Pasteurellaceae
Pasteurella multocida subsp. gallicida, AF294412, Pasteurellaceae
Pasteurella multocida subsp. multocida, AF294410, type sp., Pasteurellaceae
Pasteurella multocida subsp. septica, AF294411, Pasteurellaceae
Haemophilus felis, AF224292, Pasteurellaceae
Nicoletella semolina, AY508816, type sp., Pasteurellaceae
Mannheimia caviae, HM439607, Pasteurellaceae
Mannheimia varigena, AF053893, Pasteurellaceae
Mannheimia granulomatis, AF053902, Pasteurellaceae
Mannheimia glucosida, AF053889, Pasteurellaceae
Mannheimia haemolytica, M75080, type sp., Pasteurellaceae
Mannheimia ruminalis, AF053900, Pasteurellaceae
Basfia succiniciproducens, FJ463881, type sp., Pasteurellaceae
Bibersteinia trehalosi, AY362927, type sp., Pasteurellaceae





Aeromonadaceae and Succinivibrionaceae (42)

- Aeromonas sanarellii*, FJ230076, Aeromonadaceae
- Aeromonas taiwanensis*, FJ230077, Aeromonadaceae
- Aeromonas enteropelogenes*, X71121, Aeromonadaceae
- Aeromonas punctata* subsp. *punctata*, X60408, Aeromonadaceae
- Aeromonas hydrophila* subsp. *dhakensis*, AJ508765, Aeromonadaceae
- Aeromonas aquariorum*, EU085557, Aeromonadaceae
- Aeromonas punctata* subsp. *caviae*, X74674, Aeromonadaceae
- Aeromonas hydrophila* subsp. *ranae*, AM262151, Aeromonadaceae
- Aeromonas media*, X60410, Aeromonadaceae
- Aeromonas hydrophila* subsp. *hydrophila*, DQ207728, type sp., Aeromonadaceae
- Aeromonas hydrophila* subsp. *anaerogenes*, FR870443, Aeromonadaceae

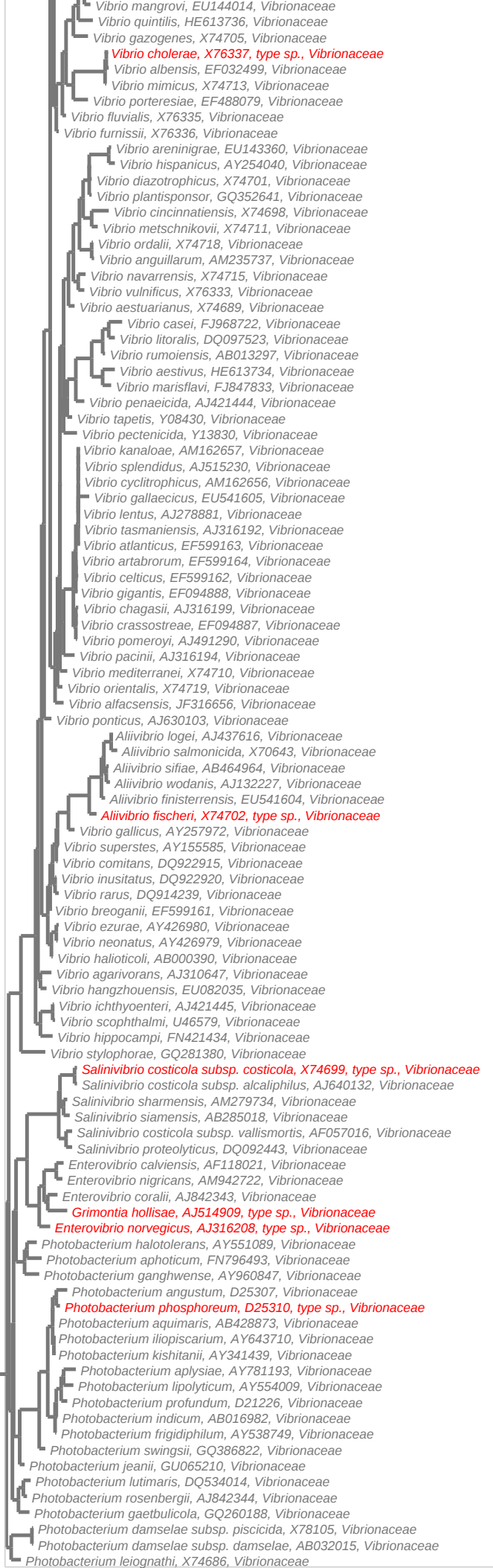
Succinivibrionaceae (6)

- Anaerobiospirillum succiniciproducens*, U96412, type sp., Succinivibrionaceae
- Succinivibrio dextrinosolvens*, Y17600, type sp., Succinivibrionaceae
- Anaerobiospirillum thomasi*, AJ420985, Succinivibrionaceae
- Succinatimonas hippei*, AB490810, type sp., Succinivibrionaceae
- Succinimonas amyolytica*, Y17599, type sp., Succinivibrionaceae
- Ruminobacter amylophilus*, Y15992, type sp., Succinivibrionaceae

- Tolumonas auensis*, X92889, type sp., Aeromonadaceae
- Tolumonas osonensis*, GU370947, Aeromonadaceae
- Aeromonas sharmiana*, DQ013306, Aeromonadaceae
- Aeromonas piscicola*, FM999971, Aeromonadaceae
- Aeromonas salmonicida* subsp. *smithia*, AJ009859, Aeromonadaceae
- Aeromonas salmonicida* subsp. *masoucida*, AB027542, Aeromonadaceae
- Aeromonas salmonicida* subsp. *achromogenes*, X60407, Aeromonadaceae
- Aeromonas bestiarum*, X60406, Aeromonadaceae
- Aeromonas salmonicida* subsp. *salmonicida*, AY987751, Aeromonadaceae
- Aeromonas salmonicida* subsp. *pectinolytica*, AF134065, Aeromonadaceae
- Aeromonas molluscorum*, AY532690, Aeromonadaceae
- Aeromonas rivuli*, FJ976900, Aeromonadaceae
- Aeromonas encheleia*, AJ224309, Aeromonadaceae
- Aeromonas popoffii*, AJ224308, Aeromonadaceae
- Aeromonas sobria*, X60412, Aeromonadaceae
- Aeromonas bivalvium*, DQ504429, Aeromonadaceae
- Aeromonas eucrenophila*, X60411, Aeromonadaceae
- Aeromonas tecta*, AJ458402, Aeromonadaceae
- Aeromonas veronii*, X60414, Aeromonadaceae
- Aeromonas ichthiosmia*, X71120, Aeromonadaceae
- Aeromonas fluvialis*, FJ230078, Aeromonadaceae
- Aeromonas jandaei*, X60413, Aeromonadaceae
- Aeromonas schubertii*, X60416, Aeromonadaceae
- Aeromonas diversa*, GQ365710, Aeromonadaceae
- Aeromonas simiae*, AJ536821, Aeromonadaceae

Vibrionaceae (131)

- Vibrio fortis*, AJ514916, Vibrionaceae
- Vibrio pelagius*, AJ293802, Vibrionaceae
- Vibrio mytili*, X99761, Vibrionaceae
- Vibrio diabolicus*, X99762, Vibrionaceae
- Vibrio azureus*, AB428897, Vibrionaceae
- Vibrio sagamiensis*, AB428909, Vibrionaceae
- Vibrio parahaemolyticus*, AF388386, Vibrionaceae
- Vibrio natriegens*, X74714, Vibrionaceae
- Vibrio communis*, GU078672, Vibrionaceae
- Vibrio owensii*, GU018180, Vibrionaceae
- Vibrio jasicida*, AB562589, Vibrionaceae
- Vibrio harveyi*, AY750575, Vibrionaceae
- Vibrio rotiferianus*, AJ316187, Vibrionaceae
- Vibrio alginolyticus*, X56576, Vibrionaceae
- Vibrio campbellii*, X56575, Vibrionaceae
- Vibrio atypicus*, FJ009624, Vibrionaceae
- Vibrio proteolyticus*, X74723, Vibrionaceae
- Vibrio xiamenensis*, GQ397859, Vibrionaceae
- Vibrio nereis*, X74716, Vibrionaceae
- Vibrio maritimus*, GU929925, Vibrionaceae
- Vibrio variabilis*, GU929924, Vibrionaceae
- Vibrio nigrapulchritudo*, X74717, Vibrionaceae
- Vibrio sinaloensis*, DQ451211, Vibrionaceae
- Vibrio brasiliensis*, AJ316172, Vibrionaceae
- Vibrio caribbeanicus*, GU223601, Vibrionaceae
- Vibrio coralliilyticus*, AJ440005, Vibrionaceae
- Vibrio neptunius*, AJ316171, Vibrionaceae
- Vibrio hepatarius*, AJ345063, Vibrionaceae
- Vibrio tubiashii*, X74725, Vibrionaceae
- Vibrio xuii*, AJ316181, Vibrionaceae
- Vibrio rhizosphaerae*, DQ847123, Vibrionaceae
- Vibrio ruber*, AF462458, Vibrionaceae



Oceanisphaera donghaensis, DQ190441, Aeromonadaceae
Oceanisphaera sediminis, HQ171441, Aeromonadaceae
Oceanisphaera arctica, FN377705, Aeromonadaceae
Oceanisphaera litoralis, AJ550470, type sp., Aeromonadaceae
Oceanisphaera ostreae, HQ340607, Aeromonadaceae
Gallaecimonas pentaromativorans, FM955224, type sp., Unclassified Gammaproteobacteria

Colwelliaceae (17)

Colwellia psychrotropica, U85846, Colwelliaceae
Colwellia rossensis, U14581, Colwelliaceae
Colwellia maris, AB002630, Colwelliaceae
Colwellia piezophila, AB094412, Colwelliaceae
Colwellia psychrethyraea, AB011364, type sp., Colwelliaceae
Colwellia aestuarii, DQ055844, Colwelliaceae
Colwellia chukchiensis, FJ889599, Colwelliaceae
Colwellia polaris, DQ007434, Colwelliaceae
Colwellia asteriadis, EU599214, Colwelliaceae
Colwellia demingiae, U85845, Colwelliaceae
Thalassomonas actinarum, AB369380, Colwelliaceae
Thalassomonas viridans, AJ294747, type sp., Colwelliaceae
Thalassomonas haliotis, AB369381, Colwelliaceae
Thalassomonas ganghwensis, AY194066, Colwelliaceae
Thalassomonas agarivorans, DQ212914, Colwelliaceae
Thalassomonas loyana, AY643537, Colwelliaceae
Thalassomonas agariperforans, HM237288, Colwelliaceae
Agarivorans albus, AB076561, type sp., Alteromonadaceae
Agarivorans gilvus, GQ200591, Alteromonadaceae
Aliagarivorans marinus, FJ167390, type sp., Alteromonadaceae
Aliagarivorans taiwanensis, FJ167391, Alteromonadaceae
Celerinatantimonas diazotrophica, DQ913890, type sp., Celerinatantimonadaceae

Idiomarinaceae (21)

Aliidiomarina taiwanensis, HQ537484, type sp., Idiomarinaceae
Idiomarina maris, EU723884, Idiomarinaceae
Idiomarina xiamenensis, GU471247, Idiomarinaceae
Idiomarina aestuarii, FJ768737, Idiomarinaceae
Idiomarina sediminum, EF212001, Idiomarinaceae
Idiomarina taiwanensis, DQ118948, Idiomarinaceae
Pseudidiomarina salinarum, EF486355, Idiomarinaceae
Idiomarina donghaiensis, EU600204, Idiomarinaceae
Idiomarina marina, EU423908, Idiomarinaceae
Idiomarina tainanensis, EU423907, Idiomarinaceae
Idiomarina maritima, EU600203, Idiomarinaceae
Pseudidiomarina homiensis, DQ342238, Idiomarinaceae
Idiomarina aquimaris, FJ906745, Idiomarinaceae
Idiomarina insulalsae, FM877003, Idiomarinaceae
Idiomarina baltica, AJ440214, Idiomarinaceae
Idiomarina fontislapidosi, AY526861, Idiomarinaceae
Idiomarina seosinensis, AY635468, Idiomarinaceae
Idiomarina zobellii, AF052741, Idiomarinaceae
Idiomarina loihiensis, AF288370, Idiomarinaceae
Idiomarina ramblicola, AY526862, Idiomarinaceae
Idiomarina abyssalis, AF052740, type sp., Idiomarinaceae

Psychromonadaceae (14)

Psychromonas agarivorans, AB374544, Psychromonadaceae
Psychromonas heitensis, AB365352, Psychromonadaceae
Psychromonas hadalis, AB094413, Psychromonadaceae
Psychromonas profunda, AJ416756, Psychromonadaceae
Psychromonas kaikoe, AB052160, Psychromonadaceae
Psychromonas marina, AB023378, Psychromonadaceae
Psychromonas arctica, AF374385, Psychromonadaceae
Psychromonas aquimarina, AB304805, Psychromonadaceae
Psychromonas macrocephali, AB304806, Psychromonadaceae
Psychromonas ossibalaenae, AB304808, Psychromonadaceae
Psychromonas japonica, AB304804, Psychromonadaceae
Psychromonas boydii, FJ822615, Psychromonadaceae
Psychromonas ingrahamii, U73721, Psychromonadaceae
Psychromonas antarctica, Y14697, type sp., Psychromonadaceae

Pseudoalteromonadaceae (38)

Pseudoalteromonas antarctica, X98336, Pseudoalteromonadaceae
Pseudoalteromonas translucida, AY040230, Pseudoalteromonadaceae
Pseudoalteromonas aliena, AY387858, Pseudoalteromonadaceae
Pseudoalteromonas marina, AY563031, Pseudoalteromonadaceae
Pseudoalteromonas undina, X82140, Pseudoalteromonadaceae
Pseudoalteromonas haloplanktis, X67024, type sp., Pseudoalteromonadaceae
Pseudoalteromonas nigrifaciens, X82146, Pseudoalteromonadaceae
Pseudoalteromonas arctica, DQ787199, Pseudoalteromonadaceae
Pseudoalteromonas elyakovii, AF082562, Pseudoalteromonadaceae
Pseudoalteromonas paragorgicola, AY040229, Pseudoalteromonadaceae
Pseudoalteromonas distincta, AF082564, Pseudoalteromonadaceae
Pseudoalteromonas agarivorans, AJ417594, Pseudoalteromonadaceae
Pseudoalteromonas atlantica, X82134, Pseudoalteromonadaceae
Pseudoalteromonas espejiana, X82143, Pseudoalteromonadaceae
Pseudoalteromonas carrageenovora, X82136, Pseudoalteromonadaceae
Pseudoalteromonas issachenkonii, AF316144, Pseudoalteromonadaceae
Pseudoalteromonas tetradonis, AF214730, Pseudoalteromonadaceae
Pseudoalteromonas mariniglutinos, AJ507251, Pseudoalteromonadaceae
Pseudoalteromonas prydzensis, U85855, Pseudoalteromonadaceae
Pseudoalteromonas donghaensis, FJ754319, Pseudoalteromonadaceae
Pseudoalteromonas lipolytica, FJ404721, Pseudoalteromonadaceae
Pseudoalteromonas arabiensis, AB576636, Pseudoalteromonadaceae
Pseudoalteromonas flavipulchra, AF297958, Pseudoalteromonadaceae
Pseudoalteromonas maricaloris, AF144036, Pseudoalteromonadaceae
Pseudoalteromonas tunicata, Z25522, Pseudoalteromonadaceae
Pseudoalteromonas ulvae, AF172987, Pseudoalteromonadaceae
Pseudoalteromonas piscicida, AB090232, Pseudoalteromonadaceae
Pseudoalteromonas peptidolytica, AF007286, Pseudoalteromonadaceae
Pseudoalteromonas rubra, X82147, Pseudoalteromonadaceae
Pseudoalteromonas aurantia, X82135, Pseudoalteromonadaceae
Pseudoalteromonas citrea, X82137, Pseudoalteromonadaceae
Pseudoalteromonas denitrificans, X82138, Pseudoalteromonadaceae
Pseudoalteromonas phenolica, AF332880, Pseudoalteromonadaceae
Pseudoalteromonas spongiae, AY769918, Pseudoalteromonadaceae

Pseudoalteromonas luteoviolacea, X82144, Pseudoalteromonadaceae
Pseudoalteromonas byunsanensis, DQ011289, Pseudoalteromonadaceae
Pseudoalteromonas ruthenica, AF316891, Pseudoalteromonadaceae
Psychrosphaera saromensis, AB545807, type sp., Pseudoalteromonadaceae

Moritellaceae (9)

Moritella abyssi, AJ252022, Moritellaceae
Moritella dasanensis, EF192283, Moritellaceae
Moritella profunda, AJ252023, Moritellaceae
Moritella viscosa, AJ132226, Moritellaceae
Moritella yayanosii, AB008797, Moritellaceae
Moritella japonica, D21224, Moritellaceae
Moritella marina, AB038033, type sp., Moritellaceae
Paramoritella alkaliphila, AB364966, type sp., Moritellaceae
Paramoritella sediminis, JQ672626, Moritellaceae

Shewanellaceae (60)

Shewanella halifaxensis, AY579751, Shewanellaceae
Shewanella pealeana, CP000851, Shewanellaceae
Shewanella marinintestina, AB081757, Shewanellaceae
Shewanella sairae, AB081762, Shewanellaceae
Shewanella pneumatophori, AB204519, Shewanellaceae
Shewanella fidelis, AF420312, Shewanellaceae
Shewanella schlegeliana, AB081760, Shewanellaceae
Shewanella kaireitica, AB094598, Shewanellaceae
Shewanella psychrophila, AJ551089, Shewanellaceae
Shewanella piezotolerans, AJ551090, Shewanellaceae
Shewanella violacea, D21225, Shewanellaceae
Shewanella benthica, X82131, Shewanellaceae
Shewanella abyssi, AB201475, Shewanellaceae
Shewanella gelidimarina, U85907, Shewanellaceae
Shewanella surugensis, AB094597, Shewanellaceae
Shewanella canadensis, AY579749, Shewanellaceae
Shewanella sediminis, FR733715, Shewanellaceae
Shewanella sediminis, CP000821, Shewanellaceae
Shewanella hanedai, X82132, Shewanellaceae
Shewanella woodyi, CP000961, Shewanellaceae
Shewanella atlantica, AY579752, Shewanellaceae
Shewanella aquimarina, AY485225, Shewanellaceae
Shewanella loihica, DQ286387, Shewanellaceae
Shewanella marisflavi, AY485224, Shewanellaceae
Shewanella algidipiscicola, AB205570, Shewanellaceae
Shewanella colwelliana, AY653177, Shewanellaceae
Shewanella waksmanii, AY170366, Shewanellaceae
Shewanella algae, AF005249, Shewanellaceae
Shewanella upenei, GQ260190, Shewanellaceae
Shewanella indica, HM016084, Shewanellaceae
Shewanella fodinae, FM203122, Shewanellaceae
Shewanella dokdonensis, GQ245918, Shewanellaceae
Shewanella chilikensis, FM210033, Shewanellaceae
Shewanella haliotis, EF178282, Shewanellaceae
Shewanella corallii, FJ041083, Shewanellaceae
Shewanella amazonensis, AF005248, Shewanellaceae
Shewanella marina, EU290154, Shewanellaceae
Shewanella donghaensis, AY326275, Shewanellaceae
Shewanella olleyana, AF295592, Shewanellaceae
Shewanella pacifica, AF500075, Shewanellaceae
Shewanella japonica, AF145921, Shewanellaceae
Shewanella glacialis, AB205571, Shewanellaceae
Shewanella morhuae, AB205576, Shewanellaceae
Shewanella baltica, AJ000214, Shewanellaceae
Shewanella oneidensis, AF005251, Shewanellaceae
Shewanella profunda, FR733713, Shewanellaceae
Shewanella putrefaciens, X81623, type sp., Shewanellaceae
Shewanella xiamenensis, FJ589031, Shewanellaceae
Shewanella decolorationis, AJ609571, Shewanellaceae
Shewanella seohaensis, GU944672, Shewanellaceae
Shewanella hafniensis, AB205566, Shewanellaceae
Shewanella livingstonensis, AJ300834, Shewanellaceae
Shewanella vesiculosa, AM980877, Shewanellaceae
Shewanella frigidimarina, U85903, Shewanellaceae
Shewanella arctica, GU564402, Shewanellaceae
Shewanella basaltis, EU143361, Shewanellaceae
Shewanella denitrificans, AJ311964, Shewanellaceae
Shewanella gaetbuli, AY190533, Shewanellaceae
Shewanella irciniae, DQ180743, Shewanellaceae
Shewanella spongiae, DQ167234, Shewanellaceae

Paraferomonas sedimenticola, AB252732, type sp., Ferrimonadaceae

Ferrimonadaceae (6)

Ferrimonas balearica, X93021, type sp., Ferrimonadaceae
Ferrimonas marina, AB193751, Ferrimonadaceae
Ferrimonas senticii, DQ778094, Ferrimonadaceae
Ferrimonas kyonanensis, AB245514, Ferrimonadaceae
Ferrimonas sediminum, GU391222, Ferrimonadaceae
Ferrimonas futtsuensis, AB245515, Ferrimonadaceae

Neiella marina, EU513001, type sp., Unclassified Alteromonadales

Echinimonas agarilytica, JX072970, type sp., Vibrionaceae

Algicola bacteriolytica, D89929, type sp., Pseudoalteromonadaceae

Algicola sagamiensis, AB063324, Pseudoalteromonadaceae

Rheinheimera aquatica, GQ168584, Chromatiaceae

Rheinheimera texasensis, AY701891, Chromatiaceae

Rheinheimera tilapiae, HQ111524, Chromatiaceae

Rheinheimera soli, EF575565, Chromatiaceae

Rheinheimera tangshanensis, DQ874340, Chromatiaceae

Rheinheimera chironomi, DQ298025, Chromatiaceae

Rheinheimera aquimaris, EF076757, Chromatiaceae

Rheinheimera baltica, AJ441080, type sp., Chromatiaceae

Rheinheimera nanhaiensis, FJ169968, Chromatiaceae

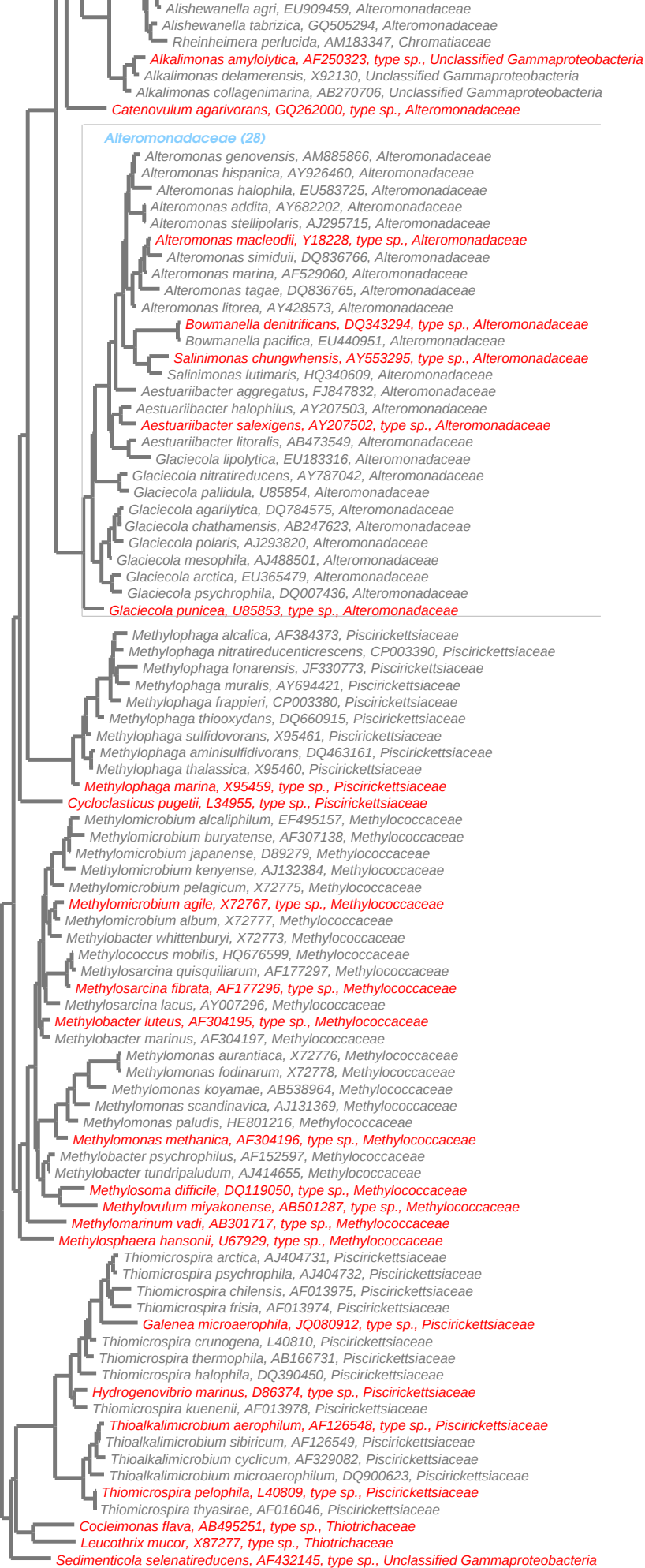
Rheinheimera pacifica, AB073132, Chromatiaceae

Rheinheimera longhuensis, EU183319, Chromatiaceae

Alishewanella aestuarii, EF660759, Alteromonadaceae

Alishewanella jeotgali, EU817498, Alteromonadaceae

Alishewanella fetalis, AF144407, type sp., Alteromonadaceae



Halomonadaceae (101)

- Halomonas neptunia*, AF212202, Halomonadaceae
- Halomonas titanicae*, FN433898, Halomonadaceae
- Halomonas alkaliantarctica*, AJ564880, Halomonadaceae
- Halomonas boliviensis*, AY245449, Halomonadaceae
- Halomonas variabilis*, AJ306893, Halomonadaceae
- Halomonas zhanjiangensis*, FJ429198, Halomonadaceae
- Halomonas sulfidaeris*, AF212204, Halomonadaceae
- Halomonas janggokensis*, AM229315, Halomonadaceae
- Halomonas subterranea*, EF144148, Halomonadaceae
- Halomonas arcis*, EF144147, Halomonadaceae



Litoricolaceae (2)

Litoricola lipolytica, EF176580, type sp., Litoricolaceae
Litoricola marina, FJ943234, Litoricolaceae

Oceanospirillaceae (44)

Marinomonas hwangdonensis, JN087530, Oceanospirillaceae
Marinomonas arctica, DQ492749, Oceanospirillaceae
Marinomonas polaris, AJ833000, Oceanospirillaceae
Marinomonas primoryensis, AB074193, Oceanospirillaceae
Marinomonas ushuaiensis, AJ627909, Oceanospirillaceae
Marinomonas foliarum, EU188444, Oceanospirillaceae
Marinomonas pontica, AY539835, Oceanospirillaceae
Marinomonas alcarazii, EU188442, Oceanospirillaceae
Marinomonas rhizomae, EU188443, Oceanospirillaceae
Marinomonas aquiplantarum, EU188447, Oceanospirillaceae
Marinomonas posidonica, EU188445, Oceanospirillaceae
Marinomonas dokdonensis, DQ011526, Oceanospirillaceae
Marinomonas arenicola, AB467281, Oceanospirillaceae
Marinomonas pollencensis, EU188441, Oceanospirillaceae
Marinomonas communis, DQ011528, type sp., Oceanospirillaceae
Marinomonas ostreistagni, AB242868, Oceanospirillaceae
Marinomonas aquimarina, AJ843077, Oceanospirillaceae
Marinomonas vaga, X67025, Oceanospirillaceae
Marinomonas brasiliensis, GU929940, Oceanospirillaceae
Marinomonas balearica, EU188448, Oceanospirillaceae
Marinomonas mediterranea, AF063027, Oceanospirillaceae
Oceaniserpentilla haliotis, AM747817, Oceanospirillaceae
Spongiispira norvegica, AM117931, type sp., Unclassified Oceanospirillales
Bermanella marisrubri, AY136131, Oceanospirillaceae
Oleispira antarctica, AJ426420, type sp., Oceanospirillaceae
Oleispira lenta, EU980447, Oceanospirillaceae
Oceanobacter kriegii, AB006767, type sp., Oceanospirillaceae
Oleibacter marinus, AB435649, type sp., Oceanospirillaceae
Thalassolituus marinus, GQ426888, Oceanospirillaceae
Thalassolituus oleivorans, AJ431699, type sp., Oceanospirillaceae
Neptunomonas japonica, AB288092, Oceanospirillaceae
Neptunomonas naphthovorans, AF053734, type sp., Oceanospirillaceae
Neptunomonas qingdaonensis, JF747202, Oceanospirillaceae
Neptunomonas antarctica, FJ713802, Oceanospirillaceae
Neptunomonas concharum, JF748732, Oceanospirillaceae
Oceanospirillum beijerinckii, AB006760, Oceanospirillaceae
Oceanospirillum maris, AB006763, Oceanospirillaceae
Oceanospirillum multiglobuliferum, AB006764, Oceanospirillaceae
Amphritea atlantica, AM156910, type sp., Oceanospirillaceae
Amphritea balenae, AB330883, Oceanospirillaceae
Amphritea japonica, AB330881, Oceanospirillaceae
Neptuniibacter caesariensis, AY136116, type sp., Oceanospirillaceae
Neptuniibacter halophilus, GQ131677, Oceanospirillaceae
Corallomonas stylophorae, GU569894, type sp., Oceanospirillaceae

Marinobacterium georgiense, U58339, type sp., Alteromonadaceae
Marinobacterium halophilum, AY563030, Alteromonadaceae
Marinobacterium maritimum, EU399548, Alteromonadaceae
Marinobacterium stanieri, AB021367, Alteromonadaceae
Marinobacterium sediminicola, EU573966, Alteromonadaceae
Marinobacterium coralli, GU183820, Alteromonadaceae
Marinobacterium jannaschii, AB006765, Alteromonadaceae
Marinobacterium rhizophilum, EF192391, Alteromonadaceae
Nitricola laciaponensis, AY567473, type sp., Oceanospirillaceae
Marinobacterium litorale, DQ917760, Alteromonadaceae
Marinobacterium lutimaris, FJ230839, Alteromonadaceae
Marinobacterium nitratireducens, EU573965, Alteromonadaceae
Balneatrix alpica, Y17112, type sp., Oceanospirillaceae
Oleiphilus messinensis, AJ295154, type sp., Oleiphilaceae

Marinobacter psychrophilus, DQ060402, Alteromonadaceae
Marinobacter antarcticus, FJ196022, Alteromonadaceae
Marinobacter maritimus, AJ704395, Alteromonadaceae
Marinobacter goseongensis, EF660754, Alteromonadaceae
Marinobacter lipolyticus, AY147906, Alteromonadaceae
Marinobacter guineae, AM503093, Alteromonadaceae
Marinobacter adhaerens, AY241552, Alteromonadaceae
Marinobacter flavimaris, AY517632, Alteromonadaceae
Marinobacter algicola, AY258110, Alteromonadaceae
Marinobacter salsuginis, EF028328, Alteromonadaceae
Marinobacter sediminum, AJ609270, Alteromonadaceae
Marinobacter bryozoorum, AJ609271, Alteromonadaceae
Marinobacter segnicrescens, EF157832, Alteromonadaceae
Marinobacter laciisalsi, EU047505, Alteromonadaceae
Marinobacter zhanjiangensis, FJ425903, Alteromonadaceae
Marinobacter salicampi, EF486354, Alteromonadaceae
Marinobacter daqiaonensis, FJ984869, Alteromonadaceae
Marinobacter gudaonensis, DQ414419, Alteromonadaceae
Marinobacter excellens, AY180101, Alteromonadaceae
Marinobacter litoralis, AF479689, Alteromonadaceae
Marinobacter vinifimus, DQ235263, Alteromonadaceae
Marinobacter daepoensis, AY517633, Alteromonadaceae
Marinobacter hydrocarbonoclasticus, X67022, type sp., Alteromonadaceae
Marinobacter oulmenensis, FJ897726, Alteromonadaceae
Marinobacter koreensis, DQ325514, Alteromonadaceae
Marinobacter santoriniensis, EU496088, Alteromonadaceae
Marinobacter pelagius, DQ458821, Alteromonadaceae
Marinobacter szutsaonensis, EU164778, Alteromonadaceae
Marinobacter mobilis, EU293412, Alteromonadaceae
Marinobacter zhejiangensis, EU293413, Alteromonadaceae
Marinobacter xestospongiae, HQ203044, Alteromonadaceae
Marinobacter lutaoensis, AF288157, Alteromonadaceae
Halospina denitrificans, DQ072719, type sp., Hahellaceae
Halovibrio denitrificans, DQ072718, Halomonadaceae
Pseudomonas halophila, AB021383, Pseudomonadaceae
Salicola marasensis, DQ019934, type sp., Unclassified Oceanospirillales
Salicola salis, DQ129689, Unclassified Oceanospirillales

Hahellaceae (4)

Hahella chejuensis, CP000155, type sp., Hahellaceae
Hahella ganghwensis, AY676463, Hahellaceae

Hahella antarctica, EF495227, Hahellaceae

Zooshikella ganghwensis, AY130994, type sp., Hahellaceae

Endozoicomonas elysicola, AB196667, type sp., Hahellaceae

Endozoicomonas numazuensis, AB695088, Hahellaceae

Endozoicomonas montiporae, FJ347758, Hahellaceae

Kistimonas asteriae, EU599216, type sp., Hahellaceae

Kistimonas scapharcae, JF811908, Hahellaceae

Pseudomonadaceae (152)

Pseudomonas azotoformans, D84009, Pseudomonadaceae

Pseudomonas simiae, AJ936933, Pseudomonadaceae

Pseudomonas constantii, AF374472, Pseudomonadaceae

Pseudomonas lurida, AJ581999, Pseudomonadaceae

Pseudomonas poae, AJ492829, Pseudomonadaceae

Pseudomonas trivialis, AJ492831, Pseudomonadaceae

Pseudomonas extremorientalis, AF405328, Pseudomonadaceae

Pseudomonas tolaasii, AF255336, Pseudomonadaceae

Pseudomonas palleroniana, AY091527, Pseudomonadaceae

Pseudomonas salomonii, AY091528, Pseudomonadaceae

Pseudomonas cedrina subsp. fulgida, AJ492830, Pseudomonadaceae

Pseudomonas cedrina subsp. cedrina, AF064461, Pseudomonadaceae

Pseudomonas orientalis, AF064457, Pseudomonadaceae

Pseudomonas fluorescens, D84013, Pseudomonadaceae

Pseudomonas antarctica, AJ537601, Pseudomonadaceae

Pseudomonas meridiana, AJ537602, Pseudomonadaceae

Pseudomonas extremaustralis, AJ583501, Pseudomonadaceae

Pseudomonas grimontii, AF268029, Pseudomonadaceae

Pseudomonas brenneri, AF268968, Pseudomonadaceae

Pseudomonas proteolytica, AJ537603, Pseudomonadaceae

Pseudomonas gessardii, AF074384, Pseudomonadaceae

Pseudomonas rhodesiae, AF064459, Pseudomonadaceae

Pseudomonas mucidolens, D84017, Pseudomonadaceae

Pseudomonas synxantha, D84025, Pseudomonadaceae

Thermoleophilum minutum, HQ223108, Thermoleophilaceae

Pseudomonas libanensis, AF057645, Pseudomonadaceae

Pseudomonas marginalis, Z76663, Pseudomonadaceae

Pseudomonas panacis, AY787208, Pseudomonadaceae

Pseudomonas veronii, AF064460, Pseudomonadaceae

Pseudomonas amygdali, Z76654, Pseudomonadaceae

Pseudomonas viridiflava, AY180972, Pseudomonadaceae

Pseudomonas ficuserectae, AB021378, Pseudomonadaceae

Pseudomonas syringae, DQ318866, Pseudomonadaceae

Pseudomonas congelans, AJ492828, Pseudomonadaceae

Pseudomonas cannabina, AJ492827, Pseudomonadaceae

Pseudomonas protegens, AJ278812, Pseudomonadaceae

Pseudomonas saponiphila, FM208264, Pseudomonadaceae

Pseudomonas cichorii, Z76658, Pseudomonadaceae

Pseudomonas caricapapayae, D84010, Pseudomonadaceae

Pseudomonas savastanoi, AB021402, Pseudomonadaceae

Pseudomonas tremae, AJ492826, Pseudomonadaceae

Pseudomonas frederiksbergensis, AJ249382, Pseudomonadaceae

Pseudomonas mandelii, AF058286, Pseudomonadaceae

Pseudomonas corrugata, D84012, Pseudomonadaceae

Pseudomonas kilonensis, AJ292426, Pseudomonadaceae

Pseudomonas brassicacearum subsp. neoaurantiaca, EU391388, Pseudomonadaceae

Pseudomonas brassicacearum subsp. brassicacearum, AF100321, Pseudomonadaceae

Pseudomonas mediterranea, AF386080, Pseudomonadaceae

Pseudomonas thivervalensis, AF100323, Pseudomonadaceae

Pseudomonas lini, AY035996, Pseudomonadaceae

Pseudomonas migulae, AF074383, Pseudomonadaceae

Pseudomonas arsenicoxydans, FN645213, Pseudomonadaceae

Pseudomonas fragi, AF094733, Pseudomonadaceae

Pseudomonas psychrophila, AB041885, Pseudomonadaceae

Pseudomonas deceptionensis, GU936597, Pseudomonadaceae

Pseudomonas taetrolens, D84027, Pseudomonadaceae

Pseudomonas lundensis, AB021395, Pseudomonadaceae

Pseudomonas chlororaphis subsp. piscium, FJ168539, Pseudomonadaceae

Pseudomonas chlororaphis subsp. chlororaphis, Z76673, Pseudomonadaceae

Pseudomonas chlororaphis subsp. aureofaciens, AY509898, Pseudomonadaceae

Pseudomonas chlororaphis subsp. aurantiaca, DQ682655, Pseudomonadaceae

Pseudomonas umsongensis, AF468450, Pseudomonadaceae

Pseudomonas moorei, AM293566, Pseudomonadaceae

Pseudomonas vancouverensis, AJ011507, Pseudomonadaceae

Pseudomonas mohnii, AM293567, Pseudomonadaceae

Pseudomonas jessenii, AF068259, Pseudomonadaceae

Pseudomonas reinekei, AM293565, Pseudomonadaceae

Pseudomonas baetica, FM201274, Pseudomonadaceae

Pseudomonas agarici, Z76652, Pseudomonadaceae

Pseudomonas moraviensis, AY970952, Pseudomonadaceae

Pseudomonas koreensis, AF468452, Pseudomonadaceae

Pseudomonas kuykendallii, JF749828, Pseudomonadaceae

Pseudomonas graminis, Y11150, Pseudomonadaceae

Pseudomonas lutea, AY364537, Pseudomonadaceae

Pseudomonas abietaniphila, AJ011504, Pseudomonadaceae

Pseudomonas rhizosphaerae, AY152673, Pseudomonadaceae

Pseudomonas japonica, AB126621, Pseudomonadaceae

Pseudomonas vranovensis, AY970951, Pseudomonadaceae

Pseudomonas asplenii, AB021397, Pseudomonadaceae

Pseudomonas fuscovaginae, FJ483519, Pseudomonadaceae

Pseudomonas montellii, AF064458, Pseudomonadaceae

Pseudomonas plecoglossicida, AB009457, Pseudomonadaceae

Pseudomonas taiwanensis, EU103629, Pseudomonadaceae

Pseudomonas entomophila, AY907566, Pseudomonadaceae

Pseudomonas mosselii, AF072688, Pseudomonadaceae

Pseudomonas oryzihabitans, D84004, Pseudomonadaceae

Pseudomonas putida, D84020, Pseudomonadaceae

Pseudomonas cremoricolorata, AB060137, Pseudomonadaceae

Pseudomonas parafulva, AB046999, Pseudomonadaceae

Pseudomonas fulva, AB046996, Pseudomonadaceae

Pseudomonas pertucinogena, AB021380, Pseudomonadaceae

Pseudomonas xiamenensis, DQ088664, Pseudomonadaceae

Pseudomonas bauzanensis, GQ161991, Pseudomonadaceae

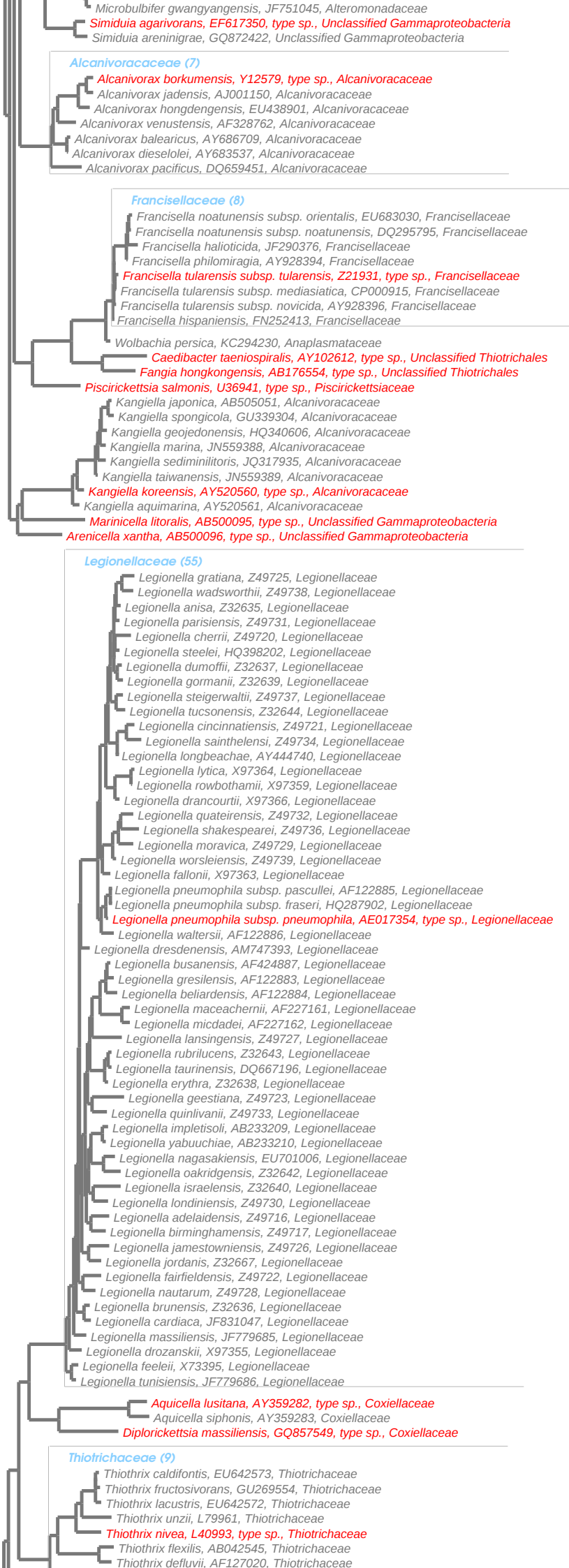
Pseudomonas litoralis, FN908483, Pseudomonadaceae

Pseudomonas pelagia, EU888911, Pseudomonadaceae

Pseudomonas sabulinigri, EU143352, Pseudomonadaceae

Pseudomonas xinjiangensis, EU286805, *Pseudomonadaceae*
Pseudomonas pachastrellae, AB125366, *Pseudomonadaceae*
Pseudomonas luteola, D84002, *Pseudomonadaceae*
Pseudomonas zeshuii, JN411093, *Pseudomonadaceae*
Pseudomonas duriflava, EU046271, *Pseudomonadaceae*
Azomonas agilis, AB175652, *type sp.*, *Pseudomonadaceae*
Pseudomonas benzenivorans, FM208263, *Pseudomonadaceae*
Azorhizophilus paspali, AJ308318, *type sp.*, *Pseudomonadaceae*
Azotobacter vinelandii, AB175657, *Pseudomonadaceae*
Azotobacter armeniacus, AB175655, *Pseudomonadaceae*
Azotobacter salinestris, AB175656, *Pseudomonadaceae*
Azotobacter nigricans subsp. *nigricans*, AB175651, *Pseudomonadaceae*
Pseudomonas azotifigens, AB189452, *Pseudomonadaceae*
Pseudomonas indica, AF302795, *Pseudomonadaceae*
Pseudomonas balearica, U26418, *Pseudomonadaceae*
Pseudomonas thermotolerans, AJ311980, *Pseudomonadaceae*
Azotobacter beijerinckii, AJ308319, *Pseudomonadaceae*
Azotobacter chroococcum, AB175653, *type sp.*, *Pseudomonadaceae*
Pseudomonas citronellolis, Z76659, *Pseudomonadaceae*
Pseudomonas delhiensis, DQ339153, *Pseudomonadaceae*
Pseudomonas jinjuensis, AF468448, *Pseudomonadaceae*
Pseudomonas knackmussii, AF039489, *Pseudomonadaceae*
Pseudomonas nitroreducens, AM088473, *Pseudomonadaceae*
Pseudomonas panipatensis, EF424401, *Pseudomonadaceae*
Pseudomonas aeruginosa, HE978271, *type sp.*, *Pseudomonadaceae*
Pseudomonas otitidis, AY953147, *Pseudomonadaceae*
Pseudomonas resinovorans, Z76668, *Pseudomonadaceae*
Pseudomonas oleovorans subsp. *oleovorans*, D84018, *Pseudomonadaceae*
Pseudomonas psychrotolerans, AJ575816, *Pseudomonadaceae*
Pseudomonas stutzeri, AF094748, *Pseudomonadaceae*
Pseudomonas xanthomarina, AB176954, *Pseudomonadaceae*
Pseudomonas tuomuerensis, DQ868767, *Pseudomonadaceae*
Serpens flexibilis, GU269546, *type sp.*, *Pseudomonadaceae*
Pseudomonas caeni, EU620679, *Pseudomonadaceae*
Pseudomonas oleovorans subsp. *lubricantis*, DQ842018, *Pseudomonadaceae*
Pseudomonas pseudoalcaligenes, Z76666, *Pseudomonadaceae*
Pseudomonas alcaliphila, AB030583, *Pseudomonadaceae*
Pseudomonas toyotomiensis, AB453701, *Pseudomonadaceae*
Pseudomonas mendocina, D84016, *Pseudomonadaceae*
Pseudomonas alcaligenes, D84006, *Pseudomonadaceae*
Pseudomonas argentinensis, AY691188, *Pseudomonadaceae*
Pseudomonas straminea, D84023, *Pseudomonadaceae*
Pseudomonas punonensis, JQ344321, *Pseudomonadaceae*
Pseudomonas seleniipraecipitans, FJ422810, *Pseudomonadaceae*
Pseudomonas flavescens, U01916, *Pseudomonadaceae*
Pseudomonas anguilliseptica, X99540, *Pseudomonadaceae*
Pseudomonas peli, AM114534, *Pseudomonadaceae*
Pseudomonas guineae, AM491810, *Pseudomonadaceae*
Pseudomonas cuatrocienegasensis, EU791281, *Pseudomonadaceae*
Pseudomonas pohangensis, DQ339144, *Pseudomonadaceae*
Pseudomonas taeanensis, FJ424813, *Pseudomonadaceae*
Pseudomonas composti, FN429930, *Pseudomonadaceae*
Pseudomonas borbori, AM114527, *Pseudomonadaceae*
Pseudomonas marincola, AB301071, *Pseudomonadaceae*
Pseudomonas segetis, AY770691, *Pseudomonadaceae*
Azomonas macrocytogenes, AB175654, *Pseudomonadaceae*

Congregibacter litoralis, AAOA01000004, *type sp.*, *Unclassified Gammaproteobacteria*
Haliae rubra, EU161717, *Alteromonadaceae*
Haliae mediterranea, FN398053, *Alteromonadaceae*
Chromatococcus halotolerans, AM691086, *type sp.*, *Unclassified Gammaproteobacteria*
Haliae salexigens, AY576769, *type sp.*, *Alteromonadaceae*
Halioglobus pacificus, AB602430, *Unclassified Gammaproteobacteria*
Halioglobus japonicus, AB602427, *type sp.*, *Unclassified Gammaproteobacteria*
Spongiibacter borealis, HQ199599, *Unclassified Gammaproteobacteria*
Zhongshania antarctica, FJ889619, *type sp.*, *Unclassified Gammaproteobacteria*
Zhongshania guokunii, FJ889678, *Unclassified Gammaproteobacteria*
Spongiibacter marinus, AM117932, *type sp.*, *Unclassified Gammaproteobacteria*
Spongiibacter tropicus, EF988653, *Unclassified Gammaproteobacteria*
Sinobacterium caligoides, HQ686140, *type sp.*, *Oceanospirillaceae*
Dasania marina, AY771747, *type sp.*, *Unclassified Pseudomonadales*
Saccharophagus degradans, AF055269, *type sp.*, *Alteromonadaceae*
Umboniibacter marinipuniceus, AB467279, *type sp.*, *Unclassified Gammaproteobacteria*
Maricoccus nonylphenolicus, AB626730, *type sp.*, *Unclassified Alteromonadales*
Pseudoteredinibacter isoporaе, FJ347760, *type sp.*, *Unclassified Alteromonadales*
Eionea nigra, AY576771, *type sp.*, *Unclassified Alteromonadales*
Gilvamarinus chinensis, DQ822530, *type sp.*, *Unclassified Alteromonadales*
Teredinibacter turnerae, AY028398, *type sp.*, *Unclassified Alteromonadales*
Porticoccus litoralis, EF468719, *type sp.*, *Unclassified Gammaproteobacteria*
Cellvibrio fibrivorans, AJ289164, *Pseudomonadaceae*
Cellvibrio ostraviensis, AJ493583, *Pseudomonadaceae*
Cellvibrio fulvus, AF448514, *Pseudomonadaceae*
Cellvibrio vulgaris, AF448513, *Pseudomonadaceae*
Cellvibrio mixtus subsp. *mixtus*, AF448515, *type sp.*, *Pseudomonadaceae*
Cellvibrio japonicus, AF452103, *Pseudomonadaceae*
Cellvibrio gandavensis, AJ289162, *Pseudomonadaceae*
Marinimicrobium agarilyticum, AY839870, *Alteromonadaceae*
Marinimicrobium locisalis, EU874388, *Alteromonadaceae*
Marinimicrobium koreense, AY839869, *type sp.*, *Alteromonadaceae*
Microbulbifer agarilyticus, AB158515, *Alteromonadaceae*
Microbulbifer elongatus, AF500006, *Alteromonadaceae*
Microbulbifer yueqingensis, GQ262813, *Alteromonadaceae*
Microbulbifer salipaludis, AF479688, *Alteromonadaceae*
Microbulbifer hydrolyticus, U58338, *type sp.*, *Alteromonadaceae*
Microbulbifer celer, EF486352, *Alteromonadaceae*
Microbulbifer chitinilyticus, AB500894, *Alteromonadaceae*
Microbulbifer halophilus, EF674853, *Alteromonadaceae*
Microbulbifer thermotolerans, AB124836, *Alteromonadaceae*
Microbulbifer epialgicus, AB266054, *Alteromonadaceae*
Microbulbifer variabilis, AB167354, *Alteromonadaceae*
Microbulbifer maritimus, AY377986, *Alteromonadaceae*
Microbulbifer taiwanensis, FR822983, *Alteromonadaceae*
Microbulbifer marinus, GQ262812, *Alteromonadaceae*
Microbulbifer donghaiensis, EU365694, *Alteromonadaceae*
Microbulbifer okinawensis, AB500893, *Alteromonadaceae*
Microbulbifer pacificus, DQ993341, *Alteromonadaceae*



Thiothrix disciformis, AB042532, Thiotrichaceae
Thiothrix eikelboomii, AB042819, Thiotrichaceae

Methylogaea oryzae, EU672873, type sp., Methylococcaceae

Methylococcaceae (4)

Methylocaldum gracile, U89298, Methylococcaceae

Methylocaldum szegediense, U89300, type sp., Methylococcaceae

Methylocaldum tepidum, U89297, Methylococcaceae

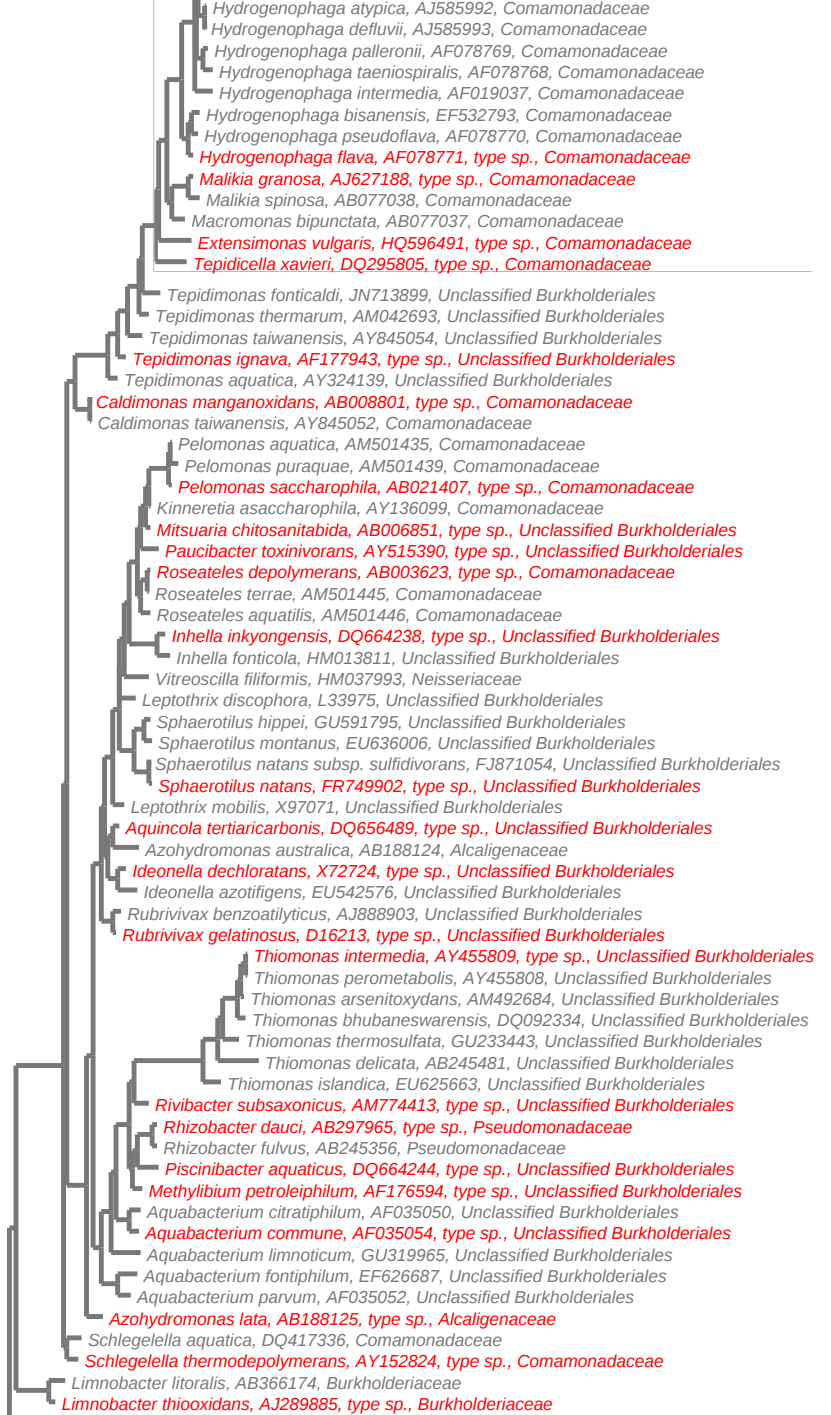
Methylococcus capsulatus, AJ563935, type sp., Methylococcaceae

Betaproteobacteria (531)

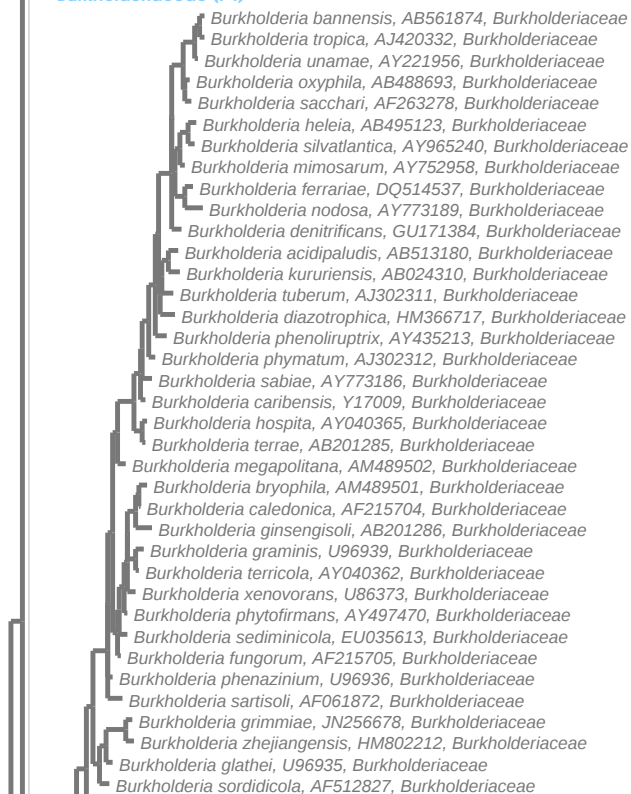
Burkholderiales (379)

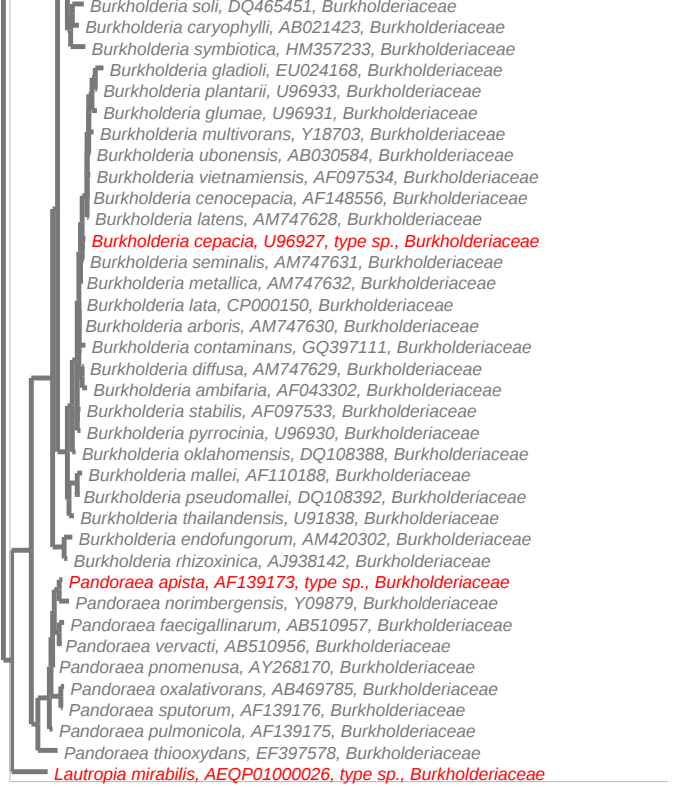
Comamonadaceae (103)

Acidovorax defluvii, Y18616, Comamonadaceae
Acidovorax radicans, HM027578, Comamonadaceae
Acidovorax delafieldii, AF078764, Comamonadaceae
Verminephrobacter aporrectodeae, FJ214186, type sp., Comamonada
Verminephrobacter eiseniae, DQ327663, type sp., Comamonadaceae
Acidovorax soli, FJ599672, Comamonadaceae
Acidovorax caeni, AM084006, Comamonadaceae
Acidovorax facilis, AF078765, type sp., Comamonadaceae
Acidovorax temperans, AF078766, Comamonadaceae
Diaphorobacter nitroreducens, AB064317, type sp., Comamonadaceae
Diaphorobacter oryzae, EU342381, Comamonadaceae
Alicyclophilus denitrificans, AJ418042, type sp., Comamonadaceae
Acidovorax anthurii, AJ007013, Comamonadaceae
Acidovorax valerianellae, AJ431731, Comamonadaceae
Acidovorax wautersii, JQ946365, Comamonadaceae
Giesbergeria anulus, AB074527, Comamonadaceae
Giesbergeria kuznetsovii, AY780907, Comamonadaceae
Giesbergeria voronezhensis, AY780905, type sp., Comamonadaceae
Giesbergeria giesbergeri, AB074522, Comamonadaceae
Giesbergeria sinuosa, AF078754, Comamonadaceae
Pseudacidovorax intermedius, EF469609, type sp., Comamonadaceae
Acidovorax avenae, AF137505, Comamonadaceae
Acidovorax cattleyae, AF137504, Comamonadaceae
Acidovorax citrulli, AF137506, Comamonadaceae
Acidovorax oryzae, DQ360414, Comamonadaceae
Acidovorax konjaci, AJ420325, Comamonadaceae
Comamonas granuli, AB187586, Comamonadaceae
Hylemonella gracilis, AF078753, type sp., Comamonadaceae
Xylophilus ampelinus, AJ420330, type sp., Unclassified Burkholderiales
Comamonas badia, AB164432, Comamonadaceae
Comamonas zonglianii, GQ245981, Comamonadaceae
Comamonas terrigena, AF078772, type sp., Comamonadaceae
Comamonas aquatica, AJ430344, Comamonadaceae
Comamonas jiangduensis, JQ941713, Comamonadaceae
Comamonas denitrificans, AF233877, Comamonadaceae
Comamonas nitrivorans, AJ251577, Comamonadaceae
Comamonas kerstersii, AJ430347, Comamonadaceae
Comamonas terrae, GQ497244, Comamonadaceae
Comamonas odontotermitis, DQ453128, Comamonadaceae
Comamonas koreensis, AF275377, Comamonadaceae
Comamonas guangdongensis, EU515237, Comamonadaceae
Comamonas thiooxydans, DQ322069, Comamonadaceae
Comamonas testosteroni, M11224, Comamonadaceae
Comamonas composti, EF015884, Comamonadaceae
Delftia lacustris, EU888308, Comamonadaceae
Delftia tsuruhatensis, AB075017, Comamonadaceae
Delftia acidovorans, AB021417, type sp., Comamonadaceae
Delftia litopenaei, GU721027, Comamonadaceae
Brachymonas chironomi, EU346912, Comamonadaceae
Brachymonas denitrificans, D14320, Comamonadaceae
Lampropedia hyalina, AB089485, type sp., Comamonadaceae
Xenophilus azovorans, AF285414, type sp., Comamonadaceae
Xenophilus aerolatus, EF660342, Comamonadaceae
Simplicispira psychrophila, AF078755, Comamonadaceae
Simplicispira limi, DQ372987, Comamonadaceae
Simplicispira metamorpha, Y18618, type sp., Comamonadaceae
Rhodoferax antarcticus, GU233447, Comamonadaceae
Rhodoferax fermentans, D16211, type sp., Comamonadaceae
Albidiferax ferrireducens, CP000267, type sp., Comamonadaceae
Pseudorhodoferax caeni, AJ606333, Comamonadaceae
Pseudorhodoferax soli, EU825700, type sp., Comamonadaceae
Pseudorhodoferax aquiterrae, GU721026, Comamonadaceae
Limnohabitans australis, FM178226, Comamonadaceae
Limnohabitans curvus, AJ938026, type sp., Comamonadaceae
Limnohabitans parvus, FM165536, Comamonadaceae
Limnohabitans planktonicus, FM165535, Comamonadaceae
Polaromonas hydrogenivorans, DQ094183, Comamonadaceae
Polaromonas naphthalenivorans, AY166684, Comamonadaceae
Polaromonas aquatica, AM039830, Comamonadaceae
Polaromonas vacuolata, U14585, type sp., Comamonadaceae
Polaromonas glacialis, HM583568, Comamonadaceae
Polaromonas cryoconiti, HM583567, Comamonadaceae
Polaromonas jejuensis, EU030285, Comamonadaceae
Curvibacter fontanus, AB120963, Comamonadaceae
Curvibacter gracilis, AB109889, type sp., Comamonadaceae
Curvibacter lanceolatus, AB021390, Comamonadaceae
Curvibacter delicatus, AF078756, Comamonadaceae
Variovorax boronicumulans, AB300597, Comamonadaceae
Variovorax paradoxus, AJ420329, type sp., Comamonadaceae
Variovorax ginsengisoli, AB245358, Comamonadaceae
Caenimonas koreensis, DQ349098, type sp., Comamonadaceae
Caenimonas terrae, GU181268, Comamonadaceae
Ottowia pentelensis, EU518930, Comamonadaceae
Ottowia thiooxydans, AJ537466, type sp., Comamonadaceae
Ramlibacter henchirensis, AF439400, Comamonadaceae
Ramlibacter tataouinensis, AF144383, type sp., Comamonadaceae
Variovorax dokdonensis, DQ178978, Comamonadaceae
Variovorax defluvii, HQ385753, Comamonadaceae
Variovorax soli, DQ432053, Comamonadaceae
Hydrogenophaga caeni, DQ372983, Comamonadaceae

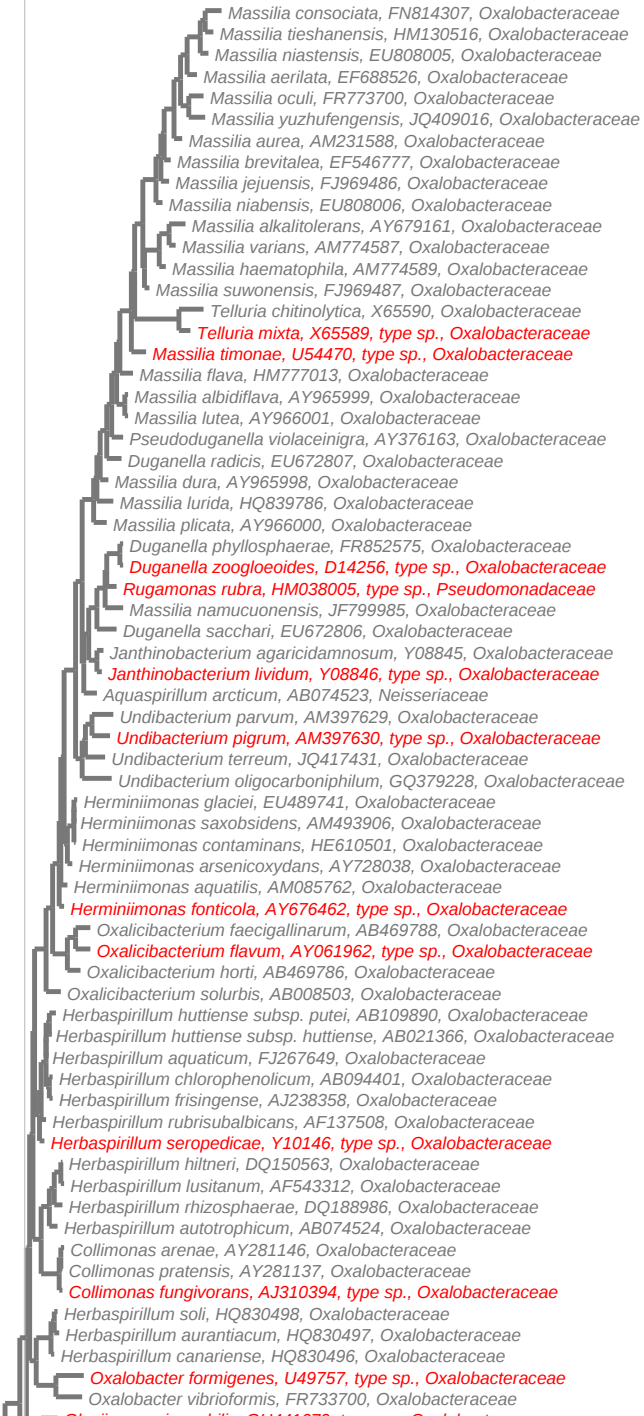


Burkholderiaceae (74)





Oxalobacteraceae (68)



Glaciimonas singularis, JX218021, Oxalobacteraceae

Paucimonas lemoignei, X92555, type sp., Burkholderiaceae

Cupriavidus oxalaticus, AF155567, Burkholderiaceae

Cupriavidus taiwanensis, AF300324, Burkholderiaceae

Cupriavidus laharis, AB054961, Burkholderiaceae

Cupriavidus pinatubonensis, AB121221, Burkholderiaceae

Cupriavidus basilensis, AF312022, Burkholderiaceae

Cupriavidus campinensis, AF312020, Burkholderiaceae

Cupriavidus necator, AF191737, type sp., Burkholderiaceae

Cupriavidus numazuensis, AB104447, Burkholderiaceae

Cupriavidus alkaliphilus, HQ438078, Burkholderiaceae

Cupriavidus respiraculi, AF500583, Burkholderiaceae

Cupriavidus metallidurans, D87999, Burkholderiaceae

Cupriavidus pauculus, EU024165, Burkholderiaceae

Cupriavidus gilardii, AF076645, Burkholderiaceae

Cupriavidus pampae, FN430567, Burkholderiaceae

Ralstonia solanacearum, EF016361, Burkholderiaceae

Ralstonia syzygii, AB021403, Burkholderiaceae

Ralstonia insidiosa, AF488779, Burkholderiaceae

Ralstonia mannitolilytica, AJ270258, Burkholderiaceae

Ralstonia pickettii, AY741342, type sp., Burkholderiaceae

Polynucleobacter acidiphobus, FM208180, Burkholderiaceae

Polynucleobacter diffcilis, FM208181, Burkholderiaceae

Polynucleobacter necessarius subsp. *necessarius*, AM397067, type sp., Burkholderiaceae

Polynucleobacter necessarius subsp. *asymbioticus*, AJ879783, Burkholderiaceae

Polynucleobacter cosmopolitanus, AJ550672, Burkholderiaceae

Polynucleobacter rarus, FM208182, Burkholderiaceae

Alcaligenaceae (48)

Advenella faeciporci, AB567741, Alcaligenaceae

Advenella mimigardefordensis, AY880023, Alcaligenaceae

Advenella incenata, AM944734, type sp., Alcaligenaceae

Advenella kashmirensis, AJ864470, Alcaligenaceae

Oligella ureolytica, AJ251912, Alcaligenaceae

Oligella urethralis, AF133538, type sp., Alcaligenaceae

Brackiella oedipodis, AJ277742, type sp., Alcaligenaceae

Taylorella asinigenitalis, AF067729, Alcaligenaceae

Taylorella equigenitalis, X68645, type sp., Alcaligenaceae

Pelistega europaea, Y11890, type sp., Alcaligenaceae

Candidimonas humi, FN556192, Alcaligenaceae

Candidimonas nitroreducens, FN556191, type sp., Alcaligenaceae

Candidimonas bauzanensis, GQ246953, Alcaligenaceae

Parapusillimonas granuli, DQ466075, type sp., Alcaligenaceae

Pusillimonas harenae, GQ232740, Alcaligenaceae

Pusillimonas ginsengisoli, EF672088, Alcaligenaceae

Pusillimonas soli, GQ241322, Alcaligenaceae

Pusillimonas noertemannii, AY695828, type sp., Alcaligenaceae

Paralcaligenes ureilyticus, FJ793551, type sp., Alcaligenaceae

Castellaniella caeni, AB166879, Alcaligenaceae

Castellaniella ginsengisoli, EU873313, Alcaligenaceae

Castellaniella denitrificans, U82826, Alcaligenaceae

Castellaniella defragrans, AJ005447, type sp., Alcaligenaceae

Castellaniella daejeonensis, GQ241321, Alcaligenaceae

Alcaligenes faecalis subsp. *phenolicus*, AY296718, Alcaligenaceae

Alcaligenes faecalis subsp. *faecalis*, D88008, type sp., Alcaligenaceae

Alcaligenes faecalis subsp. *parafaecalis*, AJ242986, Alcaligenaceae

Paenalcaligenes hominis, FN391024, type sp., Alcaligenaceae

Achromobacter denitrificans, AJ278451, Alcaligenaceae

Achromobacter ruhlandii, AB010840, Alcaligenaceae

Achromobacter xylosoxidans subsp. *xylosoxidans*, Y14908, type sp., Alcaligenaceae

Achromobacter insolitus, AY170847, Alcaligenaceae

Achromobacter spanius, AY170848, Alcaligenaceae

Achromobacter piechaudii, AB010841, Alcaligenaceae

Achromobacter marplatensis, EU150134, Alcaligenaceae

Bordetella avium, AF177666, Alcaligenaceae

Bordetella trematum, AJ277798, Alcaligenaceae

Bordetella hinzii, AF177667, Alcaligenaceae

Bordetella bronchiseptica, U04948, Alcaligenaceae

Bordetella parapertussis, U04949, Alcaligenaceae

Bordetella holmesii, U04820, Alcaligenaceae

Bordetella pertussis, U04950, type sp., Alcaligenaceae

Bordetella petrii, AJ249861, Alcaligenaceae

Kerstersonia gyiorum, AY131213, type sp., Alcaligenaceae

Kerstersonia similis, AY131212, Alcaligenaceae

Pigmentiphaga daeguensis, EF100696, Alcaligenaceae

Pigmentiphaga kullae, AF282916, type sp., Alcaligenaceae

Pigmentiphaga litoralis, EU583723, Alcaligenaceae

Sutterellaceae (5)

Sutterella stercoricanis, AJ566849, Sutterellaceae

Sutterella wadsworthensis, GU585669, type sp., Sutterellaceae

Sutterella parvirubra, AB300989, Sutterellaceae

Parasutterella secunda, AB491209, Sutterellaceae

Parasutterella excrementihominis, AB370250, type sp., Sutterellaceae

Derxia gummosa, AB089482, type sp., Alcaligenaceae

Derxia lacustris, HM046412, Alcaligenaceae

Neisseriaceae (76)

Eikenella corrodens, AB525415, type sp., Neisseriaceae

Stenoxymbacter acetivorans, EF212897, Neisseriaceae

Simonsiella muelleri, AF328147, type sp., Neisseriaceae

Bergeriella denitrificans, AB087265, type sp., Neisseriaceae

Kingella kingae, AY551999, type sp., Neisseriaceae

Neisseria elongata subsp. *glycolytica*, ADBF01000003, Neisseriaceae

Neisseria elongata subsp. *elongata*, L06171, Neisseriaceae

Kingella denitrificans, M22516, Neisseriaceae

Neisseria animalis, AJ239288, Neisseriaceae

Neisseria gonorrhoeae, X07714, type sp., Neisseriaceae

Neisseria polysaccharea, AJ239289, Neisseriaceae

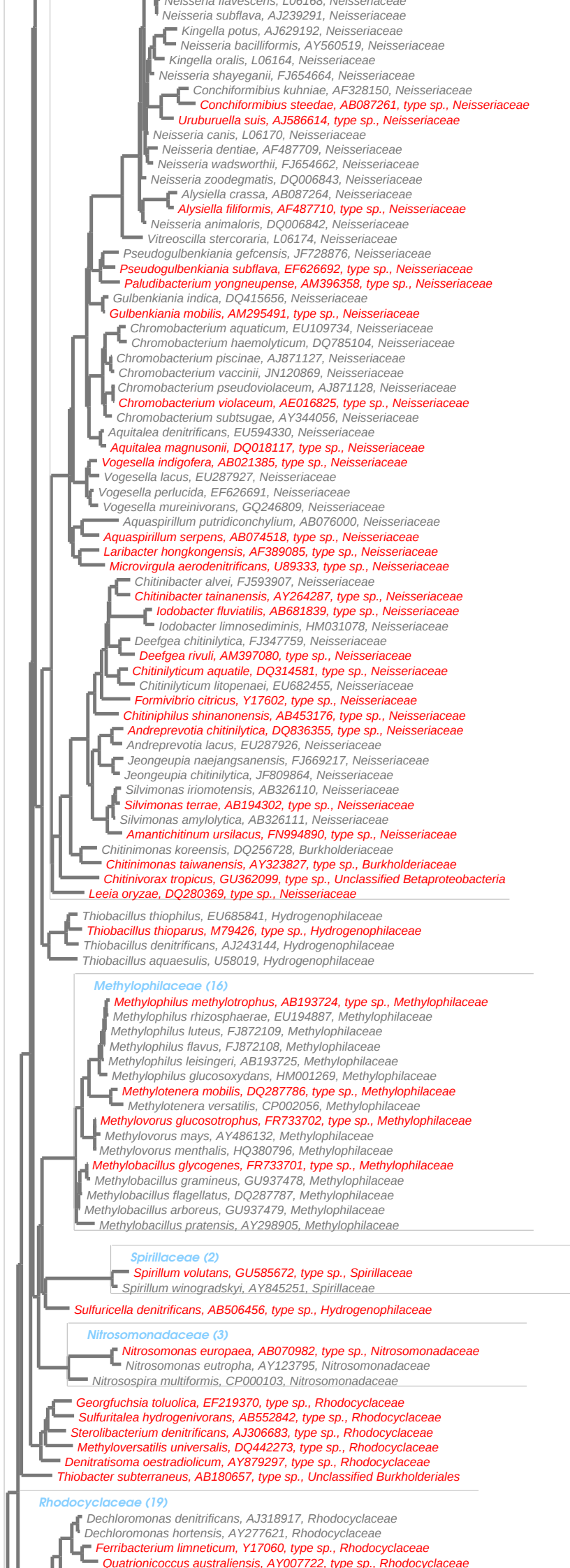
Neisseria cinerea, ACDY02000019, Neisseriaceae

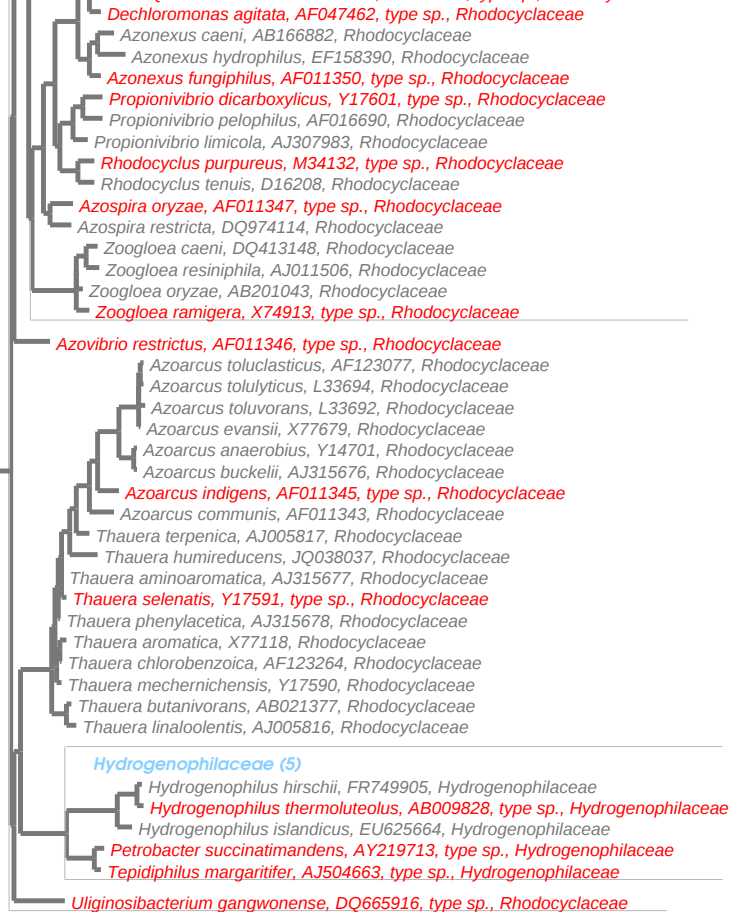
Neisseria iguanae, GU233442, Neisseriaceae

Neisseria lactamica, AJ239286, Neisseriaceae

Neisseria sicca, ACKO02000016, Neisseriaceae

Neisseria flavescens, L06168, Neisseriaceae





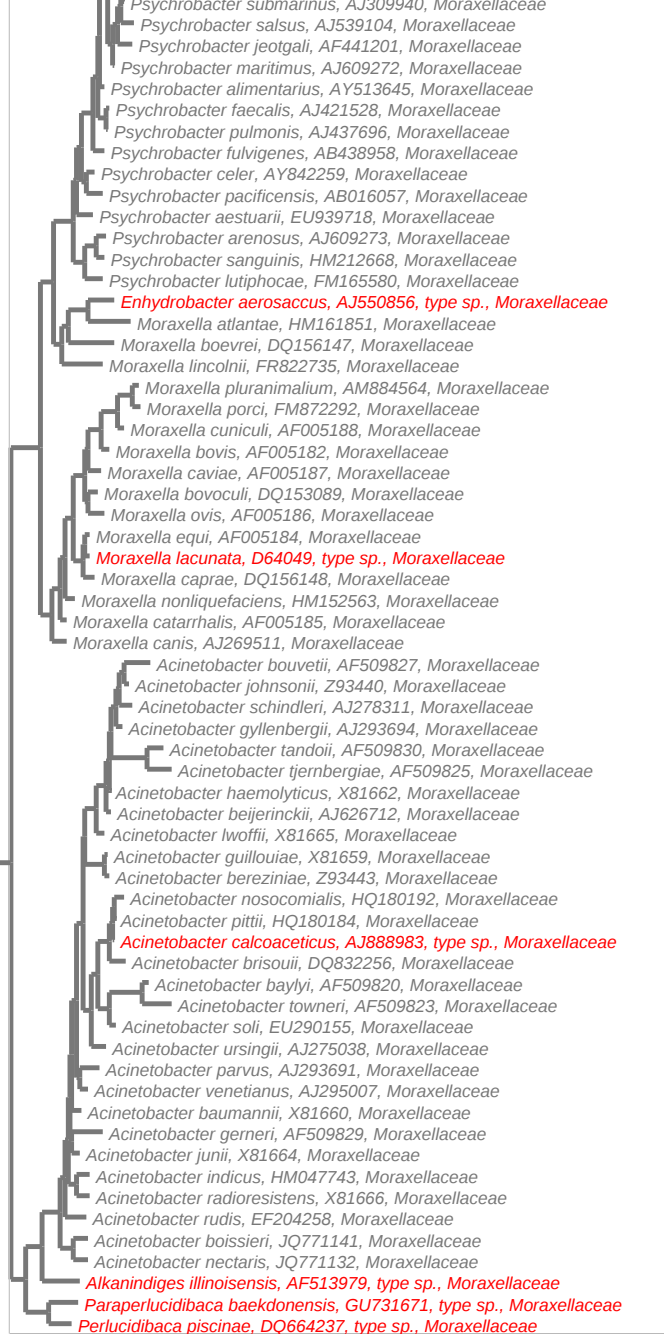
Xanthomonadaceae (140)





Moraxellaceae (83)

- Psychrobacter immobilis*, U39399, type sp., Moraxellaceae
- Psychrobacter phenylpyruvicus*, U46144, Moraxellaceae
- Psychrobacter okhotskensis*, AB094794, Moraxellaceae
- Psychrobacter cryohalolentis*, AY660685, Moraxellaceae
- Psychrobacter cibarius*, AY639871, Moraxellaceae
- Psychrobacter urativorans*, AJ609555, Moraxellaceae
- Psychrobacter glacincola*, AJ312213, Moraxellaceae
- Psychrobacter frigidicola*, AJ609556, Moraxellaceae
- Psychrobacter luti*, AJ430828, Moraxellaceae
- Psychrobacter arcticus*, AY444822, Moraxellaceae
- Psychrobacter fozii*, AJ430827, Moraxellaceae
- Psychrobacter adeliensis*, HE654007, Moraxellaceae
- Psychrobacter piscatorii*, AB453700, Moraxellaceae
- Psychrobacter nivimaris*, AJ313425, Moraxellaceae
- Psychrobacter proteolyticus*, AJ272303, Moraxellaceae
- Psychrobacter aquimaris*, AY722804, Moraxellaceae
- Psychrobacter namhaensis*, AY722805, Moraxellaceae
- Psychrobacter aquaticus*, AJ584833, Moraxellaceae
- Psychrobacter vallis*, AJ584832, Moraxellaceae
- Psychrobacter marincola*, AJ309941, Moraxellaceae



Sinobacteraceae (14)

- Nevskia ramosa, AJ001010, type sp., Nevskiaceae**
- Nevskia persephonica, JQ710441, Nevskiaceae
- Nevskia soli, EF178286, Nevskiaceae
- Nevskia terrae, GQ845011, Nevskiaceae
- Hydrocarboniphaga daqingensis, EU313812, Nevskiaceae
- Hydrocarboniphaga effusa, AY363245, type sp., Nevskiaceae**
- Panacagrimonas perspica, AB257720, type sp., Xanthomonadaceae**
- Solimonas soli, EF067861, type sp., Solimonadaceae**
- Solimonas variicoloris, AJ555478, Solimonadaceae
- Solimonas flava, EF154515, Solimonadaceae
- Solimonas aquatica, EU303271, Solimonadaceae
- Fontimonas thermophila, JN415769, type sp., Solimonadaceae**
- Alkanibacter difficilis, AJ313020, type sp., Unclassified Xanthomonadales**
- Steroidobacter denitrificans, EF605262, type sp., Unclassified Xanthomonadales**

Salinisphaeraceae (6)

- Salinisphaera dokdonensis, EF988634, Salinisphaeraceae
- Salinisphaera shabanensis, AJ421425, type sp., Salinisphaeraceae**
- Salinisphaera hydrothermalis, EU740416, Salinisphaeraceae
- Salinisphaera halophila, JN020587, Salinisphaeraceae
- Salinisphaera orenii, HM137558, Salinisphaeraceae
- Salinisphaera japonica, AB735546, Salinisphaeraceae

Halothiobacillaceae (6)

- Halothiobacillus halophilus, U58020, Halothiobacillaceae
- Halothiobacillus hydrothermalis, M90662, Halothiobacillaceae
- Thioalkalibacter halophilus, EU124668, type sp., Halothiobacillaceae**
- Halothiobacillus kellyi, AF170419, Halothiobacillaceae
- Thiofaba tepidiphila, AB304258, type sp., Halothiobacillaceae**
- Thiovirga sulfuroxydans, AB118236, type sp., Halothiobacillaceae**

Cardiobacteriaceae (5)

- Suttonella indologenes, M35015, type sp., Cardiobacteriaceae**
- Suttonella ornithocola, AJ717394, Cardiobacteriaceae
- Dichelobacter nodosus, JN175347, type sp., Cardiobacteriaceae**
- Cardiobacterium hominis, M35014, type sp., Cardiobacteriaceae**
- Cardiobacterium valvarum, AF506987, Cardiobacteriaceae

- Ignatzschineria indica, EU008088, Xanthomonadaceae
- Ignatzschineria ureiclastica, EU008089, Xanthomonadaceae



- Acidithiobacillus thiooxidans, Y11596, type sp., Acidithiobacillaceae
- Acidithiobacillus ferrooxidans, AF376020, Acidithiobacillaceae
- Acidithiobacillus caldus, Z29975, Acidithiobacillaceae
- Thermithiobacillus tepidarius, AJ459801, type sp., Thermithiobacillaceae
- Thiohalorhabdus denitrificans, DQ469582, type sp., Unclassified Gammaproteobacteria

Alphaproteobacteria (1210)

Bradyrhizobiaceae (35)

- Rhodopseudomonas faecalis, AF123085, Bradyrhizobiaceae
- Rhodopseudomonas rhenobacensis, AB087719, Bradyrhizobiaceae
- Rhodopseudomonas pseudopalustris, AB498818, Bradyrhizobiaceae
- Rhodopseudomonas parapalustris, AM947938, Bradyrhizobiaceae
- Tardiphaga robiniae, FR753034, type sp., Bradyrhizobiaceae
- Rhodopseudomonas palustris, AB498815, type sp., Bradyrhizobiaceae
- Rhodopseudomonas pentotheneatexigens, FR851927, Bradyrhizobiaceae
- Rhodopseudomonas thermotolerans, FR851928, Bradyrhizobiaceae
- Rhodopseudomonas harwoodiae, FN813512, Bradyrhizobiaceae
- Afipia felis, M65248, type sp., Bradyrhizobiaceae
- Pseudomonas carboxydohydrogena, AB021393, Pseudomonadaceae
- Oligotropha carboxidovorans, FR733697, type sp., Bradyrhizobiaceae
- Afipia clevelandensis, M69186, Bradyrhizobiaceae
- Nitrobacter alkalicus, AF069956, Bradyrhizobiaceae
- Nitrobacter winogradskyi, CP000115, type sp., Bradyrhizobiaceae
- Nitrobacter vulgaris, AM114522, Bradyrhizobiaceae
- Nitrobacter hamburgensis, L11663, Bradyrhizobiaceae
- Bradyrhizobium oligotrophicum, JQ619230, Bradyrhizobiaceae
- Bradyrhizobium denitrificans, AF338176, Bradyrhizobiaceae
- Bradyrhizobium betae, AY372184, Bradyrhizobiaceae
- Bradyrhizobium iriomotense, AB300992, Bradyrhizobiaceae
- Bradyrhizobium huanghuaihaiense, HQ231463, Bradyrhizobiaceae
- Bradyrhizobium liaoningense, AF208513, Bradyrhizobiaceae
- Bradyrhizobium yuanmingense, AF193818, Bradyrhizobiaceae
- Bradyrhizobium daqingense, HQ231274, Bradyrhizobiaceae
- Bradyrhizobium canariense, AJ558025, Bradyrhizobiaceae
- Bradyrhizobium japonicum, U69638, type sp., Bradyrhizobiaceae
- Rhizobium lupini, X87273, Rhizobiaceae
- Afipia birgiae, AF288304, Bradyrhizobiaceae
- Afipia broomeae, U87759, Bradyrhizobiaceae
- Afipia massiliensis, AY029562, Bradyrhizobiaceae
- Bradyrhizobium jicamae, AY624134, Bradyrhizobiaceae
- Bradyrhizobium elkanii, U35000, Bradyrhizobiaceae
- Bradyrhizobium pachyrrhizi, AY624135, Bradyrhizobiaceae
- Bradyrhizobium lablabi, GU433448, Bradyrhizobiaceae

Pseudolabrys taiwanensis, DQ062742, type sp., Xanthobacteraceae

- Labrys neptuniae, DQ417335, Xanthobacteraceae
- Labrys portucalensis, AY362040, Xanthobacteraceae
- Labrys methylaminiphilus, AB236172, Xanthobacteraceae
- Labrys monachus, AJ535707, type sp., Xanthobacteraceae
- Labrys miyagiensis, AB236170, Xanthobacteraceae
- Labrys okinawensis, AB236169, Xanthobacteraceae
- Labrys wisconsinensis, EF382666, Xanthobacteraceae

Beijerinckiaceae (16)

- Beijerinckia indica subsp. lacticogenes, AJ563931, Beijerinckiaceae
- Beijerinckia indica subsp. indica, CP001016, type sp., Beijerinckiaceae
- Beijerinckia dextrii subsp. venezuelae, AJ563934, Beijerinckiaceae
- Beijerinckia dextrii subsp. dextrii, AJ563933, Beijerinckiaceae
- Beijerinckia mobilis, AJ563932, Beijerinckiaceae
- Beijerinckia doebereineriae, EU401905, Beijerinckiaceae
- Methyloferula stellata, FR686343, type sp., Beijerinckiaceae
- Rhodoblastus acidophilus, FR733696, type sp., Bradyrhizobiaceae
- Rhodoblastus sphagnicola, AM040096, Bradyrhizobiaceae
- Methylovirgula ligni, FM252034, type sp., Beijerinckiaceae
- Methylocapsa acidiphila, AJ278726, type sp., Beijerinckiaceae
- Methylocapsa aurea, FN433469, Beijerinckiaceae
- Methylocella palustris, Y17144, type sp., Beijerinckiaceae
- Methylosorusula polaris, EU586035, type sp., Beijerinckiaceae
- Methylocella silvestris, AJ491847, Beijerinckiaceae
- Methylocella tundrae, AJ555244, Beijerinckiaceae

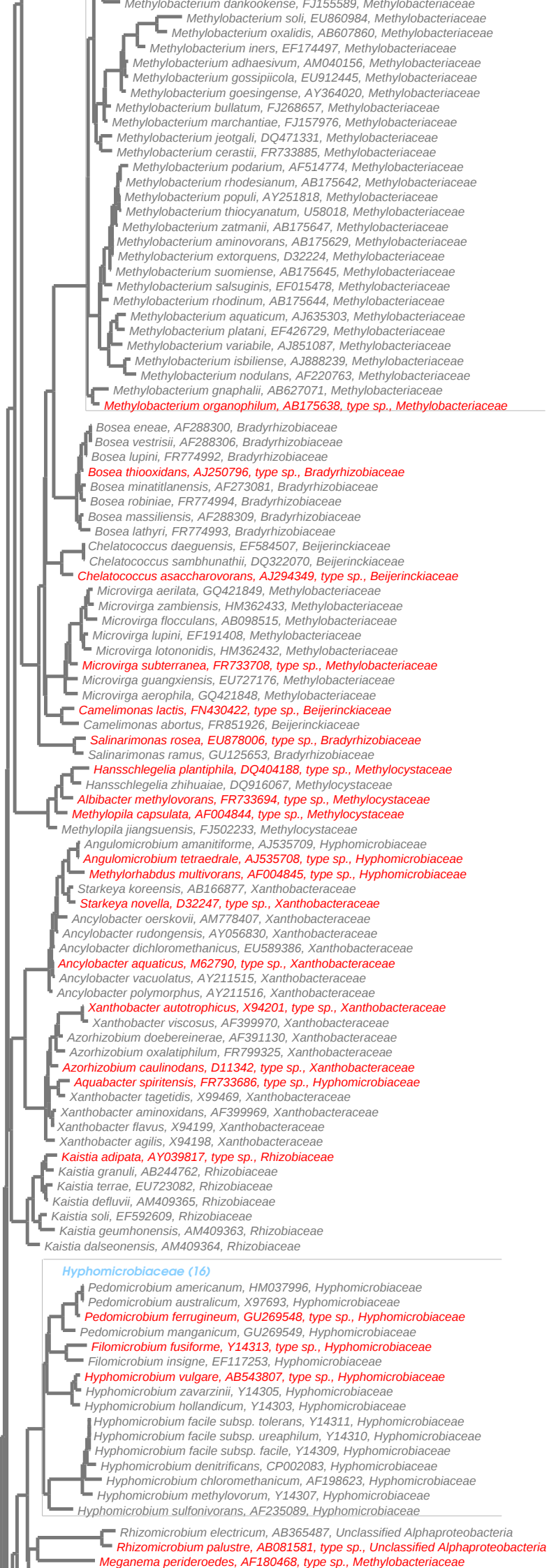
- Rhodoplanes piscinae, AM712913, Hyphomicrobiaceae
- Rhodoplanes serenus, AB087717, Hyphomicrobiaceae
- Rhodoplanes elegans, D25311, Hyphomicrobiaceae
- Rhodoplanes pokkaliisoli, FM202448, Hyphomicrobiaceae
- Rhodoplanes roseus, D25313, type sp., Hyphomicrobiaceae
- Blastochloris gulmargensis, AM502287, Hyphomicrobiaceae
- Blastochloris viridis, AF084495, type sp., Hyphomicrobiaceae
- Blastochloris sulfoviridis, D86514, Hyphomicrobiaceae

Methylocystaceae (8)

- Methylosinus sporium, Y18946, Methylocystaceae
- Methylosinus trichosporium, Y18947, type sp., Methylocystaceae
- Methylocystis parvus, Y18945, type sp., Methylocystaceae
- Methylocystis echinoides, AJ458473, Methylocystaceae
- Methylocystis bryophila, FN422003, Methylocystaceae
- Methylocystis hirsuta, DQ364433, Methylocystaceae
- Methylocystis rosea, AJ414656, Methylocystaceae
- Methylocystis heyeri, AM283543, Methylocystaceae

Methylobacteriaceae (41)

- Methylobacterium fujisawaense, AJ250801, Methylobacteriaceae
- Methylobacterium oryzae, AY683045, Methylobacteriaceae
- Methylobacterium phyllosphaerae, EF126746, Methylobacteriaceae
- Methylobacterium longum, FN868949, Methylobacteriaceae
- Methylobacterium tardum, AB252208, Methylobacteriaceae
- Methylobacterium radiotolerans, D32227, Methylobacteriaceae
- Methylobacterium aerolatum, EF174498, Methylobacteriaceae
- Methylobacterium persicinum, AB252202, Methylobacteriaceae
- Methylobacterium komagatae, AB252201, Methylobacteriaceae
- Methylobacterium brachiatum, AB175649, Methylobacteriaceae
- Methylobacterium mesophilicum, AB175636, Methylobacteriaceae
- Methylobacterium gregans, AB252200, Methylobacteriaceae
- Methylobacterium hispanicum, AJ635304, Methylobacteriaceae



Geminicoccus roseus, AM403172, type sp., Unclassified Alphaproteobacteria
Pleomorphomonas koreensis, AB127972, Methylocystaceae
Pleomorphomonas oryzae, AB159680, type sp., Methylocystaceae
Prosthecomicrobium hirschii, HM037994, Hyphomicrobiaceae
Rhodomicrobium vannielii, FN666247, type sp., Hyphomicrobiaceae
Agaricola taiwanensis, FJ594057, type sp., Rhodobacteraceae
Prosthecomicrobium pneumaticum, AB017203, type sp., Hyphomicrobiaceae
Amorphus coralli, DQ097300, type sp., Unclassified Rhizobiales
Amorphus orientalis, FJ998414, Unclassified Rhizobiales

Caulobacteraceae (43)

Brevundimonas poindexterae, AJ227797, Caulobacteraceae
Brevundimonas staleyii, AJ227798, Caulobacteraceae
Brevundimonas bullata, D12785, Caulobacteraceae
Brevundimonas lenta, EF363713, Caulobacteraceae
Brevundimonas subvibrioides, AJ227784, Caulobacteraceae
Brevundimonas basaltis, EU143355, Caulobacteraceae
Brevundimonas bacteroides, AJ227782, Caulobacteraceae
Brevundimonas variabilis, AJ227783, Caulobacteraceae
Brevundimonas alba, AJ227785, Caulobacteraceae
Brevundimonas viscosa, HM777012, Caulobacteraceae
Brevundimonas kwangchunensis, AY971368, Caulobacteraceae
Brevundimonas aveniformis, DQ372984, Caulobacteraceae
Brevundimonas faecalis, FR775448, Caulobacteraceae
Brevundimonas terrae, DQ335215, Caulobacteraceae
Brevundimonas diminuta, AB021415, type sp., Caulobacteraceae
Brevundimonas vancouverii, AJ227779, Caulobacteraceae
Brevundimonas naejangsensis, FJ544245, Caulobacteraceae
Brevundimonas halotolerans, M83810, Caulobacteraceae
Asticcacaulis benevestitus, AM087199, Caulobacteraceae
Asticcacaulis taihuensis, AY500141, Caulobacteraceae
Asticcacaulis biprotheticum, AJ247193, Caulobacteraceae
Asticcacaulis excentricus, AJ247194, type sp., Caulobacteraceae
Brevundimonas mediterranea, AJ227801, Caulobacteraceae
Streptomyces longisporoflavus, DQ442520, Streptomycetaceae
Brevundimonas intermedia, AJ227786, Caulobacteraceae
Brevundimonas nasdae, AB071954, Caulobacteraceae
Brevundimonas vesicularis, AJ227780, Caulobacteraceae
Brevundimonas aurantiaca, AJ227787, Caulobacteraceae
Brevundimonas abyssalis, AB688113, Caulobacteraceae
Caulobacter fusiformis, AJ227759, Caulobacteraceae
Caulobacter ginsengisoli, AB271055, Caulobacteraceae
Caulobacter segnis, AB023427, Caulobacteraceae
Caulobacter vibrioides, AJ009957, type sp., Caulobacteraceae
Caulobacter mirabilis, AJ227774, Caulobacteraceae
Caulobacter henricii, AJ227758, Caulobacteraceae
Phenylobacterium haematophilum, AJ244650, Caulobacteraceae
Phenylobacterium conjunctum, AJ227767, Caulobacteraceae
Phenylobacterium falsum, AJ717391, Caulobacteraceae
Phenylobacterium immobile, Y18216, type sp., Caulobacteraceae
Phenylobacterium muchangponense, HM047736, Caulobacteraceae
Phenylobacterium koreense, AB166881, Caulobacteraceae
Phenylobacterium composti, EU022524, Caulobacteraceae
Phenylobacterium luteiforme, AY534887, Caulobacteraceae

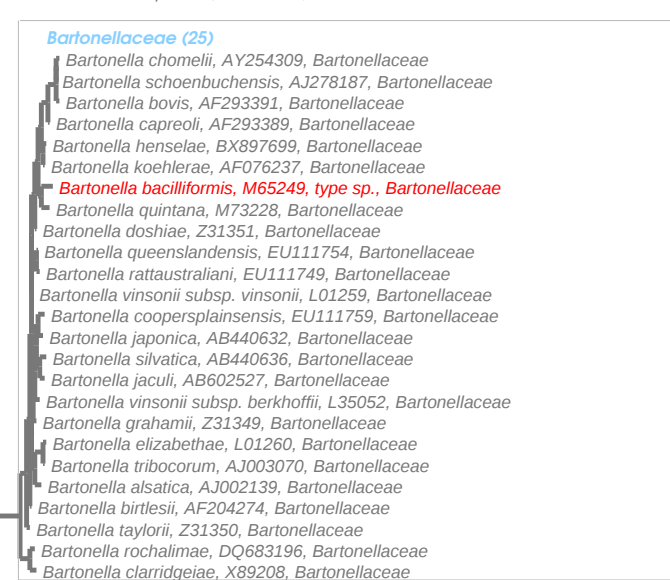
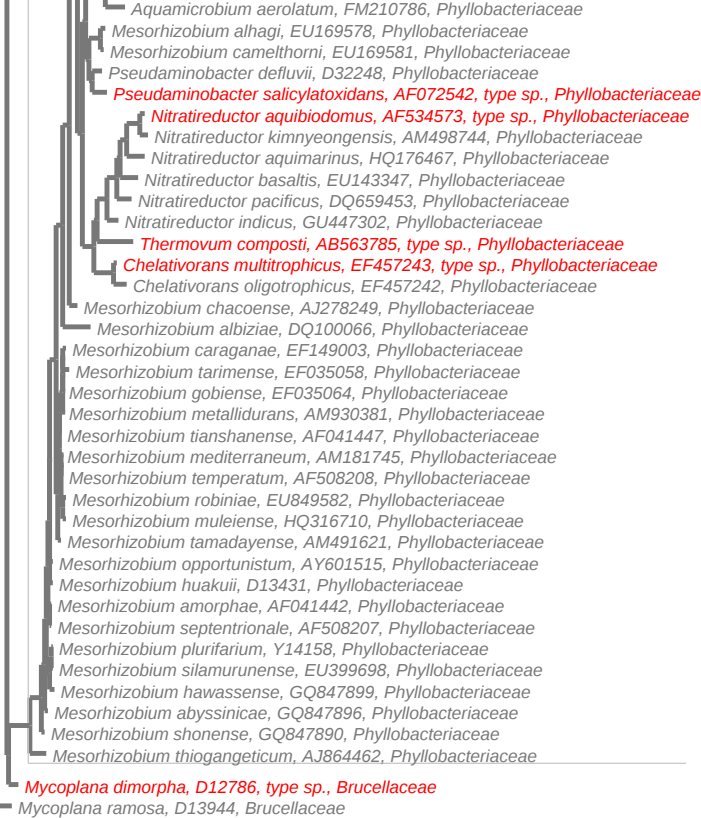
Pseudovibrio ascidiaceicola, AB175663, Rhodobacteraceae
Pseudovibrio axinellae, JN167515, Rhodobacteraceae
Pseudovibrio japonicus, AB246748, Rhodobacteraceae
Pseudovibrio denitrificans, AY486423, type sp., Rhodobacteraceae
Nesiobacter exalbescens, AF513441, type sp., Rhodobacteraceae
Roseibium denhamense, D85832, type sp., Rhodobacteraceae
Roseibium hamelinense, D85836, Rhodobacteraceae
Labrenzia alexandrii, AJ582083, type sp., Rhodobacteraceae
Labrenzia alba, AJ878875, Rhodobacteraceae
Labrenzia marina, AY628423, Rhodobacteraceae
Labrenzia aggregata, AAUW0100023, Rhodobacteraceae
Pannonibacter phragmitetus, AJ400704, type sp., Rhodobacteraceae
Pannonibacter indicus, EF608175, Rhodobacteraceae
Stappia indica, EU726271, Rhodobacteraceae
Stappia stellulata, D88525, type sp., Rhodobacteraceae
Stappia taiwanensis, FR828537, Rhodobacteraceae

Vasilyevaea enhydra, GQ221761, type sp., Unclassified Rhizobiales
Vasilyevaea mishustinii, FJ560749, Unclassified Rhizobiales
Devosia insulae, EF012357, Hyphomicrobiaceae
Devosia psychrophila, GU441678, Hyphomicrobiaceae
Devosia glacialis, HM474794, Hyphomicrobiaceae
Devosia chinhatensis, EF433462, Hyphomicrobiaceae
Devosia yakushimensis, AB361068, Hyphomicrobiaceae
Devosia crocina, EF433461, Hyphomicrobiaceae
Devosia soli, DQ303125, Hyphomicrobiaceae
Devosia riboflavina, AJ549086, type sp., Hyphomicrobiaceae
Devosia subaequoris, AM293857, Hyphomicrobiaceae
Devosia limi, AJ786801, Hyphomicrobiaceae
Devosia neptuniae, AF469072, Hyphomicrobiaceae
Devosia albogilva, EF433460, Hyphomicrobiaceae
Devosia geojensis, EF575560, Hyphomicrobiaceae
Maritalea myrionectae, EF988631, type sp., Hyphomicrobiaceae
Maritalea porphyrae, AB583774, Hyphomicrobiaceae
Maritalea mobilis, EU255260, type sp., Hyphomicrobiaceae
Cucumbacter marinus, EF211830, type sp., Hyphomicrobiaceae
Pelagibacterium halotolerans, EU709017, type sp., Hyphomicrobiaceae
Pelagibacterium luteolum, EF540455, Hyphomicrobiaceae
Pseudoxanthobacter soli, EF465533, type sp., Xanthobacteraceae

Rhizobiaceae and Aurantimonadaceae (77)

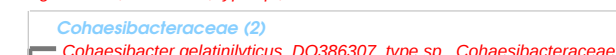
Rhizobium hainanense, U71078, Rhizobiaceae
Rhizobium multihospitum, EF035074, Rhizobiaceae
Rhizobium tropici, U89832, Rhizobiaceae
Rhizobium miluonense, EF061096, Rhizobiaceae
Rhizobium rubi, AY626395, Rhizobiaceae
Rhizobium lusitanum, AY738130, Rhizobiaceae
Rhizobium rhizogenes, D14501, Rhizobiaceae
Rhizobium leucaenae, X67234, Rhizobiaceae
Rhizobium vallis, FJ389677, Rhizobiaceae
Rhizobium tubonense, EU256434, Rhizobiaceae
Rhizobium leguminosarum, U29386, type sp., Rhizobiaceae





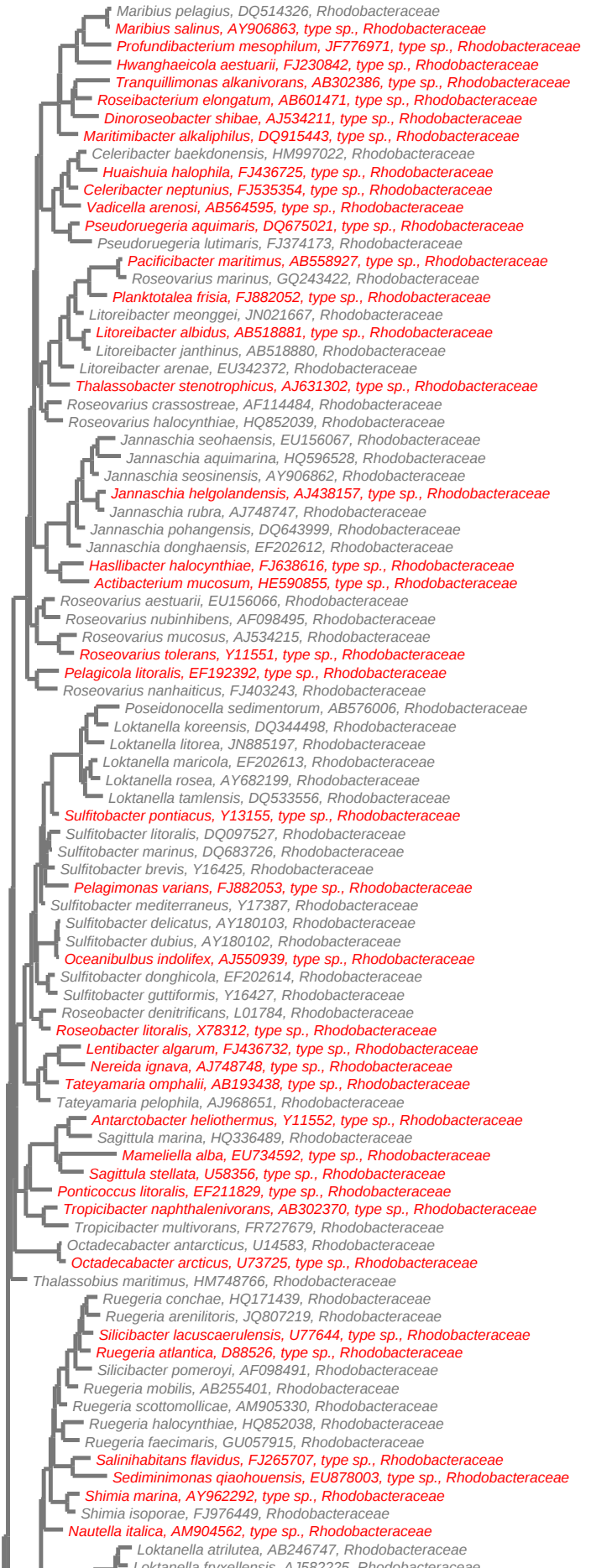
Rhizobium sphaerophysae, FJ154088, Rhizobiaceae

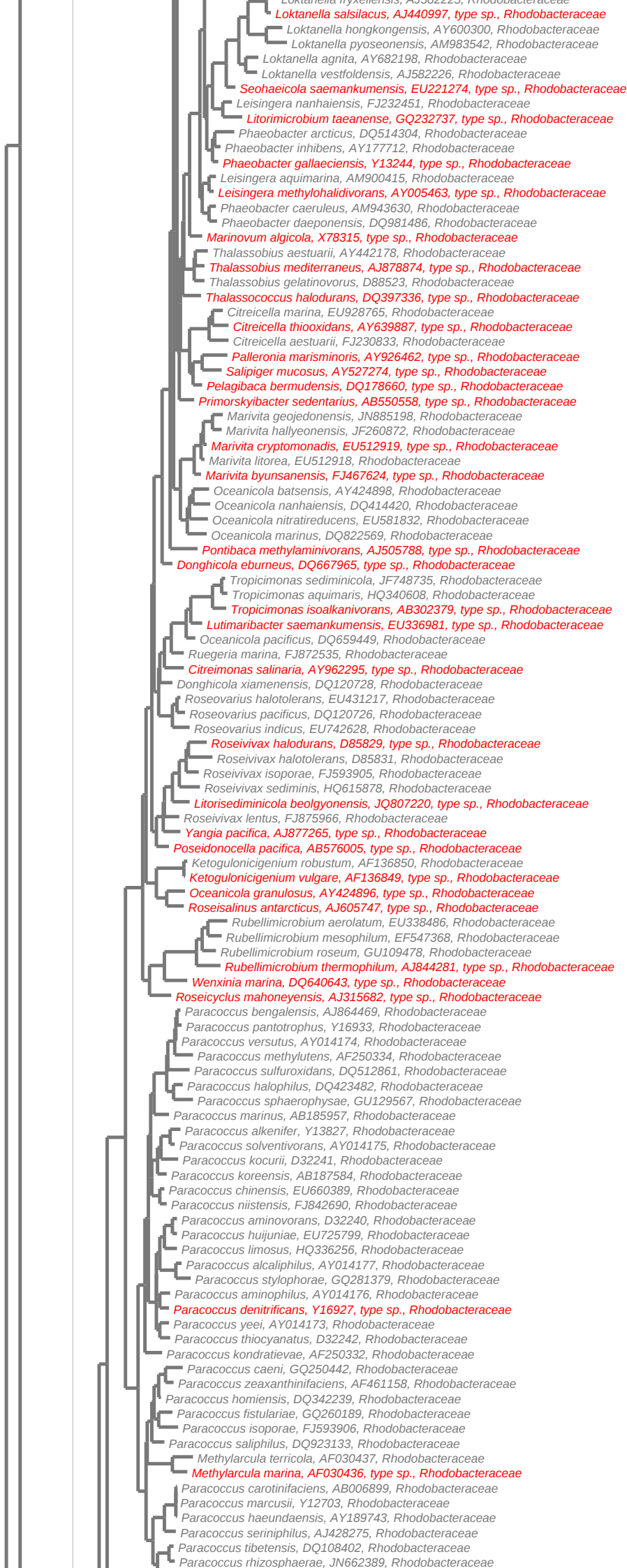
Daeguia caeni, EF532794, type sp., Brucellaceae

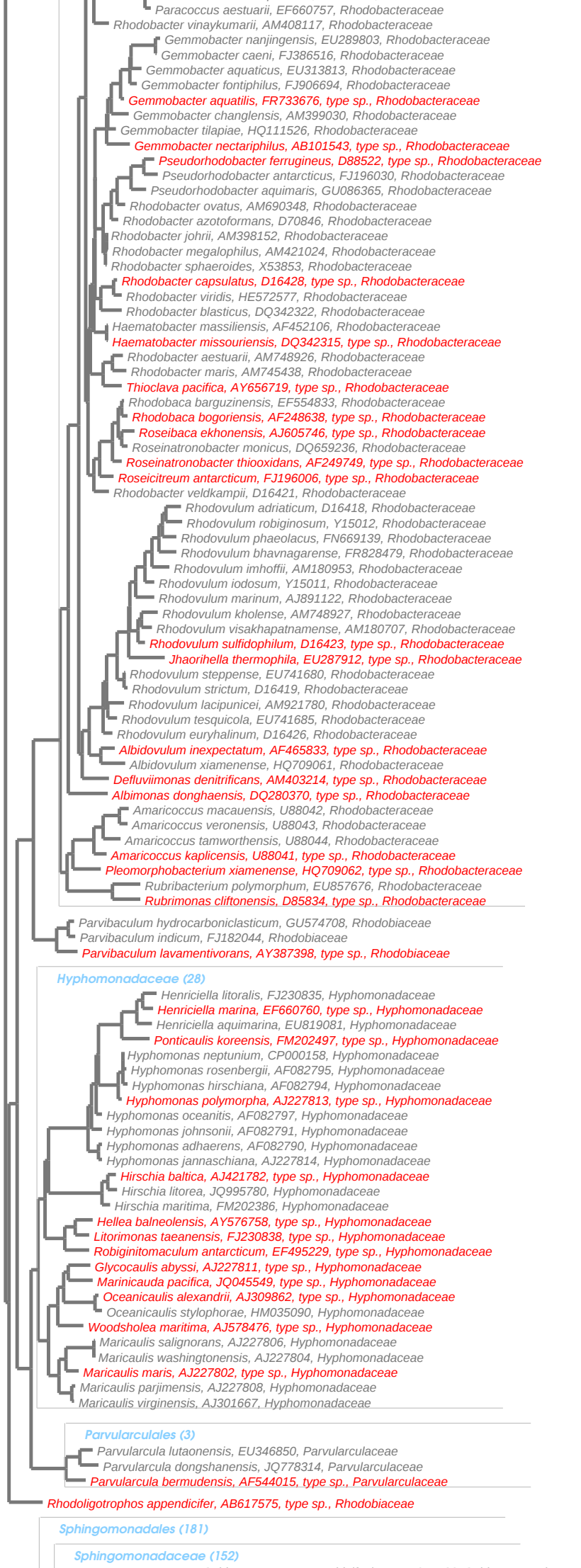


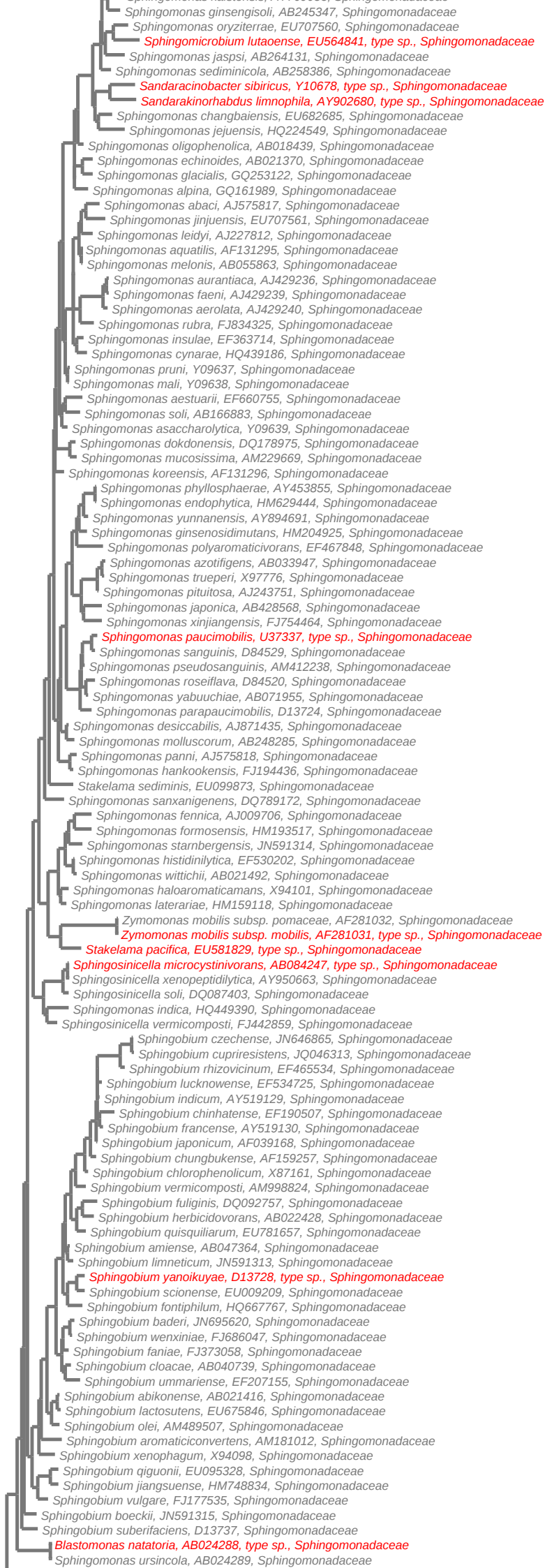


Rhodobacteraceae (253)









Novosphingobium lentum, AJ303009, Sphingomonadaceae
Novosphingobium tardaugens, AB070237, Sphingomonadaceae
Novosphingobium hassiacum, AJ416411, Sphingomonadaceae
Novosphingobium nitrogenifigens, DQ448852, Sphingomonadaceae
Novosphingobium stygium, AB025013, Sphingomonadaceae
Novosphingobium taihuense, AY500142, Sphingomonadaceae
Novosphingobium aromaticivorans, CP000248, Sphingomonadaceae
Novosphingobium subterraneum, AB025014, Sphingomonadaceae
Sphingomonas capsulata, D16147, type sp., Sphingomonadaceae
Novosphingobium acidiphilum, EU336977, Sphingomonadaceae
Novosphingobium rosa, D13945, Sphingomonadaceae
Novosphingobium sediminicola, FJ177534, Sphingomonadaceae
Novosphingobium naphthalenivorans, AB177883, Sphingomonadaceae
Novosphingobium resinovorum, EF029110, Sphingomonadaceae
Novosphingobium barchaimii, JN695619, Sphingomonadaceae
Novosphingobium lindaniclasticum, JN687581, Sphingomonadaceae
Novosphingobium soli, FJ425737, Sphingomonadaceae
Sphingopyxis ummariensis, EF424391, Sphingomonadaceae
Sphingopyxis terrae, D13727, Sphingomonadaceae
Sphingomonas adhaesiva, D13722, Sphingomonadaceae
Sphingopyxis panaciterrulae, EU075217, Sphingomonadaceae
Sphingopyxis indica, EF494193, Sphingomonadaceae
Sphingopyxis granuli, AY563034, Sphingomonadaceae
Sphingopyxis witflariensis, AJ416410, Sphingomonadaceae
Sphingopyxis panaciterrae, AB245353, Sphingomonadaceae
Sphingopyxis chilensis, AF367204, Sphingomonadaceae
Sphingopyxis bauzanensis, GQ131578, Sphingomonadaceae
Sphingopyxis soli, FJ599671, Sphingomonadaceae
Sphingopyxis taejonensis, AF131297, Sphingomonadaceae
Sphingopyxis ginsengisoli, AB245343, Sphingomonadaceae
Sphingopyxis macrogoltabida, D13723, Sphingomonadaceae
Sphingopyxis alaskensis, Z73631, Sphingomonadaceae
Sphingorhabdus litoris, DQ781321, Sphingomonadaceae
Sphingorhabdus marina, DQ781320, Sphingomonadaceae
Sphingorhabdus flavimaris, AY554010, Sphingomonadaceae
Parasphingopyxis lamellibrachiae, AB524074, type sp., Sphingomonadaceae
Sphingopyxis baekryungensis, AY608604, Sphingomonadaceae
Altererythrobacter xinjiangensis, HM028673, Erythrobacteraceae
Altererythrobacter dongtanensis, GU166344, Erythrobacteraceae
Altererythrobacter troitsensis, AY676115, Erythrobacteraceae
Croceicoccus marinus, EF623998, type sp., Erythrobacteraceae
Novosphingobium pentaromativorans, AF502400, Sphingomonadaceae
Novosphingobium mathurensis, EF424403, Sphingomonadaceae
Novosphingobium panipatense, EF424402, Sphingomonadaceae
Novosphingobium indicum, EF549586, Sphingomonadaceae

Erythrobacteraceae (27)

Erythrobacter marinus, HQ117934, Erythrobacteraceae
Erythrobacter gangjinensis, EU428782, Erythrobacteraceae
Erythrobacter seohaensis, AY562219, Erythrobacteraceae
Erythrobacter citreus, AF118020, Erythrobacteraceae
Erythrobacter pelagi, HQ203045, Erythrobacteraceae
Erythrobacter aquimaris, AY461441, Erythrobacteraceae
Erythrobacter longus, AF465835, type sp., Erythrobacteraceae
Erythrobacter nanhaisediminis, FJ654473, Erythrobacteraceae
Erythrobacter vulgaris, AY706935, Erythrobacteraceae
Erythrobacter flavus, AF500004, Erythrobacteraceae
Erythrobacter gaetbuli, AY562220, Erythrobacteraceae
Porphyrobacter sanguineus, AB021493, Erythrobacteraceae
Porphyrobacter tepidarius, AB033328, Erythrobacteraceae
Porphyrobacter neustonensis, AB033327, type sp., Erythrobacteraceae
Porphyrobacter cryptus, AF465834, Erythrobacteraceae
Porphyrobacter dokdonensis, DQ011529, Erythrobacteraceae
Porphyrobacter donghaensis, AY559428, Erythrobacteraceae
Erythromicrobium ramosum, AF465837, type sp., Erythrobacteraceae
Erythrobacter litoralis, AF465836, Erythrobacteraceae
Altererythrobacter marinus, EU726272, Erythrobacteraceae
Altererythrobacter marensis, FM177586, Erythrobacteraceae
Altererythrobacter ishigakiensis, AB363004, Erythrobacteraceae
Erythrobacter jejuensis, DQ453142, Erythrobacteraceae
Altererythrobacter indicus, DQ399262, Erythrobacteraceae
Altererythrobacter luteolus, AY739662, Erythrobacteraceae
Altererythrobacter gangjinensis, JF751048, Erythrobacteraceae
Altererythrobacter epoxidivorans, DQ304436, type sp., Erythrobacteraceae
Altererythrobacter aestuarii, FJ997597, Erythrobacteraceae
Altererythrobacter namhicola, FJ935793, Erythrobacteraceae

Kordiimonadales (4)

Kordiimonas gwangyangensis, AY682384, type sp., Kordiimonadaceae
Kordiimonas aestuarii, JF714701, Kordiimonadaceae
Kordiimonas aquimaris, GU289640, Kordiimonadaceae
Kordiimonas lacus, FJ847942, Kordiimonadaceae

Eilatimonas milleporae, HQ288781, type sp., Unclassified Alphaproteobacteria
Rhodothalassium salexigens, D14431, type sp., Rhodobacteraceae

Sneathiellales (2)

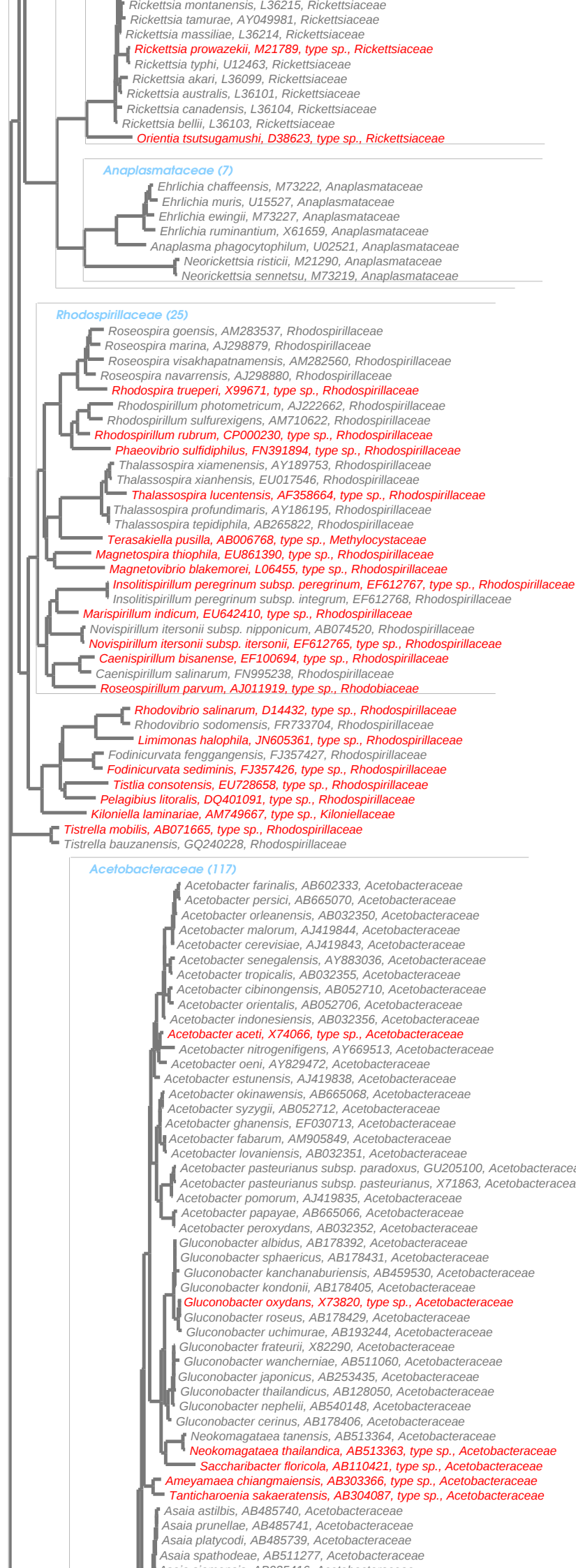
Sneathiella chinensis, DQ219355, type sp., Sneathiellaceae
Sneathiella glossodoripedis, AB289439, Sneathiellaceae

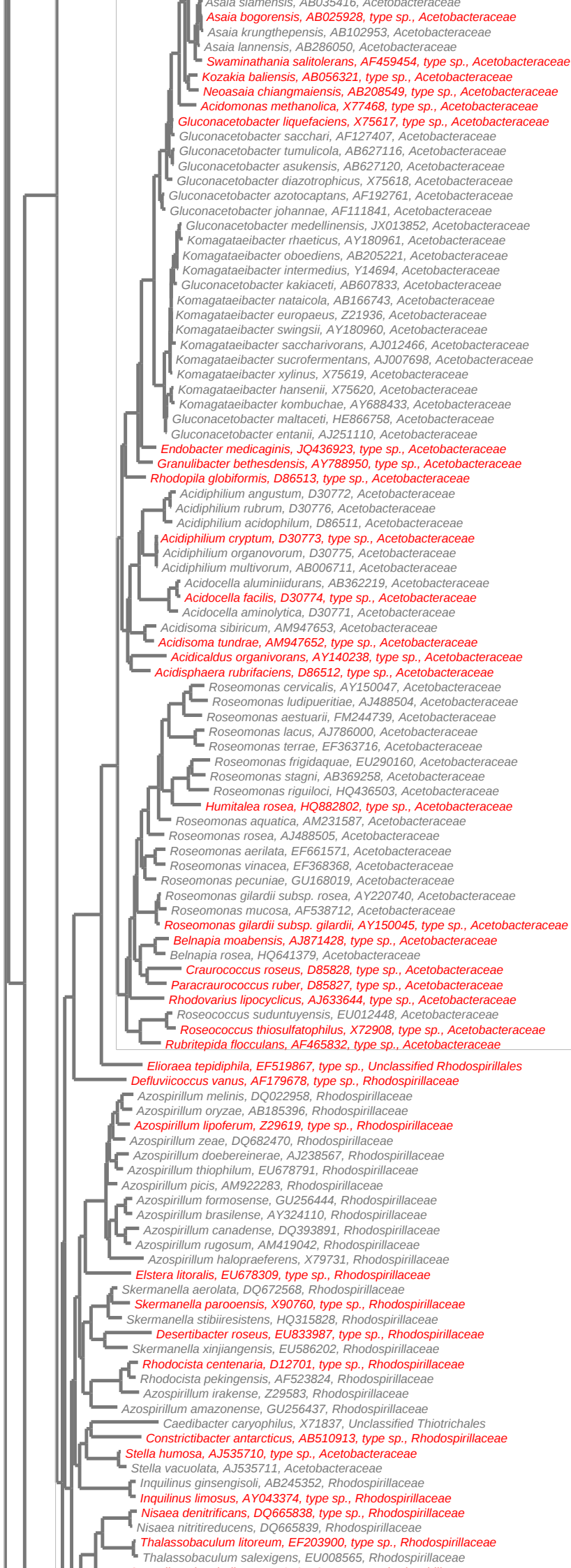
Oceanibacterium hippocampi, FN687912, type sp., Sneathiellaceae
Ferrovibrio denitrificans, GQ365620, type sp., Rhodospirillaceae

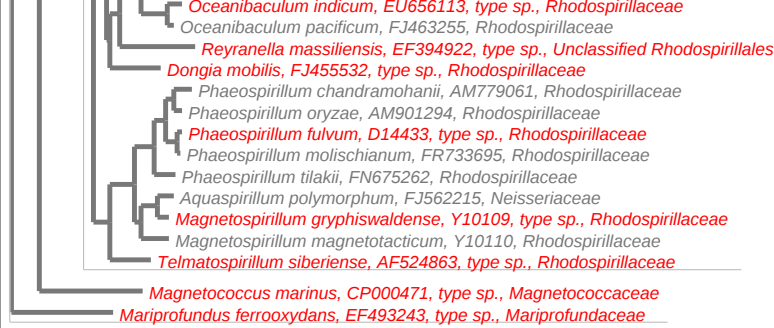
Rickettsiales (27)

Rickettsiaceae (20)

Rickettsia honei, U17645, Rickettsiaceae
Rickettsia rickettsii, L36217, Rickettsiaceae
Rickettsia sibirica, D38628, Rickettsiaceae
Rickettsia conorii, AF541999, Rickettsiaceae
Rickettsia parkeri, L36673, Rickettsiaceae
Rickettsia heilongjiangensis, AF178037, Rickettsiaceae
Rickettsia raoultii, DQ365810, Rickettsiaceae
Rickettsia asiatica, AF394906, Rickettsiaceae
Rickettsia aeschlimannii, U74757, Rickettsiaceae
Rickettsia rhipicephali, L36216, Rickettsiaceae







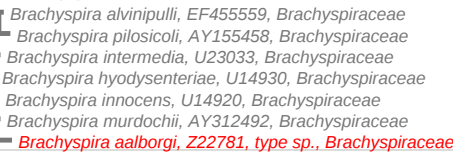
Spirochaetes (86)

Spirochaetaceae (56)



Exilispira thermophila, AB364473, type sp., Unclassified Spirochaetales

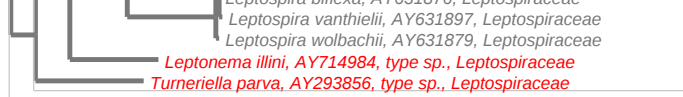
Brachyspiraceae (7)



Brevinema andersonii, GU993264, type sp., Brevinemataceae

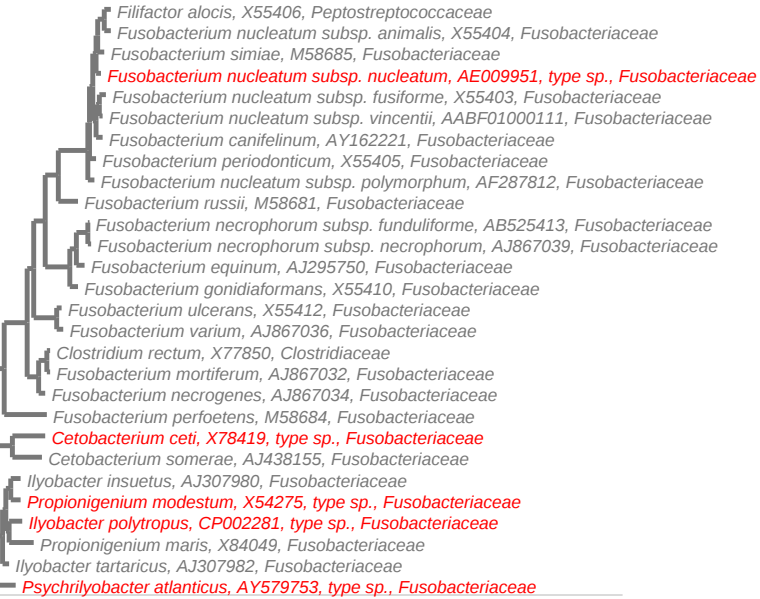
Leptospiraceae (21)



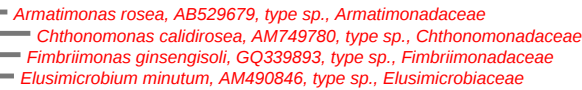
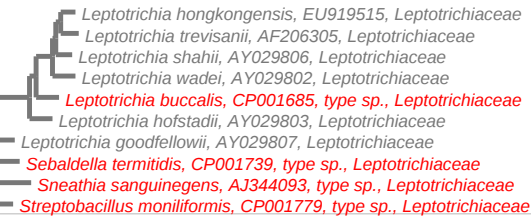


Fusobacteria (38)

Fusobacteriaceae (28)



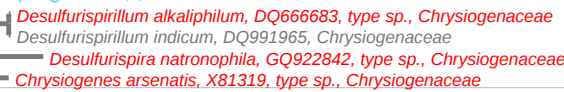
Leptotrichiaceae (10)



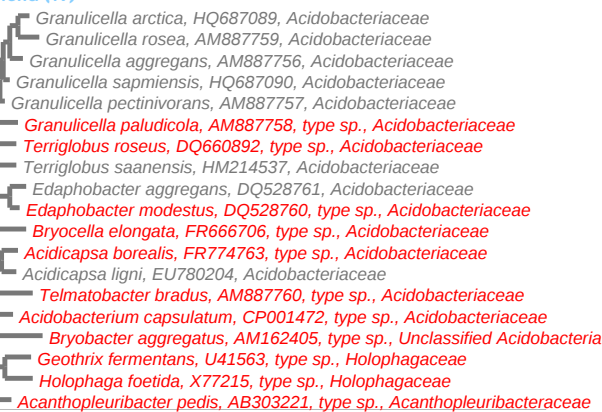
Deferribacteres (10)



Chrysiogenetes (4)



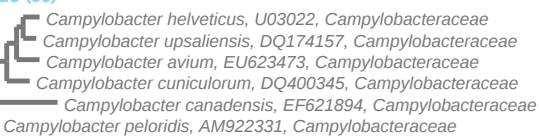
Acidobacteria (19)

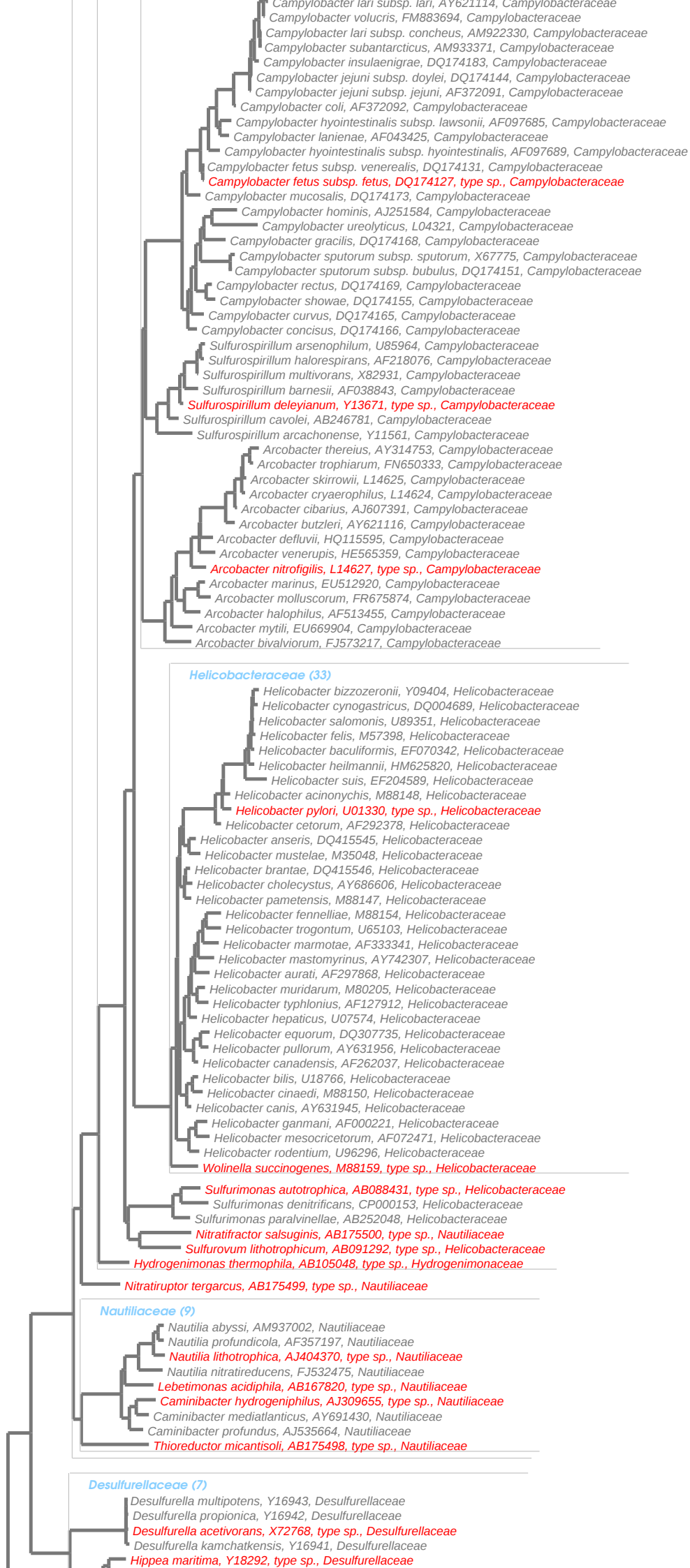


Epsilonproteobacteria (99)

Campylobacterales (89)

Campylobacteraceae (50)





Hippea jasoniae, FR754498, Desulfurellaceae
Hippea alviniae, FR754500, Desulfurellaceae

Desulfovibrionales (92)

Desulfovibrionaceae (67)

Desulfovibrio intestinalis, Y12254, Desulfovibrionaceae
Desulfovibrio simplex, FR733678, Desulfovibrionaceae
Desulfovibrio legallii, FJ225426, Desulfovibrionaceae
Desulfovibrio desulfuricans subsp. desulfuricans, AF192153, Desulfovibrionaceae
Desulfovibrio piger, AF192152, Desulfovibrionaceae
Bilophila wadsworthia, AJ867049, type sp., Desulfovibrionaceae
Lawsonia intracellularis, L15739, type sp., Desulfovibrionaceae
Desulfovibrio oxamicus, DQ122124, Desulfovibrionaceae
Desulfovibrio termitidis, X87409, Desulfovibrionaceae
Desulfovibrio longreachensis, Z24450, Desulfovibrionaceae
Desulfovibrio vulgaris, AF418179, Desulfovibrionaceae
Desulfovibrio cuneatus, X99501, Desulfovibrionaceae
Desulfovibrio litoralis, X99504, Desulfovibrionaceae
Desulfovibrio acrylicus, U32578, Desulfovibrionaceae
Desulfovibrio desulfuricans subsp. aestuarii, FJ655909, Desulfovibrionaceae
Desulfovibrio oceani subsp. oceani, FJ655907, Desulfovibrionaceae
Desulfovibrio oceani subsp. galataeae, FJ655908, Desulfovibrionaceae
Desulfovibrio marinisediminis, AB353727, Desulfovibrionaceae
Desulfovibrio psychrotolerans, AM418397, Desulfovibrionaceae
Desulfovibrio alaskensis, Y11984, Desulfovibrionaceae
Desulfovibrio vietnamensis, X93994, Desulfovibrionaceae
Desulfovibrio indonesiensis, Y09504, Desulfovibrionaceae
Desulfovibrio marinus, DQ365924, Desulfovibrionaceae
Desulfovibrio gabonensis, U31080, Desulfovibrionaceae
Desulfovibrio giganteus, FR749898, Desulfovibrionaceae
Desulfovibrio paquesii, AY726757, Desulfovibrionaceae
Desulfovibrio gigas, DQ447183, Desulfovibrionaceae
Desulfovibrio dechloracetivorans, AF230530, Desulfovibrionaceae
Desulfovibrio portus, AB110541, Desulfovibrionaceae
Desulfovibrio profundus, FR733706, Desulfovibrionaceae
Desulfovibrio piezophilus, HM852532, Desulfovibrionaceae
Desulfovibrio aespoeensis, X95230, Desulfovibrionaceae
Desulfovibrio tunisiensis, EF577029, Desulfovibrionaceae
Desulfovibrio halophilus, U48243, Desulfovibrionaceae
Desulfovibrio oxyclinae, U33316, Desulfovibrionaceae
Desulfovibrio capillatus, AY176773, Desulfovibrionaceae
Desulfovibrio gracilis, U53464, Desulfovibrionaceae
Desulfovibrio longus, AY359867, Desulfovibrionaceae
Desulfovibrio ferrireducens, DQ148944, Desulfovibrionaceae
Desulfovibrio frigidus, DQ148943, Desulfovibrionaceae
Desulfovibrio hydrothermalis, AF458778, Desulfovibrionaceae
Desulfovibrio salexigens, CP001649, Desulfovibrionaceae
Desulfovibrio zosterae, Y18049, Desulfovibrionaceae
Desulfovibrio bastinii, AY359868, Desulfovibrionaceae
Desulfovibrio arcticus, DQ296030, Desulfovibrionaceae
Desulfovibrio idahonensis, AJ582755, Desulfovibrionaceae
Desulfovibrio mexicanus, AF227984, Desulfovibrionaceae
Desulfovibrio aminophilus, AF067964, Desulfovibrionaceae
Desulfobaculum xiamenense, HQ697913, type sp., Desulfovibrionaceae
Desulfovibrio bizertensis, DQ422859, Desulfovibrionaceae
Desulfovibrio senexii, AF050100, Desulfovibrionaceae
Desulfococcus vexinensis, DQ841177, type sp., Desulfovibrionaceae
Desulfovibrio alkalitolerans, AY649785, Desulfovibrionaceae
Desulfovibrio carbinolicus, AY626035, Desulfovibrionaceae
Desulfovibrio magneticus, D43944, Desulfovibrionaceae
Desulfovibrio burkinensis, AF053752, Desulfovibrionaceae
Desulfovibrio aerotolerans, AY746987, Desulfovibrionaceae
Desulfovibrio carbinolophilus, DQ186200, Desulfovibrionaceae
Desulfovibrio fructosivorans, AF050101, Desulfovibrionaceae
Desulfovibrio marrakechensis, AM947130, Desulfovibrionaceae
Desulfovibrio alcoholivorans, AF053751, Desulfovibrionaceae
Desulfovibrio sulfodismutans, Y17764, Desulfovibrionaceae
Desulfovibrio inopinatus, AF177276, Desulfovibrionaceae
Desulfovibrio butyratiphilus, AB303305, Desulfovibrionaceae
Desulfovibrio putealis, AY574979, Desulfovibrionaceae
Desulfovibrio africanus subsp. uniflagellum, EU659693, Desulfovibrionaceae
Desulfovibrio africanus, X99236, Desulfovibrionaceae

Desulfonatronaceae (5)

Desulfonatronum lacustre, AF418171, type sp., Desulfonatronaceae
Desulfonatronum thiodismutans, AF373920, Desulfonatronaceae
Desulfonatronum thioautotrophicum, FJ469577, Desulfonatronaceae
Desulfonatronum thiosulfatophilum, FJ469578, Desulfonatronaceae
Desulfonatronum cooperativum, AY725424, Desulfonatronaceae

Desulfomicrobiaceae (7)

Desulfomicrobium apsheronum, U64865, Desulfomicrobiaceae
Desulfomicrobium escambiense, AJ277886, Desulfomicrobiaceae
Desulfomicrobium norvegicum, AJ277897, Desulfomicrobiaceae
Desulfomicrobium macestii, AJ237604, Desulfomicrobiaceae
Desulfomicrobium baculatum, AJ277894, type sp., Desulfomicrobiaceae
Desulfomicrobium orale, AJ251623, Desulfomicrobiaceae
Desulfomicrobium thermophilum, AY464939, Desulfomicrobiaceae

Desulfohalobiaceae (13)

Desulfonauticus autotrophicus, FJ194951, Desulfohalobiaceae
Desulfonauticus submarinus, AF524933, type sp., Desulfohalobiaceae
Desulfothermus naphthae, X80922, type sp., Desulfohalobiaceae
Desulfothermus okinawensis, AB264617, Desulfohalobiaceae
Desulfohalobium utahense, DQ067421, Desulfohalobiaceae
Desulfovermiculus halophilus, DQ139408, type sp., Desulfohalobiaceae
Desulfohalobium retbaense, X99235, type sp., Desulfohalobiaceae
Desulfonatronovibrio magnus, GU196831, Desulfohalobiaceae
Desulfonatronovibrio thiodismutans, FJ469579, Desulfohalobiaceae
Desulfonatronovibrio hydrogenovorans, X99234, type sp., Desulfohalobiaceae
Desulfonatronovibrio halophilus, GQ922847, Desulfohalobiaceae
Desulfonatronospira delicata, EU296539, Desulfohalobiaceae
Desulfonatronospira thiodismutans, EU296537, type sp., Desulfohalobiaceae

Deltaproteobacteria (165)

Desulfobacteraceae (44)

Desulfococcus biacutus, AJ277887, Desulfobacteraceae
Desulfococcus multivorans, AF418173, type sp., Desulfobacteraceae
Desulfonema magnum, U45989, Desulfobacteraceae
Desulfonema limicola, U45990, type sp., Desulfobacteraceae
Desulfosalsimonas propionica, DQ067422, type sp., Desulfobacteraceae
Desulfonatronobacter acidivorans, GU289732, type sp., Desulfobacteraceae
Desulfonema ishimotonii, U45992, Desulfobacteraceae
Desulfosarcina ovata, Y17286, Desulfobacteraceae
Desulfosarcina variabilis, M34407, type sp., Desulfobacteraceae
Desulfosarcina cetonica, AJ237603, Desulfobacteraceae
Desulfatitalea tepidiphila, AB614135, type sp., Desulfobacteraceae
Desulfatibacillum aliphaticivorans, AY184360, type sp., Desulfobacteraceae
Desulfatibacillum alkenivorans, AY493562, Desulfobacteraceae
Desulfatirhabdium butyrativorans, DQ146482, type sp., Desulfobacteraceae
Desulfobacterium indolicum, AJ237607, type sp., Desulfobacteraceae
Desulfobotulus sapovorans, FJ789839, type sp., Desulfobacteraceae
Desulfobotulus sapovorans, FR733666, type sp., Desulfobacteraceae
Desulfobotulus alkaliphilus, FJ788523, Desulfobacteraceae
Desulfocella halophila, AF022936, type sp., Desulfobacteraceae
Desulforegula conservatrix, AF243334, type sp., Desulfobacteraceae
Desulfatiferula olefinivorans, DQ826724, type sp., Desulfobacteraceae
Desulfofrigus fragile, AF099065, Desulfobacteraceae
Desulfofrigus oceanense, AF099064, type sp., Desulfobacteraceae
Desulfoluna butyratoxydans, AB110540, type sp., Desulfobacteraceae
Desulfoluna spongiiphila, EF187256, Desulfobacteraceae
Desulfofaba gelida, AF099063, type sp., Desulfobacteraceae
Desulfofaba hansenii, AF321820, Desulfobacteraceae
Desulfofaba fastidiosa, AY268891, Desulfobacteraceae
Desulfobacter curvatus, AF418175, Desulfobacteraceae
Desulfobacter postgatei, AF418180, type sp., Desulfobacteraceae
Desulfobacter halotolerans, Y14745, Desulfobacteraceae
Desulfobacter latus, AJ441315, Desulfobacteraceae
Desulfobacter hydrogenophilus, FR733673, Desulfobacteraceae
Desulfobacter vibrioformis, U12254, Desulfobacteraceae
Desulfospira joergensenii, X99637, type sp., Desulfobacteraceae
Desulfotignum balticum, AF418176, type sp., Desulfobacteraceae
Desulfotignum toluenicum, EF207157, Desulfobacteraceae
Desulfotignum phosphitoxidans, AF420288, Desulfobacteraceae
Desulfobacula phenolica, AJ237606, Desulfobacteraceae
Desulfobacula toluolica, AJ441316, type sp., Desulfobacteraceae
Desulfoconvexum algidum, EF442984, type sp., Desulfobacteraceae
Desulfobacterium vacuolatum, AF418178, Desulfobacteraceae
Desulfobacterium niacini, FR733668, Desulfobacteraceae
Desulfobacterium autotrophicum, AF418177, Desulfobacteraceae

Syntrophaceae (4)

Syntrophus buswellii, X85131, type sp., Syntrophaceae
Syntrophus gentianae, X85132, Syntrophaceae
Syntrophus aciditrophicus, CP000252, Syntrophaceae
Smithella propionica, AF126282, type sp., Syntrophaceae

Bdellovibrionaceae (2)

Bdellovibrio bacteriovorus, AJ292759, type sp., Bdellovibrionaceae
Bdellovibrio exovorus, EF687743, Bdellovibrionaceae

Syntrophobacteraceae (12)

Desulfosoma caldarium, FJ491989, type sp., Syntrophobacteraceae
Desulfosoma profundum, HM056226, Syntrophobacteraceae
Thermodesulforhabdus norvegica, U25627, type sp., Syntrophobacteraceae
Desulfacinum infernum, L27426, type sp., Syntrophobacteraceae
Desulfacinum hydrothermale, AF170417, Syntrophobacteraceae
Desulfoglaeba alkanexedens, DQ303457, type sp., Syntrophobacteraceae
Syntrophobacter fumaroxidans, X82874, Syntrophobacteraceae
Syntrophobacter pfennigii, X82875, Syntrophobacteraceae
Desulforhabdus amnigena, X83274, type sp., Syntrophobacteraceae
Desulfovira adipica, AJ237605, type sp., Syntrophobacteraceae
Syntrophobacter wolnii, X70905, type sp., Syntrophobacteraceae
Syntrophobacter sulfatireducens, AY651787, Syntrophobacteraceae

Desulfobacca acetoxidans, AF002671, type sp., Syntrophaceae
Desulfarculus baarsii, AF418174, type sp., Desulfarculaceae
Desulfobacterium anilini, AJ237601, Desulfobacteraceae
Desulfomonile limimaris, AF230531, Syntrophaceae
Desulfomonile tiedjei, AM086646, type sp., Syntrophaceae
Dissulfuribacter thermophilus, JQ414031, type sp., Unclassified Deltaproteobacteria

Desulfobulbaceae (17)

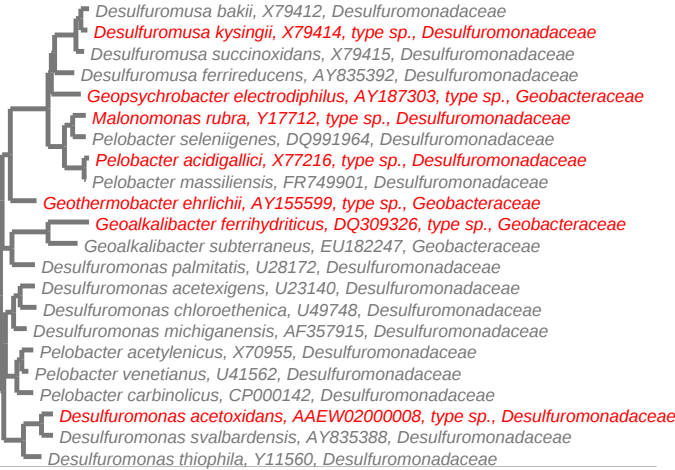
Desulfofustis glycolicus, X99707, type sp., Desulfobulbaceae
Desulforhopalus singaporensis, AF118453, Desulfobulbaceae
Desulforhopalus vacuolatus, L42613, type sp., Desulfobulbaceae
Desulfobacterium catecholicum, AJ237602, Desulfobulbaceae
Desulfocapsa sulfexigens, Y13672, Desulfobulbaceae
Desulfocapsa thiozymogenes, X95181, type sp., Desulfobulbaceae
Desulfopila inferna, AM774321, Desulfobulbaceae
Desulfopila aestuarii, AB110542, type sp., Desulfobulbaceae
Desulfotalea arctica, AF099061, Desulfobulbaceae
Desulfotalea psychrophila, AF099062, type sp., Desulfobulbaceae
Desulfobulbus elongatus, X95180, Desulfobulbaceae
Desulfobulbus propionicus, AY548789, type sp., Desulfobulbaceae
Desulfobulbus rhabdoformis, U12253, Desulfobulbaceae
Desulfobulbus japonicus, AB110549, Desulfobulbaceae
Desulfobulbus mediterraneus, AF354663, Desulfobulbaceae
Desulfobulbus alkaliphilus, HM750216, Desulfobulbaceae
Desulfurivibrio alkaliphilus, EF422413, type sp., Desulfobulbaceae

Bacteriovoracaceae (4)

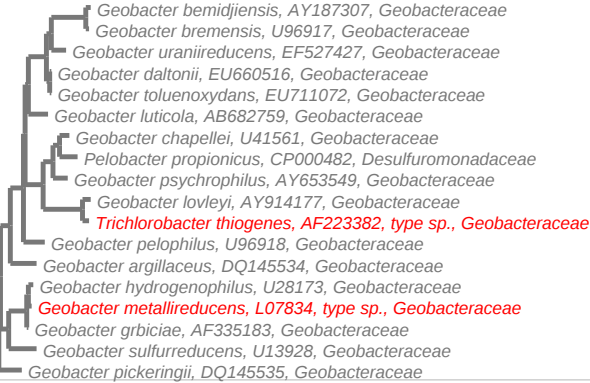
Bacteriovorax litoralis, AF084859, Bacteriovoracaceae
Bacteriovorax marinus, AF084854, Bacteriovoracaceae
Bacteriovorax stolpii, AJ288899, type sp., Bacteriovoracaceae
Peredibacter starrii, AF084852, type sp., Bacteriovoracaceae

Desulfuromonadales (40)

Desulfuromonadaceae (22)

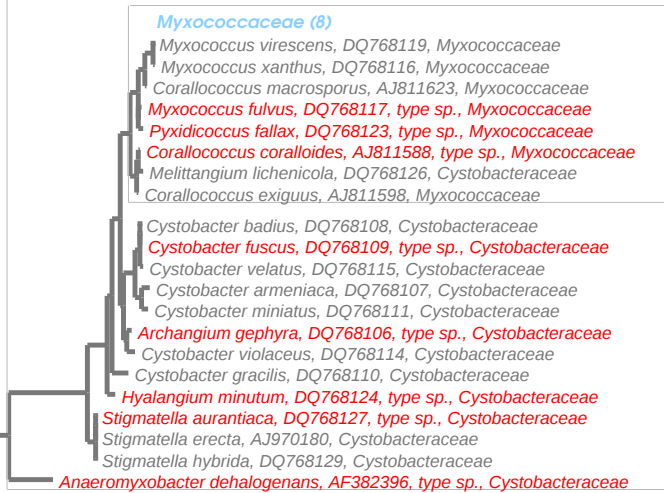


Geobacteraceae (18)

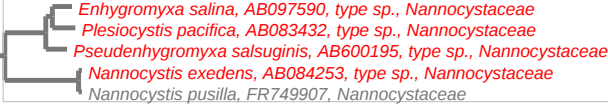


Myxococcales (35)

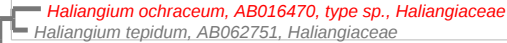
Cystobacteraceae and Myxococcaceae (21)



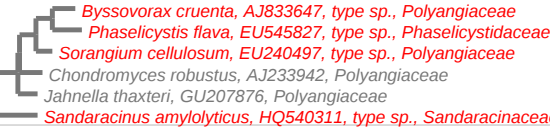
Nannocystaceae (5)



Haliangiaceae (2)



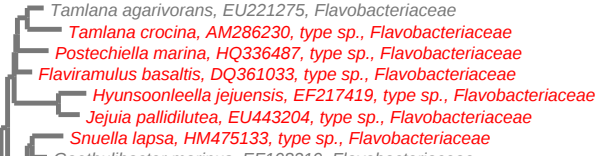
Koffleria flava, AJ233944, type sp., Koffleriaceae

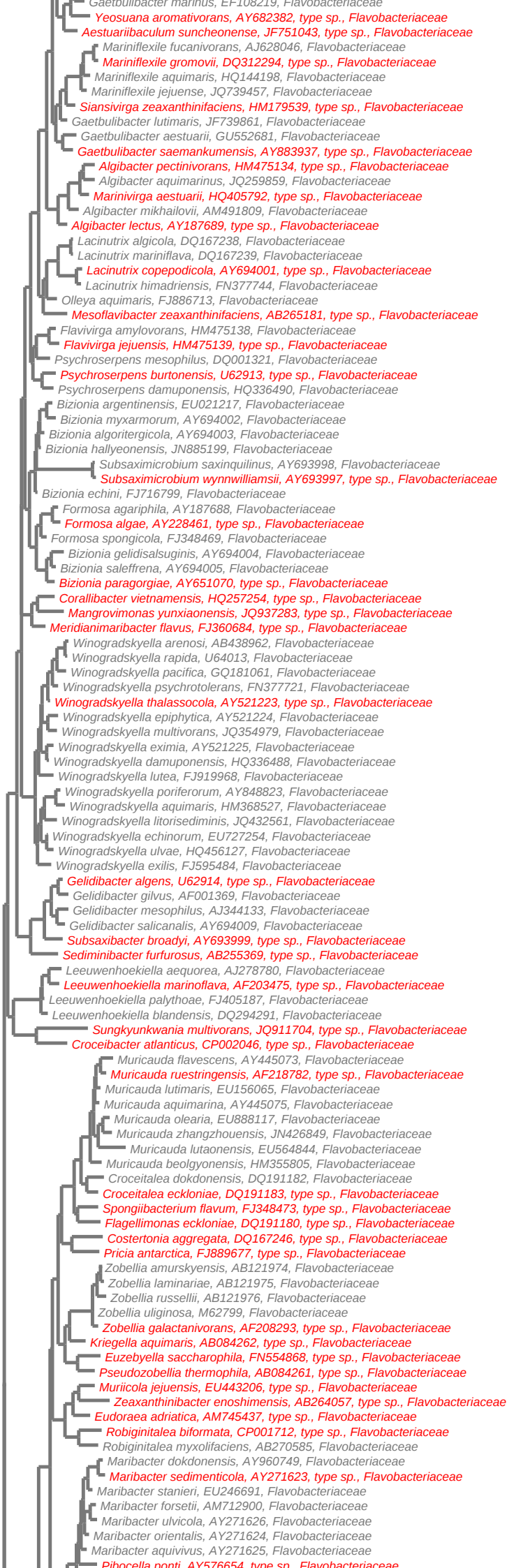


Syntrophorhabdus aromaticivorans, AB212873, type sp., Syntrophorhabdaceae

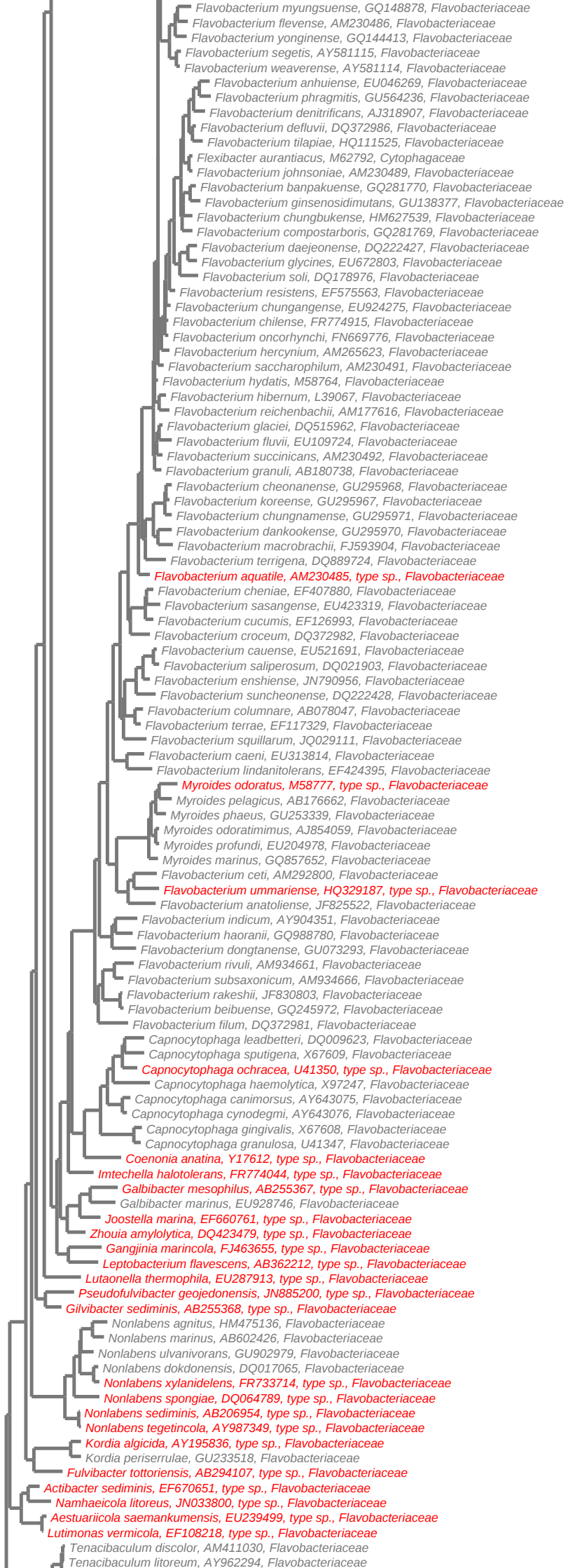
Bacteroidetes (927)

Flavobacteriaceae (431)

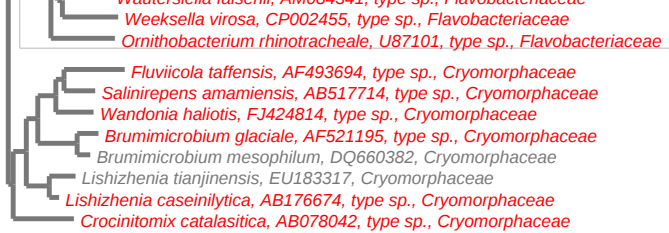








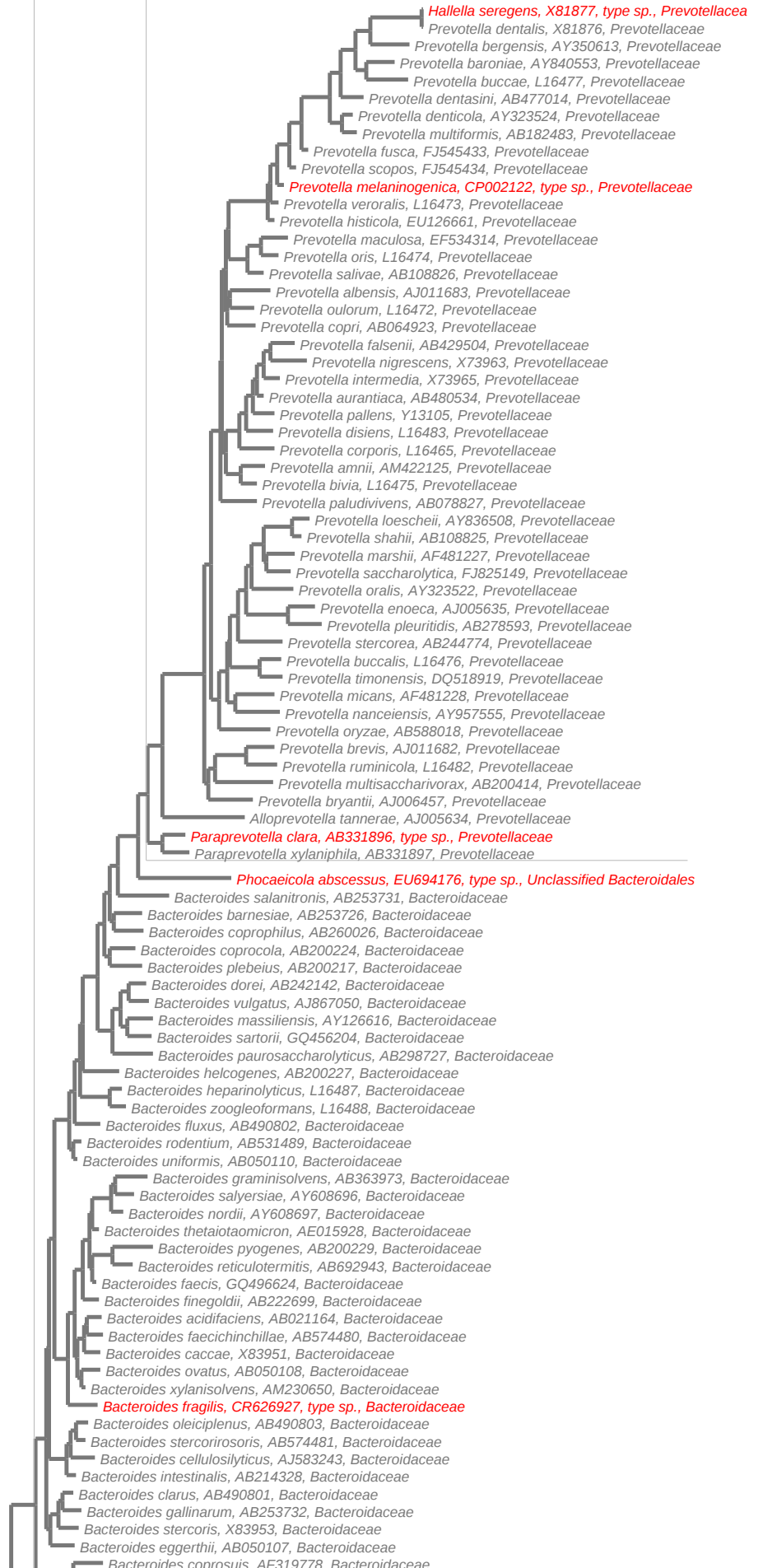
Tenacibaculum gallaicum, AM746477, Flavobacteriaceae
Tenacibaculum adriaticum, AM412314, Flavobacteriaceae
Tenacibaculum crassostreae, EU428783, Flavobacteriaceae
Tenacibaculum lutimaris, AY661691, Flavobacteriaceae
Tenacibaculum amycolyticum, AB032505, Flavobacteriaceae
Tenacibaculum skagerrakense, AF469612, Flavobacteriaceae
Tenacibaculum mesophilum, AB032501, Flavobacteriaceae
Tenacibaculum ovolyticum, AB078058, Flavobacteriaceae
Tenacibaculum dicentrarchi, FN545354, Flavobacteriaceae
Tenacibaculum soleae, AM746476, Flavobacteriaceae
Tenacibaculum aiptasiae, EF416572, Flavobacteriaceae
Tenacibaculum aestuarii, DQ314760, Flavobacteriaceae
Tenacibaculum geojense, HQ401023, Flavobacteriaceae
Tenacibaculum jejuense, FJ490366, Flavobacteriaceae
Tenacibaculum litopenaei, DQ822567, Flavobacteriaceae
Polaribacter butkevichii, AY189722, Flavobacteriaceae
Polaribacter irgensii, M61002, Flavobacteriaceae
Polaribacter filamentus, U73726, type sp., Flavobacteriaceae
Polaribacter franzmannii, U14586, Flavobacteriaceae
Polaribacter dokdonensis, DQ004686, Flavobacteriaceae
Tenacibaculum maritimum, AB078057, type sp., Flavobacteriaceae
Polaribacter reichenbachii, HQ891656, Flavobacteriaceae
Polaribacter gangjinensis, FJ425213, Flavobacteriaceae
Lutibacter maritimus, FJ598048, Flavobacteriaceae
Lutibacter flavus, GU166749, Flavobacteriaceae
Lutibacter litoralis, AY962293, type sp., Flavobacteriaceae
Lutibacter aestuarii, HM234096, Flavobacteriaceae
Maritimimonas rapanae, EU290161, type sp., Flavobacteriaceae
Epilithonimonas lactis, EF204460, Flavobacteriaceae
Epilithonimonas tenax, AF493696, type sp., Flavobacteriaceae
Chryseobacterium xinjiangense, DQ166169, Flavobacteriaceae
Chryseobacterium piscicola, EU869190, Flavobacteriaceae
Chryseobacterium greenlandense, FJ932652, Flavobacteriaceae
Chryseobacterium aquaticum, AM748690, Flavobacteriaceae
Chryseobacterium soli, EF591302, Flavobacteriaceae
Chryseobacterium piperi, EU999735, Flavobacteriaceae
Chryseobacterium ginsenosidimutans, GU138380, Flavobacteriaceae
Chryseobacterium soldanellicola, AY883415, Flavobacteriaceae
Chryseobacterium balustinum, AY468447, Flavobacteriaceae
Chryseobacterium piscium, AM040439, Flavobacteriaceae
Chryseobacterium scopthalmum, AJ271009, Flavobacteriaceae
Chryseobacterium indoltheticum, AY468448, Flavobacteriaceae
Chryseobacterium daeguense, EF076759, Flavobacteriaceae
Chryseobacterium gregarium, AM773820, Flavobacteriaceae
Chryseobacterium hagamense, DQ673672, Flavobacteriaceae
Chryseobacterium taeanense, AY883416, Flavobacteriaceae
Chryseobacterium taichungense, AJ843132, Flavobacteriaceae
Chryseobacterium taiwanense, DQ318789, Flavobacteriaceae
Chryseobacterium wanjuae, DQ256729, Flavobacteriaceae
Chryseobacterium daecheongense, AJ457206, Flavobacteriaceae
Chryseobacterium defluvii, AJ309324, Flavobacteriaceae
Chryseobacterium gambrini, AM232810, Flavobacteriaceae
Chryseobacterium rigui, JQ071497, Flavobacteriaceae
Chryseobacterium taihuense, JQ283114, Flavobacteriaceae
Chryseobacterium formosense, AY315443, Flavobacteriaceae
Chryseobacterium luteum, AM489609, Flavobacteriaceae
Chryseobacterium shigense, AB193101, Flavobacteriaceae
Chryseobacterium vrystaatense, AJ871397, Flavobacteriaceae
Chryseobacterium elymi, DQ673671, Flavobacteriaceae
Chryseobacterium lathyri, DQ673674, Flavobacteriaceae
Chryseobacterium oranimense, EF204451, Flavobacteriaceae
Chryseobacterium rhizosphaerae, DQ673670, Flavobacteriaceae
Chryseobacterium tractae, FR871429, Flavobacteriaceae
Chryseobacterium vietnamense, HM212415, Flavobacteriaceae
Chryseobacterium jejuense, EF591303, Flavobacteriaceae
Chryseobacterium oncorhynchi, FN674441, Flavobacteriaceae
Chryseobacterium ureilyticum, AM232806, Flavobacteriaceae
Chryseobacterium joostei, AJ271010, Flavobacteriaceae
Chryseobacterium aquifrigidense, EF644913, Flavobacteriaceae
Chryseobacterium flavum, EF154516, Flavobacteriaceae
Chryseobacterium gleum, AM232812, type sp., Flavobacteriaceae
Chryseobacterium arthrosphaerae, FN398101, Flavobacteriaceae
Chryseobacterium indologenes, AM232813, Flavobacteriaceae
Chryseobacterium culicis, FN554975, Flavobacteriaceae
Cruoricaptor ignavus, HE614680, type sp., Flavobacteriaceae
Chryseobacterium caeni, DQ336714, Flavobacteriaceae
Chryseobacterium hungaricum, EF685359, Flavobacteriaceae
Chryseobacterium hispanicum, AM159183, Flavobacteriaceae
Chryseobacterium bovis, EF204446, Flavobacteriaceae
Chryseobacterium hominis, AM261868, Flavobacteriaceae
Chryseobacterium antarcticum, AY553293, Flavobacteriaceae
Chryseobacterium palustre, EU360967, Flavobacteriaceae
Chryseobacterium yonginense, GQ259742, Flavobacteriaceae
Chryseobacterium chaponense, GU345045, Flavobacteriaceae
Chryseobacterium jeonii, AY553294, Flavobacteriaceae
Chryseobacterium solincola, EU516352, Flavobacteriaceae
Chryseobacterium treverense, FN297836, Flavobacteriaceae
Chryseobacterium anthropi, AM982786, Flavobacteriaceae
Chryseobacterium koreense, AF344179, Flavobacteriaceae
Chryseobacterium haifense, EF204450, Flavobacteriaceae
Chryseobacterium humi, EU360966, Flavobacteriaceae
Chryseobacterium marinum, EF554366, Flavobacteriaceae
Chryseobacterium pallidum, AM232809, Flavobacteriaceae
Chryseobacterium molle, AJ534853, Flavobacteriaceae
Riemerella columbipharyngis, HQ286278, Flavobacteriaceae
Riemerella columbina, AF181448, Flavobacteriaceae
Riemerella anatipestifer, U60101, type sp., Flavobacteriaceae
Cloacibacterium normanense, AJ575430, type sp., Flavobacteriaceae
Cloacibacterium rupense, EU581834, Flavobacteriaceae
Planobacterium taklimakanense, EU718058, type sp., Flavobacteriaceae
Soonwooia buanensis, FJ713810, type sp., Flavobacteriaceae
Elizabethkingia anophelis, EF426425, Flavobacteriaceae
Elizabethkingia miricola, AB071953, Flavobacteriaceae
Elizabethkingia meningoseptica, AJ704540, type sp., Flavobacteriaceae
Empedobacter brevis, AM177497, type sp., Flavobacteriaceae
Wautersiella falsenii, AM084341, type sp., Flavobacteriaceae



Bacteroidales (149)

Bacteroidaceae and Prevotellaceae (90)

Prevotellaceae (49)



Bacteroides propionicifaciens, AB264625, Bacteroidaceae

Porphyromonadaceae (32)

Porphyromonas circumdentaria, L26102, Porphyromonadaceae
Porphyromonas gingivicanis, GU233445, Porphyromonadaceae
Porphyromonas endodontalis, AY253728, Porphyromonadaceae
Porphyromonas asaccharolytica, L16490, type sp., Porphyromonadaceae
Porphyromonas uenonis, AY570514, Porphyromonadaceae
Porphyromonas macacae, L16494, Porphyromonadaceae
Porphyromonas levii, L16493, Porphyromonadaceae
Porphyromonas somerae, AY968205, Porphyromonadaceae
Porphyromonas bennonis, EU414673, Porphyromonadaceae
Porphyromonas cangingivalis, X76259, Porphyromonadaceae
Porphyromonas canoris, AB525416, Porphyromonadaceae
Porphyromonas gingivalis, AB035459, Porphyromonadaceae
Porphyromonas gulae, AF208290, Porphyromonadaceae
Porphyromonas crevioricanis, GU233446, Porphyromonadaceae
Porphyromonas catoniae, X82823, Porphyromonadaceae
Tannerella forsythia, AB035460, type sp., Porphyromonadaceae
Parabacteroides johnsonii, AB261128, Porphyromonadaceae
Parabacteroides merdae, AB238928, Porphyromonadaceae
Parabacteroides distasonis, AB238922, type sp., Porphyromonadaceae
Parabacteroides goldsteinii, AY974070, Porphyromonadaceae
Parabacteroides gordonii, AB470343, Porphyromonadaceae
Macellibacteroides fermentans, HQ020488, type sp., Porphyromonadaceae
Dysgonomonas gadei, Y18530, type sp., Porphyromonadaceae
Dysgonomonas hofstadii, FN356023, Porphyromonadaceae
Dysgonomonas mossii, AJ319867, Porphyromonadaceae
Dysgonomonas oryzarvi, AB547446, Porphyromonadaceae
Petrimonas sulfuriphila, AY570690, type sp., Porphyromonadaceae
Proteiniphilum acetatigenes, AY742226, type sp., Porphyromonadaceae
Dysgonomonas capnocytophagoides, U41355, Porphyromonadaceae
Paludibacter propionigenes, AB078842, type sp., Porphyromonadaceae
Barnesiella intestinihominis, AB370251, Porphyromonadaceae
Barnesiella viscericola, AB267809, type sp., Porphyromonadaceae

Butyricimonas synergistica, AB443948, type sp., Porphyromonadaceae
Butyricimonas virosa, AB443949, Porphyromonadaceae
Odoribacter denticanis, AY560020, Porphyromonadaceae
Odoribacter laneus, AB490805, Porphyromonadaceae
Odoribacter splanchnicus, L16496, type sp., Porphyromonadaceae
Geofilum rubicundum, AB362265, type sp., Marinilabiliaceae
Mangroviflexus xiamenensis, HQ697914, type sp., Marinilabiliaceae
Natronoflexus pectinivorans, GQ922844, type sp., Marinilabiliaceae
Alkalitalea saponilacus, HQ191474, type sp., Marinilabiliaceae
Cytophaga xylanolytica, FR733683, Cytophagaceae
Thermophagus xiamenensis, DQ517535, type sp., Marinilabiliaceae
Anaerophaga thermohalophila, AJ418048, type sp., Marinilabiliaceae
Marinilabilia salmonicolor, AB517713, type sp., Marinilabiliaceae
Alkaliflexus imshenetskii, AJ784993, type sp., Marinilabiliaceae
Sunxiuqinia elliptica, GQ200190, type sp., Unclassified Bacteroidales
Sunxiuqinia faeciviva, AB362263, Unclassified Bacteroidales
Meniscus glaucopsis, GU269545, type sp., Cytophagaceae
Prolixibacter bellariivorans, AY918928, type sp., Unclassified Bacteroidetes
Cytophaga fermentans, M58766, Cytophagaceae
Marinifilum fragile, FJ394546, type sp., Unclassified Bacteroidetes

Rikenellaceae (7)

Alistipes finegoldii, AY643083, Rikenellaceae
Alistipes shahii, AY974072, Rikenellaceae
Alistipes putredinis, L16497, type sp., Rikenellaceae
Alistipes onderdonkii, AY974071, Rikenellaceae
Alistipes indistinctus, AB490804, Rikenellaceae
Anaerocella delicata, AB298736, type sp., Rikenellaceae
Rikenella microfusum, L16498, type sp., Rikenellaceae

Cryomorphaceae (4)

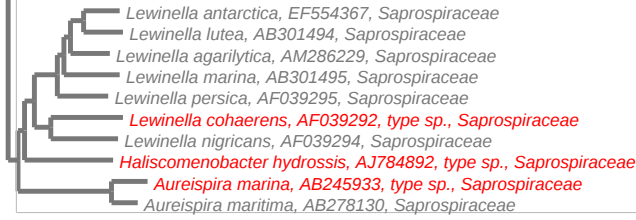
Phaeocystidibacter luteus, HQ434766, type sp., Cryomorphaceae
Owenweeksia hongkongensis, AB125062, type sp., Cryomorphaceae
Schleiferia thermophila, HQ172900, type sp., Schleiferiaceae
Cryomorpha ignava, AF170738, type sp., Cryomorphaceae

Chitinophagaceae (43)

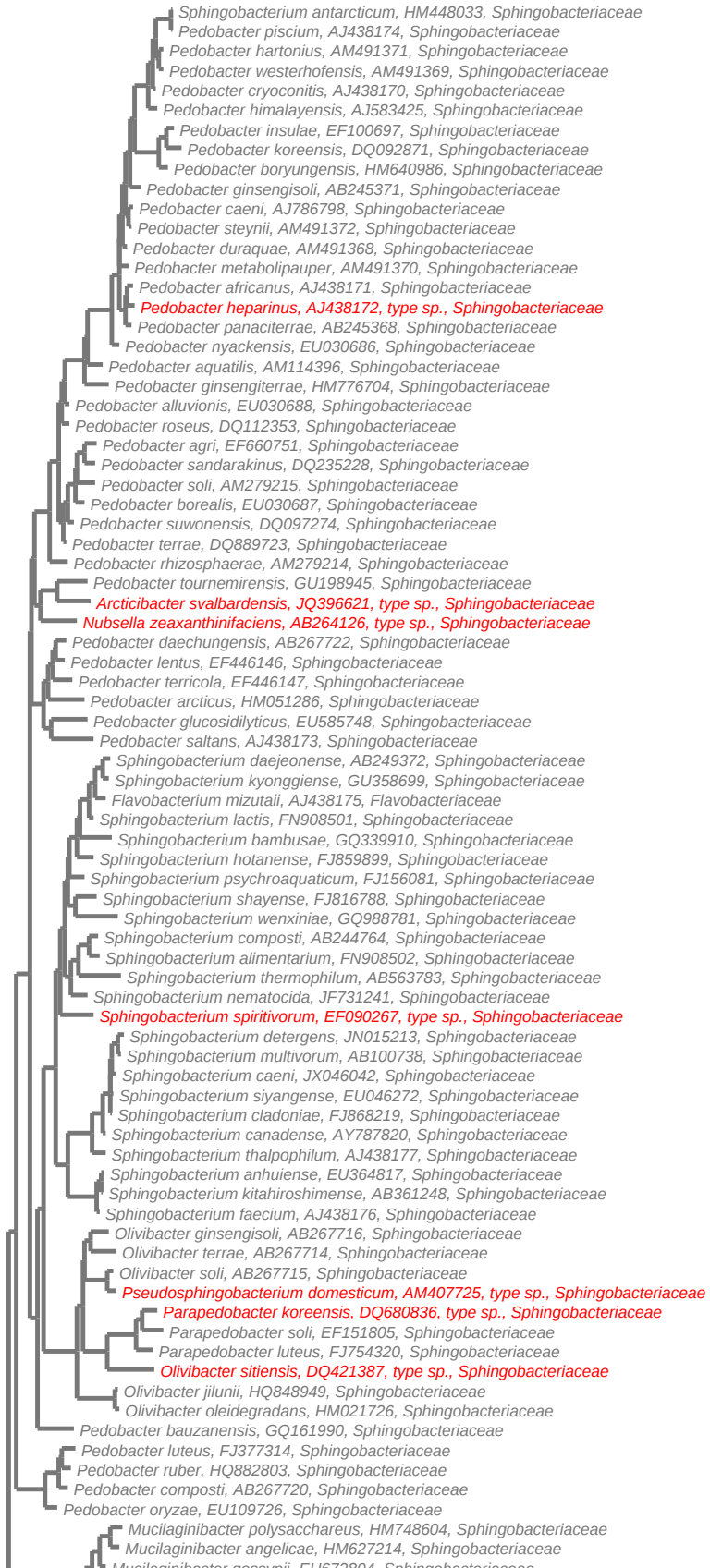
Ferruginibacter alkalientus, FJ177530, type sp., Chitinophagaceae
Ferruginibacter lapsinensis, FJ177532, Chitinophagaceae
Lacibacter cauensis, EU521690, type sp., Chitinophagaceae
Flavitalea populi, HM130561, type sp., Chitinophagaceae
Flavitalea gansuensis, GU295962, Chitinophagaceae
Flavisolibacter ginsengiterrae, AB267476, type sp., Chitinophagaceae
Flavisolibacter ginsengisoli, AB267477, Chitinophagaceae
Niastella koreensis, DQ244077, type sp., Chitinophagaceae
Niastella yeongjuensis, DQ244076, Chitinophagaceae
Niastella populi, EU877262, Chitinophagaceae
Niabella aurantiaca, DQ457019, type sp., Chitinophagaceae
Niabella tibetensis, GU291295, Chitinophagaceae
Niabella soli, EF592608, Chitinophagaceae
Niabella ginsengisoli, EU616816, Chitinophagaceae
Niabella yanshanensis, FJ457040, Chitinophagaceae
Terrimonas ferruginea, AM230484, type sp., Chitinophagaceae
Terrimonas aquatica, FJ347757, Chitinophagaceae
Terrimonas rubra, JF803808, Chitinophagaceae
Terrimonas lutea, AB192292, Chitinophagaceae
Terrimonas pekingensis, JF834159, Chitinophagaceae
Segetibacter aerophilus, GQ421847, Chitinophagaceae
Segetibacter koreensis, AB267478, type sp., Chitinophagaceae
Sediminibacterium salmoneum, EF407879, type sp., Chitinophagaceae
Sediminibacterium ginsengisoli, EF067860, Chitinophagaceae
Hydrotalea flava, FN665659, type sp., Chitinophagaceae
Filimonas lacunae, AB362776, type sp., Chitinophagaceae
Parasegetibacter luojiensis, EU877263, type sp., Chitinophagaceae
Flaviumibacter petaseus, EU854577, type sp., Chitinophagaceae
Chitinophaga filiformis, AB078049, Chitinophagaceae
Chitinophaga ginsengisoli, AB245374, Chitinophagaceae
Chitinophaga pinensis, AF078775, type sp., Chitinophagaceae
Chitinophaga skermanii, DQ062743, Chitinophagaceae

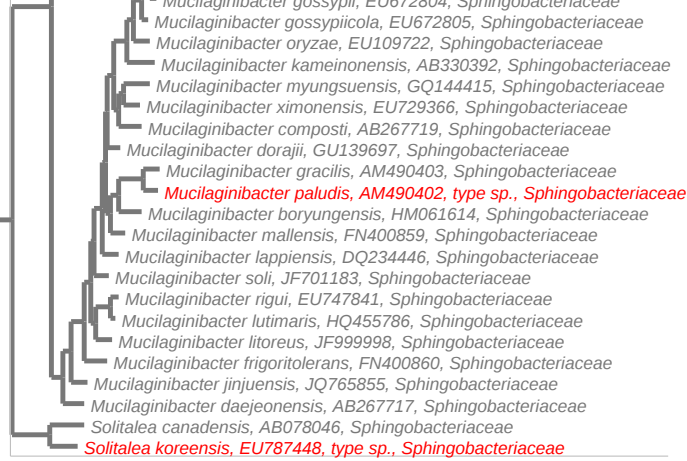


Saprospiraceae (10)



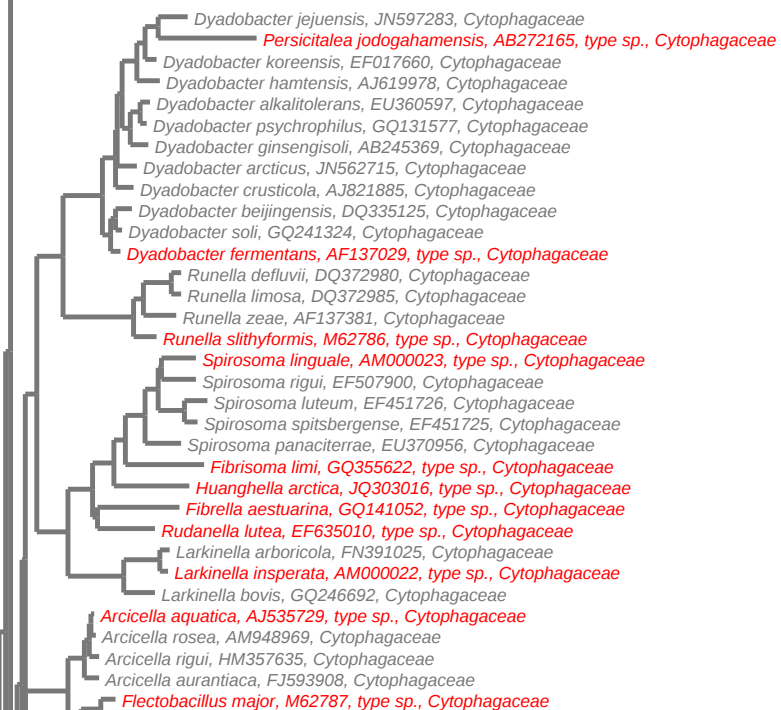
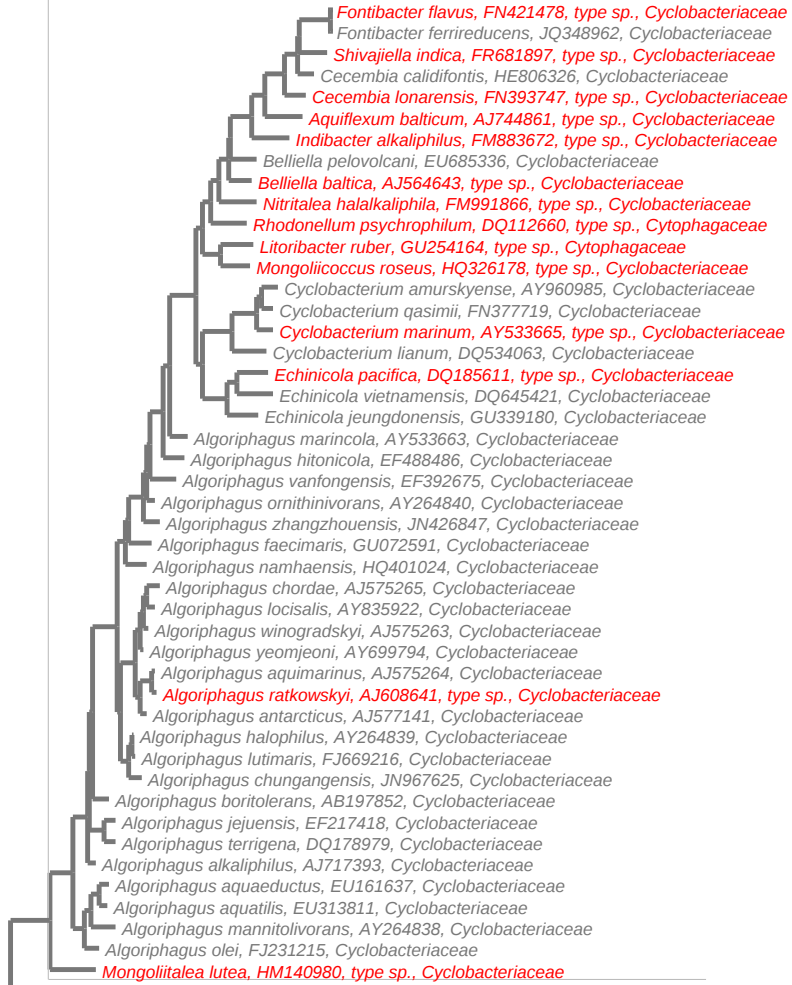
Sphingobacteriaceae (101)

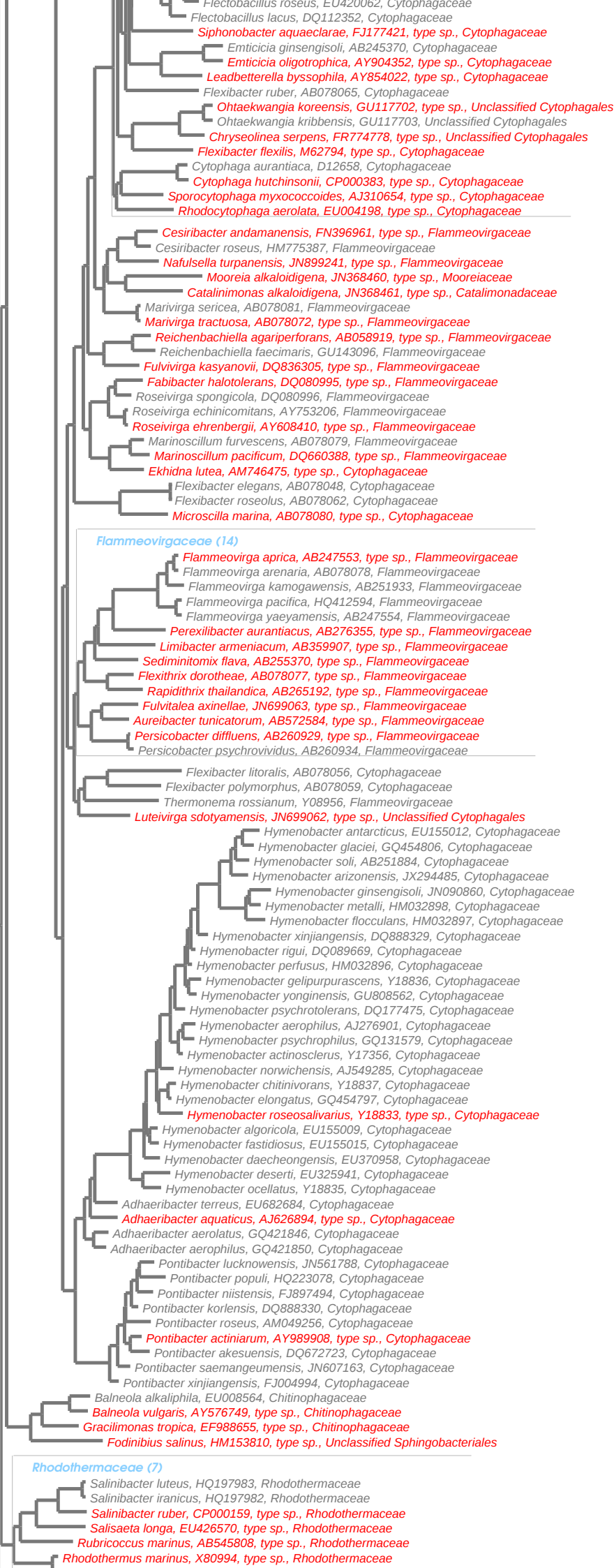




Cytophagaceae and Cyclobacteriaceae (94)

Cyclobacteriaceae (46)





Chlorobi (12)

Chlorobia or Chlorobea (11)

- Chlorobium clathratiforme, Y08108, Chlorobiaceae
- Chlorobium phaeobacteroides, CP000492, Chlorobiaceae
- Chlorobium limicola, CP001097, type sp., Chlorobiaceae**
- Chlorobium phaeovibrioides, Y08105, Chlorobiaceae
- Chlorobium luteolum, CP000096, Chlorobiaceae
- Chlorobaculum tepidum, M58468, type sp., Chlorobiaceae**
- Chlorobaculum thiosulfatophilum, Y08102, Chlorobiaceae
- Chlorobium chlorovibrioides, Y10649, Chlorobiaceae
- Prosthecochloris aestuarii, CP001108, type sp., Chlorobiaceae**
- Prosthecochloris vibrioformis, M62791, Chlorobiaceae
- Chloroherpeton thalassium, AF170103, type sp., Chlorobiaceae**

Ignavibacterium album, AB478415, type sp., Ignavibacteriaceae

Verrucomicrobia (38)

- Haloferula rosea, AB372853, type sp., Verrucomicrobiaceae**
- Haloferula chungangensis, JN001489, Verrucomicrobiaceae
- Haloferula harenae, AB372852, Verrucomicrobiaceae
- Haloferula phyci, AB372854, Verrucomicrobiaceae
- Haloferula helveola, AB372855, Verrucomicrobiaceae
- Haloferula sargassicola, AB372856, Verrucomicrobiaceae
- Haloferula luteola, FJ032193, Verrucomicrobiaceae
- Luteolibacter algae, AB331893, Verrucomicrobiaceae
- Luteolibacter luojensis, JN630810, Verrucomicrobiaceae
- Luteolibacter pohnpensis, AB331895, type sp., Verrucomicrobiaceae**
- Luteolibacter cuticulihirudinis, JQ429496, Verrucomicrobiaceae

Rubritaleaceae (6)

- Rubritalea halochordaticola, AB543683, Rubritaleaceae
- Rubritalea squalenifaciens, AB277853, Rubritaleaceae
- Rubritalea sabuli, AB353310, Rubritaleaceae
- Rubritalea spongiae, AB297805, Rubritaleaceae
- Rubritalea tangerina, AB297806, Rubritaleaceae
- Rubritalea marina, DQ302104, type sp., Rubritaleaceae**

- Persicirhabdus sediminis, AB331886, type sp., Verrucomicrobiaceae**
- Roseibacillus ishigakijimensis, AB331888, type sp., Verrucomicrobiaceae**
- Roseibacillus ponti, AB331889, Verrucomicrobiaceae
- Roseibacillus persicus, AB331890, Verrucomicrobiaceae
- Akkermansia muciniphila, AY271254, type sp., Akkermansiaceae**

Verrucomicrobiaceae (7)

- Prostheco bacter debontii, U60014, Verrucomicrobiaceae
- Prostheco bacter fusiformis, U60015, type sp., Verrucomicrobiaceae**
- Prostheco bacter dejongeii, U60012, Verrucomicrobiaceae
- Prostheco bacter fluvialis, AB305640, Verrucomicrobiaceae
- Prostheco bacter vanneervanii, U60013, Verrucomicrobiaceae
- Verrucomicrobium spinosum, X90515, type sp., Verrucomicrobiaceae**
- Roseimicrobium gellanilyticum, AB552861, type sp., Verrucomicrobiaceae**

Puniceicoccaceae and Opitutaceae (9)

- Pelagicoccus albus, AB286016, Puniceicoccaceae
- Pelagicoccus litoralis, AB286017, Puniceicoccaceae
- Pelagicoccus mobilis, AB286015, type sp., Puniceicoccaceae**
- Pelagicoccus croceus, AB297922, Puniceicoccaceae

Opitutaceae (2)

- Alterococcus agarolyticus, AF075271, type sp., Opitutaceae**
- Opitutus terrae, AJ229235, type sp., Opitutaceae**
- Cerasicoccus arenae, AB292183, type sp., Puniceicoccaceae**
- Puniceicoccus vermicola, DQ539046, type sp., Puniceicoccaceae**
- Coralimargarita akajimensis, AB266750, type sp., Puniceicoccaceae**

Lentisphaerae (2)

- Lentisphaera araneosa, AY390428, type sp., Lentisphaeraceae**
- Victivallis vadensis, AY049713, type sp., Victivallaceae**
- Oligosphaera ethanolica, AB558581, type sp., Oligosphaeraceae**

Chlamydiae (13)

Chlamydiaceae (9)

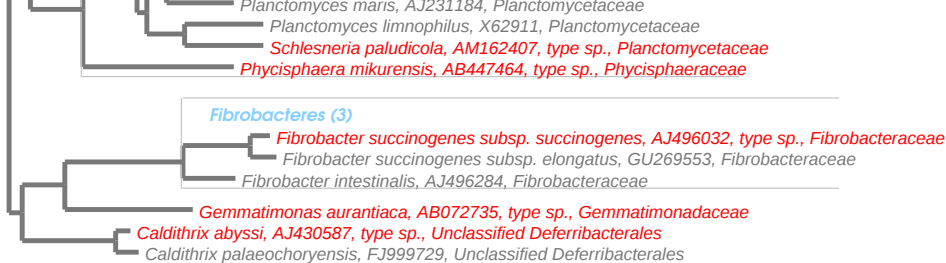
- Chlamydia suis, U73110, Chlamydiaceae
- Chlamydia trachomatis, D89067, type sp., Chlamydiaceae**
- Chlamydia muridarum, D85718, Chlamydiaceae
- Chlamydophila pecorum, D88317, Chlamydiaceae
- Chlamydophila abortus, D85709, Chlamydiaceae
- Chlamydophila caviae, D85708, Chlamydiaceae
- Chlamydophila psittaci, U68447, type sp., Chlamydiaceae**
- Chlamydophila felis, D85701, Chlamydiaceae
- Chlamydophila pneumoniae, Z49873, Chlamydiaceae

Parachlamydiaceae (2)

- Neochlamydia hartmannellae, AF177275, type sp., Parachlamydiaceae**
- Parachlamydia acanthamoebae, Y07556, type sp., Parachlamydiaceae**
- Simkania negevensis, U68460, type sp., Simkaniaceae**
- Waddlia chondrophila, AF042496, type sp., Waddliaceae**

Planctomycetes (15)

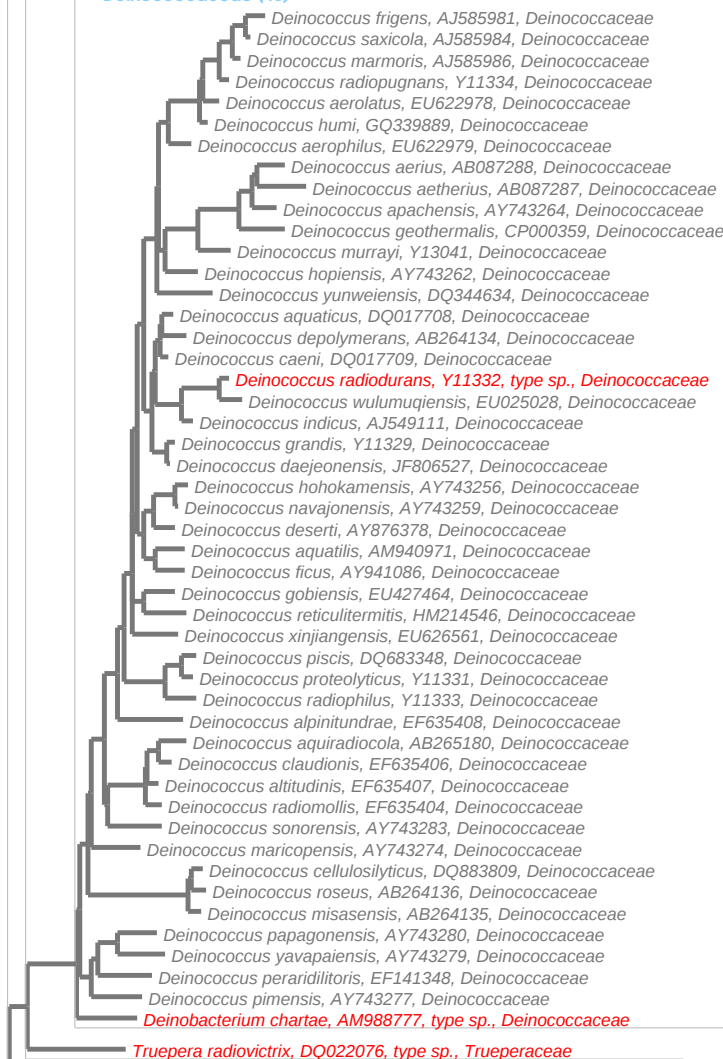
- Singulisphaera acidiphila, AM850678, type sp., Planctomycetaceae**
- Singulisphaera rosea, FN391026, Planctomycetaceae
- Aquisphaera giovannonii, DQ986200, type sp., Planctomycetaceae**
- Isosphaera pallida, CP002353, type sp., Planctomycetaceae
- Telmatocola sphagniphila, JN880417, type sp., Planctomycetaceae**
- Zavarzinella formosa, AM162406, type sp., Planctomycetaceae
- Gemmata obscuriglobus, X56305, type sp., Planctomycetaceae
- Blastopirellula marina, X62912, type sp., Planctomycetaceae**
- Pirellula staleyi, CP001848, type sp., Planctomycetaceae**
- Rhodopirellula baltica, BX294149, type sp., Planctomycetaceae**
- Planctomyces brasiliensis, CP002546, Planctomycetaceae



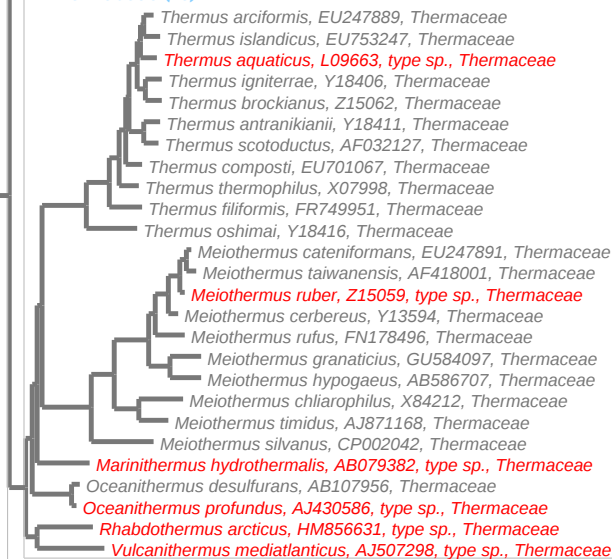
Deinococcus–Thermus (75)

Deinococcales (49)

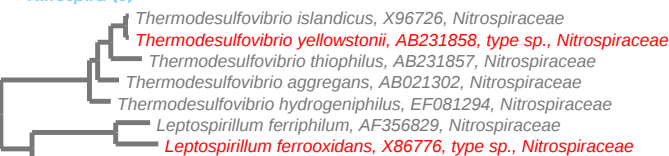
Deinococcaceae (48)



Thermaceae (26)



Nitrospira (8)



Actinobacteria (2593)

Micrococcaceae and Bifidobacteriaceae (164)

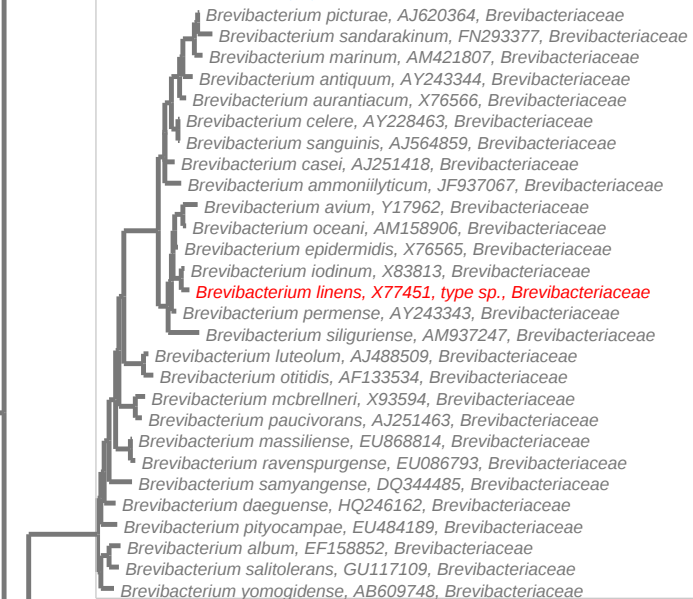
Bifidobacteriaceae (53)

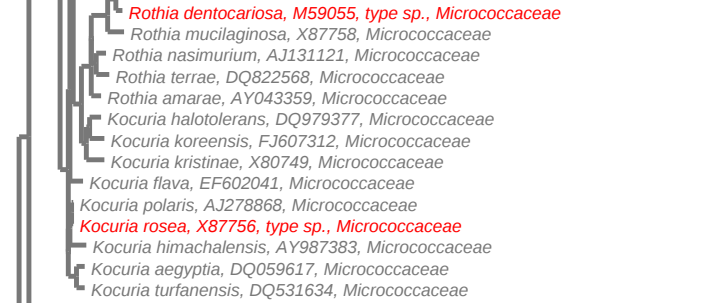
Bifidobacterium coryneforme, M58733, Bifidobacteriaceae
Bifidobacterium indicum, D86188, Bifidobacteriaceae
Bifidobacterium actinocoloniiforme, FJ858731, Bifidobacteriaceae
Bifidobacterium asteroides, EF187235, Bifidobacteriaceae
Bifidobacterium bombi, EU127549, Bifidobacteriaceae
Bifidobacterium thermophilum, GU361834, Bifidobacteriaceae
Bifidobacterium thermacidophilum subsp. *porcinum*, AY148470, Bifidobacteriaceae
Bifidobacterium thermacidophilum subsp. *thermacidophilum*, AB127549, Bifidobacteriaceae
Bifidobacterium boum, D86190, Bifidobacteriaceae
Bifidobacterium reuteri, AB613259, Bifidobacteriaceae
Scardovia inopinata, D89332, type sp., Bifidobacteriaceae
Scardovia wiggisiae, AY278626, Bifidobacteriaceae
Parascardovia denticolens, D89331, type sp., Bifidobacteriaceae
Alloscardovia omnicolens, AM419460, type sp., Bifidobacteriaceae
Metascardovia criceti, AB241105, type sp., Bifidobacteriaceae
Aeriscardovia aeriphila, AY174107, type sp., Bifidobacteriaceae
Bifidobacterium tsurumiense, AB241106, Bifidobacteriaceae
Bifidobacterium adolescentis, AP009256, Bifidobacteriaceae
Bifidobacterium stercoris, FJ611793, Bifidobacteriaceae
Bifidobacterium ruminantium, D86197, Bifidobacteriaceae
Bifidobacterium angulatum, D86182, Bifidobacteriaceae
Bifidobacterium merycicum, D86192, Bifidobacteriaceae
Bifidobacterium callitrichos, AB559503, Bifidobacteriaceae
Bifidobacterium catenulatum, AF432082, Bifidobacteriaceae
Bifidobacterium pseudocatenulatum, D86187, Bifidobacteriaceae
Bifidobacterium dentium, D86183, Bifidobacteriaceae
Bifidobacterium kashiwanohense, AB425276, Bifidobacteriaceae
Bifidobacterium stellenboschense, AB559505, Bifidobacteriaceae
Bifidobacterium biavatii, AB559506, Bifidobacteriaceae
Bifidobacterium scardovii, AJ307005, Bifidobacteriaceae
Bifidobacterium bifidum, U25952, type sp., Bifidobacteriaceae
Bifidobacterium animalis subsp. *lactis*, AB050136, Bifidobacteriaceae
Bifidobacterium animalis subsp. *animalis*, D86185, Bifidobacteriaceae
Bifidobacterium choerinum, D86186, Bifidobacteriaceae
Bifidobacterium pseudolongum subsp. *globosum*, D86194, Bifidobacteriaceae
Bifidobacterium pseudolongum subsp. *pseudolongum*, D86195, Bifidobacteriaceae
Bifidobacterium magnum, D86193, Bifidobacteriaceae
Bifidobacterium cuniculi, GU361818, Bifidobacteriaceae
Bifidobacterium gallicum, D86189, Bifidobacteriaceae
Bifidobacterium longum subsp. *longum*, M58739, Bifidobacteriaceae
Bifidobacterium longum subsp. *suis*, M58743, Bifidobacteriaceae
Bifidobacterium longum subsp. *infantis*, D86184, Bifidobacteriaceae
Bifidobacterium saguini, AB559504, Bifidobacteriaceae
Bifidobacterium breve, AB006658, Bifidobacteriaceae
Bifidobacterium gallinarum, D86191, Bifidobacteriaceae
Bifidobacterium saeculare, D89328, Bifidobacteriaceae
Bifidobacterium pullorum, D86196, Bifidobacteriaceae
Gardnerella vaginalis, M58744, type sp., Bifidobacteriaceae
Bifidobacterium subtile, D89378, Bifidobacteriaceae
Bifidobacterium minimum, M58741, Bifidobacteriaceae
Bifidobacterium bohemicum, FJ858736, Bifidobacteriaceae
Bifidobacterium mongoliense, AB433856, Bifidobacteriaceae
Bifidobacterium psychraerophilum, AY174108, Bifidobacteriaceae

Arthrobacter sanguinis, EU086805, Micrococcaceae
Acaricomes phytoeiuili, AJ812213, type sp., Micrococcaceae
Renibacterium salmoninarum, AF180950, type sp., Micrococcaceae
Arthrobacter ruscus, AB071950, Micrococcaceae
Arthrobacter livingstonensis, GQ406811, Micrococcaceae
Arthrobacter cryoconiti, GU784867, Micrococcaceae
Arthrobacter stackebrandtii, AJ640198, Micrococcaceae
Arthrobacter alpinus, GQ227413, Micrococcaceae
Arthrobacter psychrolactophilus, AF134179, Micrococcaceae
Arthrobacter psychrochitinophilus, AB588633, Micrococcaceae
Arthrobacter phenanthrenivorans, AM176541, Micrococcaceae
Arthrobacter polychromogenes, X80741, Micrococcaceae
Arthrobacter oxydans, X83408, Micrococcaceae
Arthrobacter scleromae, AF330692, Micrococcaceae
Arthrobacter roseus, AJ278870, Micrococcaceae
Arthrobacter defluvi, AM409361, Micrococcaceae
Arthrobacter niigatensis, AB248526, Micrococcaceae
Arthrobacter equi, FN673551, Micrococcaceae
Arthrobacter chlorophenolicus, AF102267, Micrococcaceae
Arthrobacter sulfonivorans, AF235091, Micrococcaceae
Arthrobacter ramosus, AM039435, Micrococcaceae
Arthrobacter ureafaciens, X80744, Micrococcaceae
Arthrobacter nicotinovorans, X80743, Micrococcaceae
Arthrobacter histidinovorans, X83406, Micrococcaceae
Corynebacterium ilicis, JQ955626, Corynebacteriaceae
Arthrobacter ilicis, X83407, Micrococcaceae
Arthrobacter aurescens, X83405, Micrococcaceae
Arthrobacter nitroguajacolicus, AJ512504, Micrococcaceae
Arthrobacter castelli, AJ639826, Micrococcaceae
Arthrobacter pigmenti, AJ639827, Micrococcaceae
Arthrobacter monumenti, AJ315070, Micrococcaceae
Arthrobacter citreus, X80737, Micrococcaceae
Arthrobacter gandavensis, AJ316140, Micrococcaceae
Arthrobacter koreensis, AY116496, Micrococcaceae
Arthrobacter luteolus, AJ243422, Micrococcaceae
Arthrobacter alkaliphilus, AB248527, Micrococcaceae
Arthrobacter methylotrophus, AF235090, Micrococcaceae
Arthrobacter humicola, AB279890, Micrococcaceae
Arthrobacter oryzae, AB279889, Micrococcaceae
Arthrobacter cupressi, HQ657321, Micrococcaceae
Arthrobacter parietis, AJ639830, Micrococcaceae
Arthrobacter tumbae, AJ315069, Micrococcaceae
Arthrobacter subterraneus, DQ097525, Micrococcaceae
Arthrobacter tecti, AJ639829, Micrococcaceae
Arthrobacter flavus, AB537168, Micrococcaceae

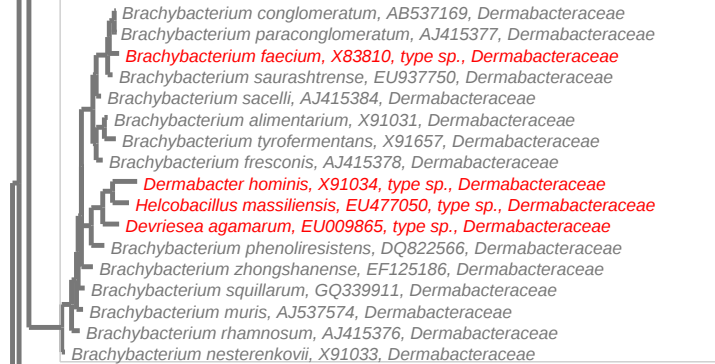


Brevibacteriaceae (28)

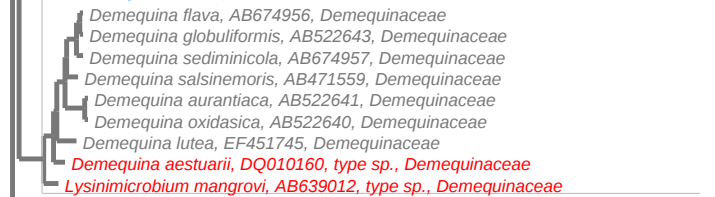




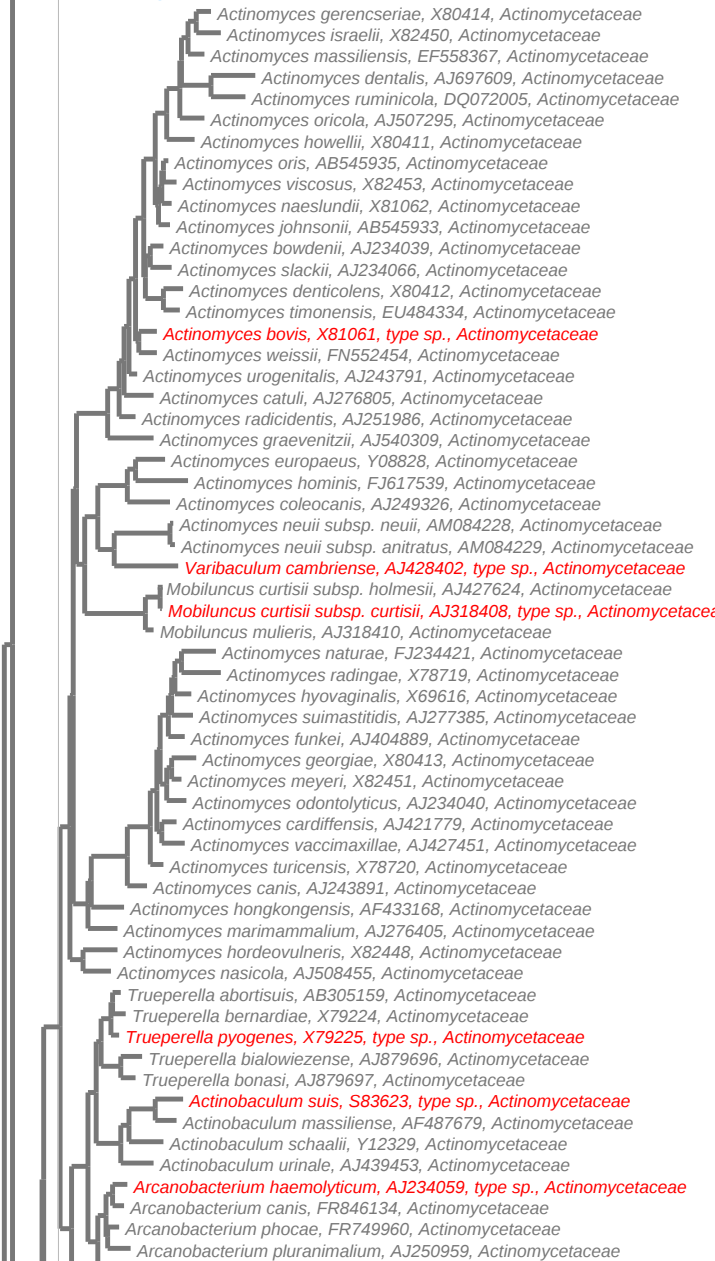
Dermabacteraceae (17)



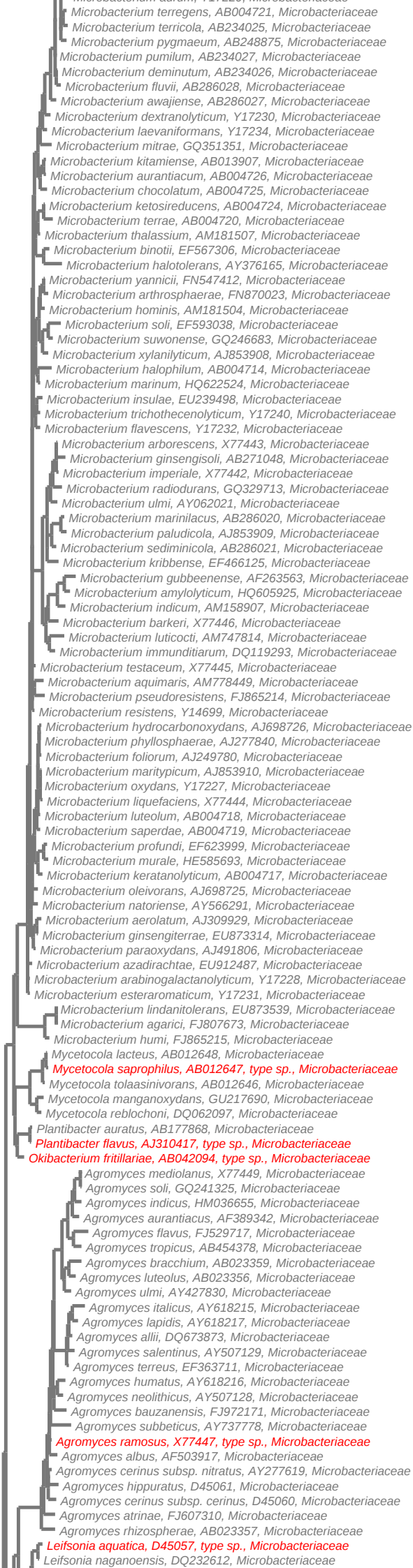
Demequinaceae (9)



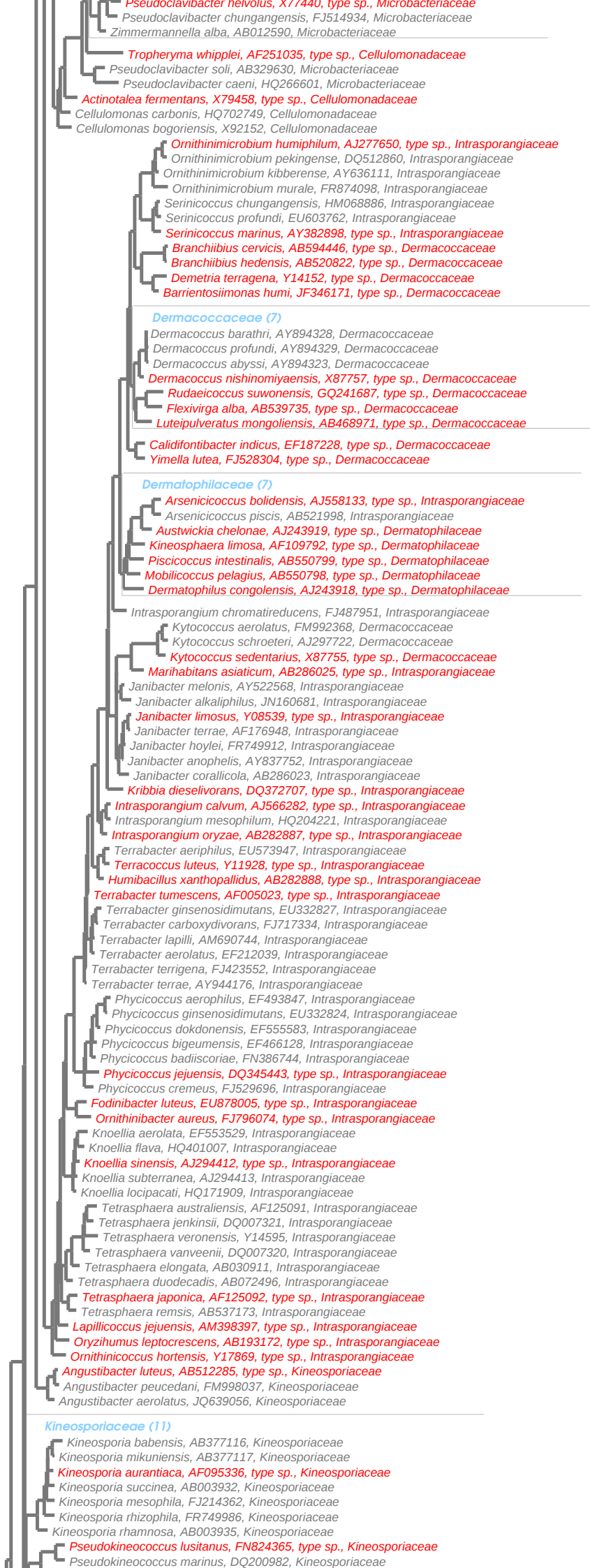
Actinomycetaceae (61)

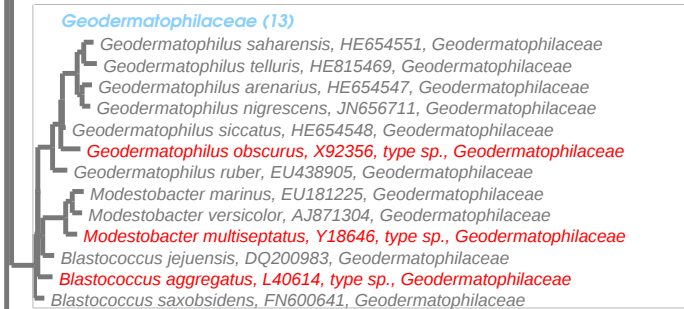






Leifsonia xyli subsp. cynodontis, AB016985, Microbacteriaceae
Leifsonia shinshuensis, DQ232614, Microbacteriaceae
Leifsonia soli, EU912483, Microbacteriaceae
Leifsonia poae, AF116342, Microbacteriaceae
Leifsonia lichenia, AB278552, Microbacteriaceae
Curtobacterium albidum, AB046363, Microbacteriaceae
Curtobacterium citreum, X77436, type sp., Microbacteriaceae
Curtobacterium ammoniigenes, AB266597, Microbacteriaceae
Curtobacterium flaccumfaciens, AJ312209, Microbacteriaceae
Curtobacterium herbarum, AJ310413, Microbacteriaceae
Flavobacterium oceanosedimentum, GU269547, Flavobacteriaceae
Curtobacterium pusillum, AJ784400, Microbacteriaceae
Curtobacterium luteum, X77437, Microbacteriaceae
Gryllotalpicola kribbensis, HQ832499, Microbacteriaceae
Gryllotalpicola koreensis, HQ832501, type sp., Microbacteriaceae
Gryllotalpicola daejeonensis, HQ832502, Microbacteriaceae
Gryllotalpicola ginsengisoli, EF587758, Microbacteriaceae
Humibacter albus, AM494541, type sp., Microbacteriaceae
Schumannella luteola, AB362159, type sp., Microbacteriaceae
Leifsonia rubra, AJ438585, Microbacteriaceae
Rhodoglobus vestalii, AJ459101, type sp., Microbacteriaceae
Rhodoglobus aureus, AJ438586, Microbacteriaceae
Salinibacterium amurskyense, AF539697, type sp., Microbacteriaceae
Salinibacterium xinjiangense, DQ515964, Microbacteriaceae
Leifsonia bigeumensis, EF466124, Microbacteriaceae
Homoserinimonas aerilata, JQ639053, type sp., Microbacteriaceae
Agreia bicolorata, AF159363, type sp., Microbacteriaceae
Agreia pratensis, AJ310412, Microbacteriaceae
Subtercola boreus, AF224722, type sp., Microbacteriaceae
Subtercola frigoramans, AF224723, Microbacteriaceae
Microcella alkaliphila, AJ717385, Microbacteriaceae
Microcella putealis, AJ717388, type sp., Microbacteriaceae
Yonghaparkia alkaliphila, DQ256087, type sp., Microbacteriaceae
Chryseoglobus frigidaquae, EF373534, type sp., Microbacteriaceae
Lysinimonas kribbensis, EF466129, Microbacteriaceae
Herbiconiux ginsengi, DQ473536, type sp., Microbacteriaceae
Herbiconiux solani, FN432340, Microbacteriaceae
Herbiconiux flava, AB583921, Microbacteriaceae
Herbiconiux moechotypicola, FJ828659, Microbacteriaceae
Leucobacter alluvii, AM072820, Microbacteriaceae
Leucobacter chromiirensistens, GU390657, Microbacteriaceae
Leucobacter chironomi, EU346911, Microbacteriaceae
Leucobacter celer, GQ504012, Microbacteriaceae
Leucobacter albus, AB012594, Microbacteriaceae
Leucobacter komagatae, D45063, type sp., Microbacteriaceae
Leucobacter aridicollis, AJ781047, Microbacteriaceae
Leucobacter iarius, AM040493, Microbacteriaceae
Leucobacter denitrificans, GQ246672, Microbacteriaceae
Leucobacter chromiireducens subsp. solipictus, DQ845457, Microbacteriaceae
Leucobacter chromiireducens subsp. chromiireducens, AJ781046, Microbacteriaceae
Leucobacter luti, AM072819, Microbacteriaceae
Leucobacter aerolatus, FN597581, Microbacteriaceae
Leucobacter salsicius, GQ352403, Microbacteriaceae
Leucobacter exalbidus, AB514037, Microbacteriaceae
Leucobacter tardus, AM940158, Microbacteriaceae
Leifsonia pindariensis, AM900767, Microbacteriaceae
Microterricola viridarii, AB282862, type sp., Microbacteriaceae
Phycicola gilvus, AM286414, type sp., Microbacteriaceae
Agrococcus citreus, AB279547, Microbacteriaceae
Agrococcus jenensis, X92492, type sp., Microbacteriaceae
Agrococcus lahaulensis, DQ156908, Microbacteriaceae
Agrococcus baldri, AB279548, Microbacteriaceae
Agrococcus carbonis, GQ504748, Microbacteriaceae
Agrococcus jejuensis, AM396260, Microbacteriaceae
Agrococcus versicolor, AM940157, Microbacteriaceae
Agrococcus terreus, FJ423764, Microbacteriaceae
Agrococcus casei, DQ168427, Microbacteriaceae
Glaciibacter superstes, AB378301, type sp., Microbacteriaceae
Leifsonia antarctica, AM931710, Microbacteriaceae
Leifsonia kafniensis, AM889135, Microbacteriaceae
Leifsonia psychrotolerans, GQ406810, Microbacteriaceae
Marisediminicola antarctica, GQ496083, type sp., Microbacteriaceae
Fronidhabitans cladoniophilus, FN666417, Microbacteriaceae
Fronidhabitans australicus, DQ525859, type sp., Microbacteriaceae
Fronidhabitans peucedani, FM998017, Microbacteriaceae
Frigoribacterium faeni, Y18807, type sp., Microbacteriaceae
Frigoribacterium mesophilum, EF466126, Microbacteriaceae
Compostimonas suwonensis, JN000316, type sp., Microbacteriaceae
Clavibacter michiganensis subsp. sepedonicus, AM849034, Microbacteriaceae
Clavibacter michiganensis subsp. insidiosus, U09761, Microbacteriaceae
Clavibacter michiganensis subsp. tessellarius, U30254, Microbacteriaceae
Clavibacter michiganensis subsp. michiganensis, X77435, type sp., Microbacteriaceae
Clavibacter michiganensis subsp. nebraskensis, X77434, Microbacteriaceae
Rathayibacter iranicus, AM410684, Microbacteriaceae
Rathayibacter toxicus, D84127, Microbacteriaceae
Rathayibacter caricis, AF159364, Microbacteriaceae
Rathayibacter rathayi, X77439, type sp., Microbacteriaceae
Rathayibacter festucae, AM410683, Microbacteriaceae
Rathayibacter tritici, X77438, Microbacteriaceae
Cryobacterium roopkundense, EF467640, Microbacteriaceae
Cryobacterium psychrophilum, AJ544063, type sp., Microbacteriaceae
Cryobacterium flavum, HQ845195, Microbacteriaceae
Cryobacterium luteum, HQ845193, Microbacteriaceae
Cryobacterium psychrotolerans, DQ515963, Microbacteriaceae
Cryobacterium arcticum, GQ406814, Microbacteriaceae
Amnibacterium kyonggiense, FJ527819, type sp., Microbacteriaceae
Labedella gwakjiensis, DQ533552, type sp., Microbacteriaceae
Cryobacterium mesophilum, EF466127, Microbacteriaceae
Klugiella xanthotipulae, AY372075, type sp., Microbacteriaceae
Alpinimonas psychrophila, GU784868, type sp., Microbacteriaceae
Diaminobutyricimonas aerilata, JQ639052, type sp., Microbacteriaceae
Gulosibacter molinivorax, AJ306835, type sp., Microbacteriaceae
Gulosibacter chungangensis, HQ268603, Microbacteriaceae
Zimmermannella faecalis, AF300651, Microbacteriaceae
Zimmermannella bifida, AB012595, Microbacteriaceae
Pseudomonas sp. subsp. X77433, type sp., Microbacteriaceae





Streptomyces violascens, AY999737, Streptomycetaceae
Streptomyces resistomycificus, AJ399472, Streptomycetaceae
Streptomyces koyangensis, AY079156, Streptomycetaceae
Streptomyces tacrolimicus, FN429653, Streptomycetaceae
Streptomyces arenae, AJ399485, Streptomycetaceae
Streptomyces violarius, AB184316, Streptomycetaceae
Streptomyces hawaiiensis, AB184143, Streptomycetaceae
Streptomyces massasporeus, AB184152, Streptomycetaceae
Streptomyces luteogriseus, AB184379, Streptomycetaceae
Streptomyces janthinus, AB184851, Streptomycetaceae
Streptomyces violaceus, AB184315, Streptomycetaceae
Streptomyces albosporeus subsp. *albosporeus*, AJ781327, Streptomycetaceae
Streptomyces roseoviolaceus, AJ399484, Streptomycetaceae
Streptomyces flavoviridis, AB184842, Streptomycetaceae
Streptomyces pilosus, AB184161, Streptomycetaceae
Streptomyces atrovirens, DQ026672, Streptomycetaceae
Streptomyces shenzhenensis, HQ660226, Streptomycetaceae
Streptomyces gramineus, HM748598, Streptomycetaceae
Streptomyces niveiscabiei, AF361786, Streptomycetaceae
Streptomyces cinerochromogenes, AB184507, Streptomycetaceae
Streptomyces deserti, HE577172, Streptomycetaceae
Streptomyces thermocoprophilus, AJ007402, Streptomycetaceae
Streptomyces mexicanus, AB249966, Streptomycetaceae
Streptomyces cinereospinus, AB184648, Streptomycetaceae
Streptomyces coeruleofuscus, DQ026668, Streptomycetaceae
Streptomyces thermovulgaris, Z68094, Streptomycetaceae
Streptomyces thermogriseus, AB249980, Streptomycetaceae
Streptomyces thermoalcalitolerans, AB249909, Streptomycetaceae
Streptomyces thermoviolaceus subsp. *apingens*, Z68095, Streptomycetaceae
Streptomyces chromofuscus, AB184194, Streptomycetaceae
Streptomyces bluensis, AB184421, Streptomycetaceae
Streptomyces thermocarboxydovorans, U94489, Streptomycetaceae
Streptomyces thermoviolaceus subsp. *thermoviolaceus*, Z68096, Streptomycetaceae
Streptomyces bullii, HE591384, Streptomycetaceae
Streptomyces hyderabadensis, FM998652, Streptomycetaceae
Streptomyces lomondensis, AB184673, Streptomycetaceae
Streptomyces coeruleoprunus, AB184651, Streptomycetaceae
Streptomyces somaliensis, AJ007403, Streptomycetaceae
Streptomyces fradiae, DQ026630, Streptomycetaceae
Streptomyces glomeratus, AB249917, Streptomycetaceae
Streptomyces chiangmaiensis, AB562507, Streptomycetaceae
Streptomyces lannensis, AB562508, Streptomycetaceae
Streptomyces bangladeshensis, AY750056, Streptomycetaceae
Streptomyces rameus, AY999821, Streptomycetaceae
Streptomyces griseosporeus, AB184419, Streptomycetaceae
Streptomyces indiaensis, AB184553, Streptomycetaceae
Streptomyces purpurascens, AJ399486, Streptomycetaceae
Streptomyces iakyrus, AB184877, Streptomycetaceae
Streptomyces coerulescens, AY999720, Streptomycetaceae
Streptomyces bellus, AB184849, Streptomycetaceae
Streptomyces lusitanus, AB184424, Streptomycetaceae
Streptomyces thermocarboxyidus, U94490, Streptomycetaceae
Streptomyces speibonae, AF452714, Streptomycetaceae
Streptomyces longispororuber, AB184440, Streptomycetaceae
Streptomyces viridodiataticus, AY999852, Streptomycetaceae
Streptomyces coeruleorubidus, AY999719, Streptomycetaceae
Streptomyces malachitospinus, AB249954, Streptomycetaceae
Streptomyces parvulus, AB184326, Streptomycetaceae
Streptomyces spinoverrucosus, AB184578, Streptomycetaceae
Streptomyces olivaceus, AB184743, Streptomycetaceae
Streptomyces pactum, AB184398, Streptomycetaceae
Streptomyces anthocyanicus, AB184631, Streptomycetaceae
Streptomyces tricolor, AB184687, Streptomycetaceae
Streptomyces coelescens, AF503496, Streptomycetaceae
Streptomyces humiferus, AF503491, Streptomycetaceae
Streptomyces violaceolatus, AF503497, Streptomycetaceae
Streptomyces violaceoruber, AF503492, Streptomycetaceae
Streptomyces coelicoflavus, AB184650, Streptomycetaceae
Streptomyces fragilis, AY999917, Streptomycetaceae
Streptomyces rubrogriseus, AB184681, Streptomycetaceae
Streptomyces violaceorubidus, AJ781374, Streptomycetaceae
Streptomyces tendae, D63873, Streptomycetaceae
Streptomyces diastaticus subsp. *ardesiacus*, DQ026631, Streptomycetaceae
Streptomyces tritolerans, DQ345779, Streptomycetaceae
Streptomyces lienomycini, AJ781353, Streptomycetaceae
Streptomyces chattanoogaensis, AY295791, Streptomycetaceae
Streptomyces albogriseolus, AY177662, Streptomycetaceae
Streptomyces marokkonensis, AJ965470, Streptomycetaceae
Streptomyces thinghirensis, FM202482, Streptomycetaceae
Streptomyces achromogenes subsp. *rubradiris*, AY999846, Streptomycetaceae
Streptomyces althoticus, AY999808, Streptomycetaceae
Streptomyces matensis, AB184221, Streptomycetaceae
Streptomyces griseorubens, AB184139, Streptomycetaceae
Streptomyces labedae, AB184704, Streptomycetaceae
Streptomyces variabilis, DQ442551, Streptomycetaceae
Streptomyces erythrogriseus, AJ781328, Streptomycetaceae
Streptomyces griseoincarnatus, AJ781321, Streptomycetaceae
Streptomyces heliomycini, AB184712, Streptomycetaceae
Streptomyces albaduncus, AY999757, Streptomycetaceae
Streptomyces griseoalbus, AB184275, Streptomycetaceae
Streptomyces malachitofuscus, AB184282, Streptomycetaceae
Streptomyces griseoflavus, AJ781322, Streptomycetaceae
Streptomyces gougerotii, AB184742, Streptomycetaceae
Streptomyces rutgersensis, AB184170, Streptomycetaceae
Streptomyces diastaticus subsp. *diastaticus*, AB184785, Streptomycetaceae
Streptomyces intermedius, AB184277, Streptomycetaceae
Streptomyces aureovorticellatus, AY999774, Streptomycetaceae
Streptomyces silaceus, EU812170, Streptomycetaceae
Streptomyces flavofungini, AB184359, Streptomycetaceae
Streptomyces fulvissimus, AB184787, Streptomycetaceae
Streptomyces spectabilis, AB184393, Streptomycetaceae
Streptomyces alboflavus, EF178699, Streptomycetaceae
Streptomyces variegatus, AJ781371, Streptomycetaceae
Streptomyces scopiformis, AF184081, Streptomycetaceae
Streptomyces griseoaurantiacus, AB184676, Streptomycetaceae
Streptomyces iitaisiensis, AY314783, Streptomycetaceae

Streptomyces collinus, AB184123, Streptomycetaceae
Streptomyces paradoxus, AB184628, Streptomycetaceae
Streptomyces violaceochromogenes, AY999867, Streptomycetaceae
Streptomyces ambofaciens, AB184182, Streptomycetaceae
Streptomyces eurythermus, D63870, Streptomycetaceae
Streptomyces nodosus, AF114033, Streptomycetaceae
Streptomyces viridochromogenes, DQ442555, Streptomycetaceae
Streptomyces glaucescens, AB184843, Streptomycetaceae
Streptomyces pharetreae, AY699792, Streptomycetaceae
Streptomyces flaveolus, AB184764, Streptomycetaceae
Streptomyces misionensis, EF178678, Streptomycetaceae
Streptomyces phaeoluteichromogenes, AJ391814, Streptomycetaceae
Streptomyces griseofuscus, AB184206, Streptomycetaceae
Streptomyces murinus, AB184155, Streptomycetaceae
Streptomyces costaricanus, AB249939, Streptomycetaceae
Streptomyces phaeogriseichromatogenes, AJ391813, Streptomycetaceae
Streptomyces echinatus, AJ399465, Streptomycetaceae
Streptomyces lanatus, AB184845, Streptomycetaceae
Streptomyces durhamensis, AY999785, Streptomycetaceae
Streptomyces filipinensis, AB184198, Streptomycetaceae
Streptomyces puniscabiei, AF361785, Streptomycetaceae
Streptomyces yokosukanensis, DQ026652, Streptomycetaceae
Streptomyces cellostaticus, AY999742, Streptomycetaceae
Streptomyces galbus, X79852, Streptomycetaceae
Streptomyces longwoodensis, AB184580, Streptomycetaceae
Streptomyces bungoensis, AB184696, Streptomycetaceae
Streptomyces capoamus, AB045877, Streptomycetaceae
Streptomyces regensis, DQ026649, Streptomycetaceae
Streptomyces corchorusii, AB184267, Streptomycetaceae
Streptomyces olivaceoviridis, AB184288, Streptomycetaceae
Streptomyces canarius, AB184396, Streptomycetaceae
Streptomyces lucensis, DQ442522, Streptomycetaceae
Streptomyces niveoruber, DQ445796, Streptomycetaceae
Streptomyces achromogenes subsp. *achromogenes*, AB184109, Streptomycetaceae
Streptomyces griseorubiginosus, AJ781339, Streptomycetaceae
Streptomyces phaeopurpureus, DQ026666, Streptomycetaceae
Streptomyces prunicolor, DQ026659, Streptomycetaceae
Streptomyces mirabilis, AB184412, Streptomycetaceae
Streptomyces kaempferi, HE591382, Streptomycetaceae
Streptomyces olivochromogenes, AY094370, Streptomycetaceae
Streptomyces atriruber, EU812169, Streptomycetaceae
Streptomyces avermiltilis, BA000030, Streptomycetaceae
Streptomyces ziwulingensis, JF957700, Streptomycetaceae
Streptomyces cinereus, AB184072, Streptomycetaceae
Streptomyces flaveus, DQ026643, Streptomycetaceae
Streptomyces vastus, DQ442552, Streptomycetaceae
Streptomyces indicus, EF157833, Streptomycetaceae
Streptomyces aureocirculatus, AY999861, Streptomycetaceae
Streptomyces novaecaesareae, AB184357, Streptomycetaceae
Streptomyces bobili, AB184328, Streptomycetaceae
Streptomyces galliae, AB045878, Streptomycetaceae
Streptomyces phaeoluteigriseus, AJ391815, Streptomycetaceae
Streptomyces flavovariabilis, EF178691, Streptomycetaceae
Streptomyces chartreusis, AB184839, Streptomycetaceae
Streptomyces osmaniensis, FJ613126, Streptomycetaceae
Streptomyces plumbiresistens, EU526954, Streptomycetaceae
Streptomyces alboniger, AY845349, Streptomycetaceae
Streptomyces griseoluteus, AY999751, Streptomycetaceae
Streptomyces recifensis, AB184165, Streptomycetaceae
Streptomyces seoulensis, AB249970, Streptomycetaceae
Streptomyces pseudovenezuelae, AB184233, Streptomycetaceae
Streptomyces canus, AY999775, Streptomycetaceae
Streptomyces ciscaucasicus, AB184208, Streptomycetaceae
Streptomyces caeruleatus, GQ329712, Streptomycetaceae
Streptomyces lincolniensis, AB184279, Streptomycetaceae
Streptomyces shaanxiensis, FJ465151, Streptomycetaceae
Streptomyces durmitorensis, DQ067287, Streptomycetaceae
Streptomyces rectiviolaceus, DQ026660, Streptomycetaceae
Streptomyces aureus, AY094368, Streptomycetaceae
Streptomyces kanamyceticus, DQ442511, Streptomycetaceae
Streptomyces ederensis, AY999824, Streptomycetaceae
Streptomyces umbrinus, AB184305, Streptomycetaceae
Streptomyces phaeochromogenes, AB184738, Streptomycetaceae
Streptomyces tauricus, AB045879, Streptomycetaceae
Streptomyces aurantiacus, AJ781383, Streptomycetaceae
Streptomyces glomeroaurantiacus, AB249983, Streptomycetaceae
Streptomyces bottropensis, AB184262, Streptomycetaceae
Streptomyces stelliscabiei, AJ007429, Streptomycetaceae
Streptomyces cacaoi subsp. *asoensis*, DQ026644, Streptomycetaceae
Streptomyces humidus, DQ442508, Streptomycetaceae
Streptomyces rishiriensis, EF178682, Streptomycetaceae
Streptomyces reticuliscabiei, AJ007428, Streptomycetaceae
Streptomyces turgidiscabies, AB026221, Streptomycetaceae
Streptomyces hygroscopicus subsp. *ossamyceticus*, AB184560, Streptomycetaceae
Streptomyces torulosus, AJ781367, Streptomycetaceae
Streptomyces ipomoeae, AB184857, Streptomycetaceae
Streptomyces decoyicus, EU170127, Streptomycetaceae
Streptomyces neyagawaensis, D63869, Streptomycetaceae
Streptomyces heilongjiangensis, JF431459, Streptomycetaceae
Streptomyces diastatochromogenes, D63867, Streptomycetaceae
Streptomyces europaeiscabiei, AY207598, Streptomycetaceae
Streptomyces scabiei, D63862, Streptomycetaceae
Streptomyces decanensis, EF219459, Streptomycetaceae
Streptomyces cinereoruber subsp. *fructofermentans*, AY999758, Streptomycetaceae
Streptomyces phaeofaciens, AB184360, Streptomycetaceae
Streptomyces puniceus, DQ442542, Streptomycetaceae
Streptomyces cyaneus, AF346475, Streptomycetaceae
Streptomyces acidiscabies, D63865, Streptomycetaceae
Streptomyces spongiae, AB498741, Streptomycetaceae
Streptomyces griseoruber, AB184209, Streptomycetaceae
Streptomyces antibioticus, AY999776, Streptomycetaceae
Streptomyces alanosinicus, AB184442, Streptomycetaceae
Streptomyces kunmingensis, DQ442513, Streptomycetaceae
Streptomyces endophyticus, GU367154, Streptomycetaceae
Streptomyces cinnabarinus, AB184266, Streptomycetaceae

Streptomyces curacoi, AB184841, Streptomycetaceae
 | *Streptomyces flavidovirens*, AB184270, Streptomycetaceae
 | *Streptomyces longisporus*, AJ399475, Streptomycetaceae
 | *Streptomyces coacervatus*, AB500703, Streptomycetaceae
 | *Streptomyces laurentii*, AJ781342, Streptomycetaceae
 | *Streptomyces termitum*, AB184302, Streptomycetaceae
 | *Streptomyces roseofulvus*, AB184327, Streptomycetaceae
 | *Streptomyces roseolus*, AB184168, Streptomycetaceae
 | *Streptomyces filamentosus*, AB184130, Streptomycetaceae
 | *Streptomyces showdoensis*, AB184389, Streptomycetaceae
 | *Streptomyces viridobrunneus*, AJ781372, Streptomycetaceae
 | *Streptomyces roseoviridis*, AB184239, Streptomycetaceae
 | *Streptomyces gulbargensis*, DQ317411, Streptomycetaceae
 | *Streptomyces albidochromogenes*, AB249953, Streptomycetaceae
 | *Streptomyces enissocaesilis*, AB249930, Streptomycetaceae
 | *Streptomyces chryseus*, AY999787, Streptomycetaceae
 | *Streptomyces helveticus*, AB184367, Streptomycetaceae
 | *Streptomyces hypolithicus*, EU196762, Streptomycetaceae
 | *Streptomyces albosporeus* subsp. *labilomyceticus*, AB184638, Streptomycetaceae
 | *Streptomyces nashvillensis*, AB184286, Streptomycetaceae
 | *Streptomyces cinereoruber* subsp. *cinereoruber*, AY999771, Streptomycetaceae
 | *Streptomyces hirsutus*, DQ442506, Streptomycetaceae
 | *Streptomyces violaceorectus*, AB184314, Streptomycetaceae
 | *Streptomyces bikiniensis*, X79851, Streptomycetaceae
 | *Streptomyces vietnamensis*, DQ311081, Streptomycetaceae
 | *Streptomyces litmocidini*, AB184149, Streptomycetaceae
 | *Streptomyces yerevanensis*, EF178684, Streptomycetaceae
 | *Streptomyces omiyaensis*, EF178697, Streptomycetaceae
 | *Streptomyces wedmorensis*, DQ442557, Streptomycetaceae
 | *Streptomyces zaomyceticus*, EF178685, Streptomycetaceae
 | *Streptomyces exfoliatus*, AB184324, Streptomycetaceae
 | *Streptomyces narbonensis*, DQ445794, Streptomycetaceae
 | *Streptomyces lateritius*, AJ781326, Streptomycetaceae
 | *Streptomyces venezuelae*, AB045890, Streptomycetaceae
 | *Streptomyces nojiriensis*, AJ781355, Streptomycetaceae
 | *Streptomyces vinaceus*, AB184394, Streptomycetaceae
 | *Streptomyces spororaveus*, AJ781370, Streptomycetaceae
 | *Streptomyces xanthophaeus*, DQ442560, Streptomycetaceae
 | *Streptomyces cirratus*, AY999794, Streptomycetaceae
 | *Streptomyces avidinii*, AB184395, Streptomycetaceae
 | *Streptomyces subrutilus*, X80825, Streptomycetaceae
 | *Streptomyces lavendulae* subsp. *grasserius*, AY999841, Streptomycetaceae
 | *Streptomyces sporoverrucosus*, DQ442544, Streptomycetaceae
 | *Streptomyces goshikiensis*, EF178693, Streptomycetaceae
 | *Streptomyces colombiensis*, DQ026646, Streptomycetaceae
 | *Streptomyces lavendulae* subsp. *lavendulae*, D85116, Streptomycetaceae
 | *Streptomyces cinnamonensis*, AB184707, Streptomycetaceae
 | *Streptomyces virginiae*, AB184175, Streptomycetaceae
 | *Streptomyces globosus*, AJ781330, Streptomycetaceae
 | *Streptomyces toxytricini*, DQ442548, Streptomycetaceae
 | *Streptomyces flavotricini*, AY999915, Streptomycetaceae
 | *Streptomyces polychromogenes*, AB184292, Streptomycetaceae
 | *Streptomyces racemochromogenes*, DQ026656, Streptomycetaceae
 | *Streptomyces katrae*, AB184409, Streptomycetaceae
 | *Streptomyces clavuligerus*, AY999718, Streptomycetaceae
 | *Streptomyces kurssanovii*, AB184325, Streptomycetaceae
 | *Streptomyces xantholiticus*, AB184349, Streptomycetaceae
 | *Streptomyces peucetius*, AB045887, Streptomycetaceae
 | *Streptomyces sanyensis*, FJ261968, Streptomycetaceae
 | *Streptomyces cremeus*, AY999744, Streptomycetaceae
 | *Streptomyces spiroverticillatus*, AB184814, Streptomycetaceae
 | *Streptomyces sanglieri*, AB249945, Streptomycetaceae
 | *Streptomyces yanii*, AB006159, Streptomycetaceae
 | *Streptomyces atratus*, DQ026638, Streptomycetaceae
 | *Streptomyces gelaticus*, DQ026636, Streptomycetaceae
 | *Streptomyces pulveraceus*, AB184806, Streptomycetaceae
 | *Streptomyces beijiangensis*, AF385681, Streptomycetaceae
 | *Streptomyces fildesensis*, DQ408297, Streptomycetaceae
 | *Streptomyces laculatispora*, FR692106, Streptomycetaceae
 | *Streptomyces brevispora*, FR692104, Streptomycetaceae
 | *Streptomyces drozdowiczii*, AB249957, Streptomycetaceae
 | *Streptomyces globisporus*, EF178686, Streptomycetaceae
 | *Streptomyces rubiginosohelvolus*, AB184240, Streptomycetaceae
 | *Streptomyces tanashiensis*, AY999856, Streptomycetaceae
 | *Streptomyces pluricologrescens*, DQ442540, Streptomycetaceae
 | *Streptomyces flavogriseus*, AJ494864, Streptomycetaceae
 | *Streptomyces flavovirens*, DQ026635, Streptomycetaceae
 | *Streptomyces nitrosporeus*, EF178680, Streptomycetaceae
 | *Streptomyces griseolus*, AB184768, Streptomycetaceae
 | *Streptomyces halstedii*, EF178695, Streptomycetaceae
 | *Streptomyces cinereorectus*, AB184646, Streptomycetaceae
 | *Streptomyces fulvorobeus*, AB184711, Streptomycetaceae
 | *Streptomyces microflavus*, DQ445795, Streptomycetaceae
 | *Streptomyces griseus*, AY207604, Streptomycetaceae
 | *Streptomyces cyaneofuscatus*, AB184860, Streptomycetaceae
 | *Streptomyces anulatus*, DQ026637, Streptomycetaceae
 | *Streptomyces chrysomallus* subsp. *chrysomallus*, AB184120, Streptomycetaceae
 | *Streptomyces griseoplanus*, AY999894, Streptomycetaceae
 | *Streptomyces badius*, AY999783, Streptomycetaceae
 | *Streptomyces sindenensis*, AB184759, Streptomycetaceae
 | *Streptomyces parvus*, DQ442537, Streptomycetaceae
 | *Streptomyces setonii*, AB184300, Streptomycetaceae
 | *Streptomyces atroolivaceus*, AJ781320, Streptomycetaceae
 | *Streptomyces claviger*, DQ026670, Streptomycetaceae
 | *Streptomyces mutomycini*, AB249951, Streptomycetaceae
 | *Streptomyces finlayi*, AY999788, Streptomycetaceae
 | *Streptomyces candidus*, DQ026663, Streptomycetaceae
 | *Streptomyces albolongus*, AB184425, Streptomycetaceae
 | *Streptomyces cavourensis*, DQ445791, Streptomycetaceae
 | *Streptomyces bacillaris*, AB184439, Streptomycetaceae
 | *Streptomyces crystallinus*, AB184652, Streptomycetaceae
 | *Streptomyces avellaneus*, AB184413, Streptomycetaceae
 | *Streptomyces psammoticus*, AY999862, Streptomycetaceae
 | *Streptomyces aureofaciens*, AY207608, Streptomycetaceae
 | *Kitasatospora putterlickiae*, AY189976, Streptomycetaceae

Streptomyces chrysomallus subsp. *fumigatus*, AB184645, Streptomycetaceae
Streptomyces purpureus, AJ781324, Streptomycetaceae
Streptomyces xanthocidicus, AY999858, Streptomycetaceae
Streptomyces aburaviensis, AY999886, Streptomycetaceae
Kitasatospora kazusensis, AB278569, Streptomycetaceae
Kitasatospora mediocidica, U93324, Streptomycetaceae
Kitasatospora gansuensis, AY442265, Streptomycetaceae
Kitasatospora atroaurantiaca, DQ026645, Streptomycetaceae
Streptomyces purpeofuscus, AJ781364, Streptomycetaceae
Streptomyces herbaricolor, AB184801, Streptomycetaceae
Streptomyces indigoferus, AB184214, Streptomycetaceae
Kitasatospora azatica, U93312, Streptomycetaceae
Kitasatospora nipponensis, AY442263, Streptomycetaceae
Kitasatospora kifunensis, U93322, Streptomycetaceae
Kitasatospora cineracea, AB022875, Streptomycetaceae
Kitasatospora niigatensis, AB249960, Streptomycetaceae
Kitasatospora setae, U93332, type sp., Streptomycetaceae
Kitasatospora paracochleata, U93328, Streptomycetaceae
Kitasatospora cochleata, U93316, Streptomycetaceae
Kitasatospora cystarginea, AY999887, Streptomycetaceae
Kitasatospora griseola, U93320, Streptomycetaceae
Kitasatospora cheerisanensis, AF050493, Streptomycetaceae
Kitasatospora phosalacinea, AB022869, Streptomycetaceae
Kitasatospora arboriphila, AY442267, Streptomycetaceae
Kitasatospora viridis, AY613990, Streptomycetaceae
Kitasatospora saccharophila, AB278568, Streptomycetaceae
Kitasatospora terrestris, AY442266, Streptomycetaceae
Kitasatospora paranensis, AY442268, Streptomycetaceae
Streptacidiphilus anmyonensis, DQ904546, Streptomycetaceae
Streptacidiphilus jiangxiensis, AB249948, Streptomycetaceae
Streptacidiphilus melanogenes, DQ994689, Streptomycetaceae
Streptacidiphilus rugosus, DQ904547, Streptomycetaceae
Streptacidiphilus neutrinimicus, AB249949, Streptomycetaceae
Streptacidiphilus albus, AF074415, type sp., Streptomycetaceae
Streptacidiphilus carbonis, AF074412, Streptomycetaceae
Streptomyces scopuliridis, EF657884, Streptomycetaceae
Streptomyces sannanensis, AB184579, Streptomycetaceae
Streptomyces michiganensis, AB184153, Streptomycetaceae
Streptomyces xanthochromogenes, DQ442559, Streptomycetaceae
Streptomyces mauvecolor, AB184532, Streptomycetaceae
Streptomyces polyanthibioticus, DQ141528, Streptomycetaceae
Streptomyces melanogenes, AB184222, Streptomycetaceae
Streptomyces noboritoensis, AB184287, Streptomycetaceae
Streptomyces amakusaensis, AY999781, Streptomycetaceae
Streptomyces inusitatus, AB184445, Streptomycetaceae
Streptomyces luridus, DQ442523, Streptomycetaceae
Streptomyces roseolilacinus, AB184167, Streptomycetaceae
Streptomyces gobitricini, AB184666, Streptomycetaceae
Streptomyces lavendofoliae, AJ781336, Streptomycetaceae
Streptomyces werraensis, DQ442558, Streptomycetaceae
Streptomyces eurocidicus, AY999790, Streptomycetaceae
Streptomyces netropsis, EF178671, Streptomycetaceae
Streptomyces stramineus, AB184720, Streptomycetaceae
Streptomyces olivoverticillatus, AB184636, Streptomycetaceae
Streptomyces orinoci, AB184866, Streptomycetaceae
Streptomyces morookaense, AJ781349, Streptomycetaceae
Streptomyces lacticiproducens, GQ184344, Streptomycetaceae
Streptomyces lavenduligriseus, DQ442515, Streptomycetaceae
Streptomyces cinnamoneus, AB184850, Streptomycetaceae
Streptomyces pseudoechinosporeus, AB184100, Streptomycetaceae
Streptomyces lilacinus, AB184819, Streptomycetaceae
Streptomyces luteosporeus, DQ442525, Streptomycetaceae
Streptomyces arduus, AB184864, Streptomycetaceae
Streptomyces blastmyceticus, AY999802, Streptomycetaceae
Streptomyces hiroshimensis, AB184789, Streptomycetaceae
Streptomyces caeruleus, EF178675, Streptomycetaceae
Streptomyces griseocarneus, X99943, Streptomycetaceae
Streptomyces angustmyceticus, DQ442509, Streptomycetaceae
Streptomyces abikoensis, AY999834, Streptomycetaceae
Streptomyces varsoviensis, DQ026653, Streptomycetaceae
Streptomyces luteireticuli, AB249969, Streptomycetaceae
Streptomyces thioluteus, AB184753, Streptomycetaceae
Streptomyces mashuensis, X79323, Streptomycetaceae
Streptomyces mobaraensis, DQ442528, Streptomycetaceae
Streptomyces ochraceiscleroticus, AB184094, Streptomycetaceae
Streptomyces purpurogeneiscleroticus, AJ621604, Streptomycetaceae
Streptomyces violens, AJ621605, Streptomycetaceae
Streptomyces niger, AJ621607, Streptomycetaceae
Streptomyces olivaceiscleroticus, AJ621606, Streptomycetaceae
Streptomyces monomycinii, DQ445790, Streptomycetaceae
Streptomyces caniferus, AB184640, Streptomycetaceae
Streptomyces hygroscopicus subsp. *decoyicus*, AY999883, Streptomycetaceae
Streptomyces libani subsp. *rufus*, AJ781351, Streptomycetaceae
Streptomyces hygroscopicus subsp. *glebosus*, AB184479, Streptomycetaceae
Streptomyces platensis, AB045882, Streptomycetaceae
Streptomyces lydicus, Y15507, Streptomycetaceae
Streptomyces libani subsp. *libani*, AB184414, Streptomycetaceae
Streptomyces tubercidicus, AJ621612, Streptomycetaceae
Streptomyces ramulosus, DQ026662, Streptomycetaceae
Streptomyces sclerotialis, AJ621608, Streptomycetaceae
Streptomyces daliensis, AY785161, Streptomycetaceae
Streptomyces rimosus subsp. *rimosus*, AB045883, Streptomycetaceae
Streptomyces albofaciens, AB045880, Streptomycetaceae
Streptomyces chrestomyceticus, AJ621609, Streptomycetaceae
Streptomyces rimosus subsp. *paromomycinus*, AJ621610, Streptomycetaceae
Streptomyces catenulae, AJ621613, Streptomycetaceae
Streptomyces misakiensis, AB217605, Streptomycetaceae
Streptomyces lunalinharesii, DQ094838, Streptomycetaceae
Streptomyces auratus, AJ391816, Streptomycetaceae
Streptomyces staurosporininus, FR692111, Streptomycetaceae
Streptomyces nigrescens, DQ442530, Streptomycetaceae
Streptomyces sioyaensis, DQ026654, Streptomycetaceae
Streptomyces albospinus, AY999753, Streptomycetaceae
Streptomyces albulus, AB024440, Streptomycetaceae
Streptomyces ngursei, AB184678, Streptomycetaceae



Motilobacter peucedani, FM998003, type sp., Unclassified suborder Frankineae

Catenulisporaceae (4)

- Catenulispora acidiphila, AJ865857, type sp., Catenulisporaceae
- Catenulispora rubra, AB180773, Catenulisporaceae
- Catenulispora subtropica, AB327248, Catenulisporaceae
- Catenulispora yoronensis, AB327250, Catenulisporaceae

Catenulispora graminis, HM748599, Catenulisporaceae

Actinospicaceae (2)

Actinospica acidiphila, AJ865861, Actinospicaceae

Actinospica robiniae, AJ865863, type sp., Actinospicaceae

Mycobacteriaceae (156)

Mycobacterium avium subsp. paratuberculosis, X52934, Mycobacteriaceae

Mycobacterium avium subsp. silvaticum, EF521891, Mycobacteriaceae

Mycobacterium avium subsp. avium, AJ536037, Mycobacteriaceae

Mycobacterium vulneris, EU834055, Mycobacteriaceae

Mycobacterium bouchedurhonense, EF591053, Mycobacteriaceae

Mycobacterium colombiense, AM062764, Mycobacteriaceae

Mycobacterium mantenii, FJ042897, Mycobacteriaceae

Mycobacterium arosiense, EF054881, Mycobacteriaceae

Mycobacterium intracellulare, AJ536036, Mycobacteriaceae

Mycobacterium chimaera, AJ548480, Mycobacteriaceae

Mycobacterium marseillense, EU266632, Mycobacteriaceae

Mycobacterium paraffinicum, GQ153270, Mycobacteriaceae

Mycobacterium scrofulaceum, AF480604, Mycobacteriaceae

Mycobacterium seoulense, DQ536403, Mycobacteriaceae

Mycobacterium paraseoulense, DQ536404, Mycobacteriaceae

Mycobacterium malmoense, X52930, Mycobacteriaceae

Mycobacterium nebraskense, AY368456, Mycobacteriaceae

Mycobacterium bohemicum, U84502, Mycobacteriaceae

Mycobacterium tuberculosis, X58890, type sp., Mycobacteriaceae

Mycobacterium caprae, AJ131120, Mycobacteriaceae

Mycobacterium africanum, AF480605, Mycobacteriaceae

Mycobacterium microti, AF480584, Mycobacteriaceae

Mycobacterium pinnipedii, AF502574, Mycobacteriaceae

Mycobacterium marinum, AF456240, Mycobacteriaceae

Mycobacterium ulcerans, AB548725, Mycobacteriaceae

Mycobacterium pseudoshottsii, AY570988, Mycobacteriaceae

Mycobacterium shottsii, AY005147, Mycobacteriaceae

Mycobacterium shinjukuense, AB268503, Mycobacteriaceae

Mycobacterium lacus, AF406783, Mycobacteriaceae

Mycobacterium gastri, AF480602, Mycobacteriaceae

Mycobacterium kansasii, AJ536035, Mycobacteriaceae

Mycobacterium intermedium, X67847, Mycobacteriaceae

Mycobacterium botniense, AJ012756, Mycobacteriaceae

Mycobacterium xenopi, AJ536033, Mycobacteriaceae

Mycobacterium heckeshornense, AF174290, Mycobacteriaceae

Mycobacterium noviomagense, EU239955, Mycobacteriaceae

Mycobacterium shimoidei, AJ005005, Mycobacteriaceae

Mycobacterium riyadhense, EU274642, Mycobacteriaceae

Mycobacterium szulgai, X52926, Mycobacteriaceae

Mycobacterium conspicuum, X88922, Mycobacteriaceae

Mycobacterium florentinum, AJ616230, Mycobacteriaceae

Mycobacterium stomatepiae, AM884331, Mycobacteriaceae

Mycobacterium montefiorensis, AF330038, Mycobacteriaceae

Mycobacterium genavense, X60070, Mycobacteriaceae

Mycobacterium triplex, U57632, Mycobacteriaceae

Mycobacterium parmense, AF466821, Mycobacteriaceae

Mycobacterium heidelbergense, AJ000684, Mycobacteriaceae

Mycobacterium lentiflavum, AF480583, Mycobacteriaceae

Mycobacterium simiae, X52931, Mycobacteriaceae

Mycobacterium sherrisii, AY353699, Mycobacteriaceae

Mycobacterium europaeum, HM022196, Mycobacteriaceae

Mycobacterium parascrofulaceum, AY337273, Mycobacteriaceae

Mycobacterium kubicae, AF133902, Mycobacteriaceae

Mycobacterium palustre, AJ308603, Mycobacteriaceae

Mycobacterium interjectum, HM037998, Mycobacteriaceae

Mycobacterium saskatchewanense, AY208856, Mycobacteriaceae

Mycobacterium gordonae, X52923, Mycobacteriaceae

Mycobacterium asiaticum, AF480595, Mycobacteriaceae

Mycobacterium branderi, AF480574, Mycobacteriaceae

Mycobacterium kyorinense, AB370111, Mycobacteriaceae

Mycobacterium celatum, L08169, Mycobacteriaceae

Mycobacterium cookii, X53896, Mycobacteriaceae

Mycobacterium arupense, DQ157760, Mycobacteriaceae

Mycobacterium heraklionense, GU084182, Mycobacteriaceae

Mycobacterium nonchromogenicum, X52928, Mycobacteriaceae

Mycobacterium engbaekii, AF480577, Mycobacteriaceae

Mycobacterium hiberniae, X67096, Mycobacteriaceae

Mycobacterium sensu, DQ536408, Mycobacteriaceae

Mycobacterium kumamotoense, AB239925, Mycobacteriaceae

Mycobacterium algericum, GU564404, Mycobacteriaceae

Mycobacterium terrae, M29568, Mycobacteriaceae

Mycobacterium longobardum, JN571166, Mycobacteriaceae

Mycobacterium chitae, X55603, Mycobacteriaceae

Mycobacterium fallax, AF480600, Mycobacteriaceae

Mycobacterium parakoreense, JF271823, Mycobacteriaceae

Mycobacterium koreense, JF271826, Mycobacteriaceae

Mycobacterium triviale, DQ058405, Mycobacteriaceae

Mycobacterium brumae, AF480576, Mycobacteriaceae

Mycobacterium elephantis, AJ010747, Mycobacteriaceae

Mycobacterium holsaticum, AJ310467, Mycobacteriaceae

Mycobacterium pulveris, AJ429046, Mycobacteriaceae

Mycobacterium confluentis, AJ634379, Mycobacteriaceae

Mycobacterium madagascariense, AB537170, Mycobacteriaceae

Mycobacterium hassiacum, U49401, Mycobacteriaceae

Mycobacterium thermoresistibile, X55602, Mycobacteriaceae

Mycobacterium morioakaense, AJ429044, Mycobacteriaceae

Mycobacterium murale, AB537171, Mycobacteriaceae

Mycobacterium tokaiense, AF480590, Mycobacteriaceae

Mycobacterium gadium, X55594, Mycobacteriaceae

Mycobacterium goodii, Y12872, Mycobacteriaceae

Mycobacterium smegmatis, AJ131761, Mycobacteriaceae

Mycobacterium mageritense, AJ699399, Mycobacteriaceae

Mycobacterium wolinskyi, AY457083, Mycobacteriaceae

Mycobacterium duvalii, U94745, Mycobacteriaceae

Mycobacterium agri, AJ429045, Mycobacteriaceae

Mycobacterium flavescens, X52932, Mycobacteriaceae

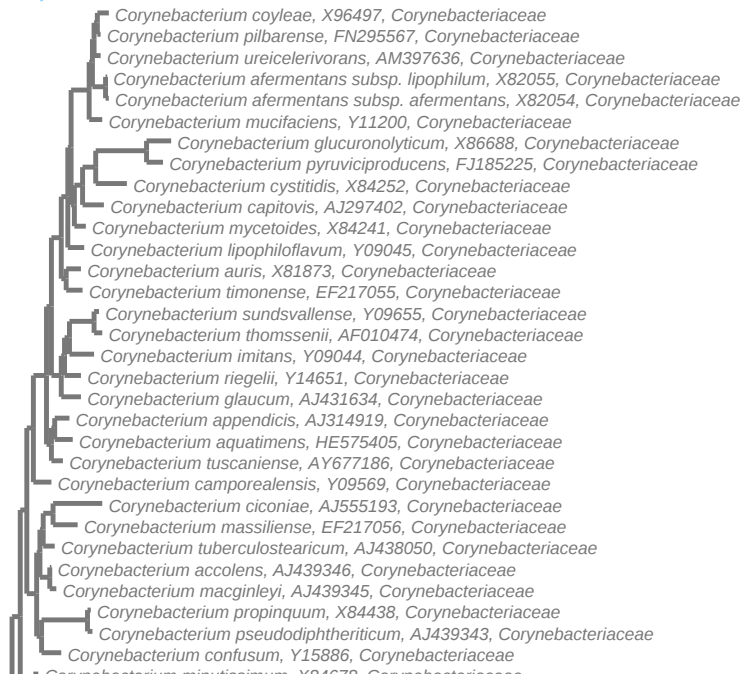
Mycobacterium rutilum, DQ370011, Mycobacteriaceae

Mycobacterium chubuense, AF480597, Mycobacteriaceae

Mycobacterium rufum, AY043385, Mycobacteriaceae

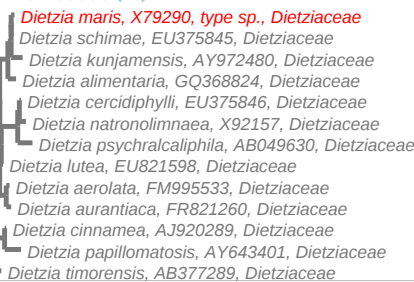


Corynebacteriaceae (90)

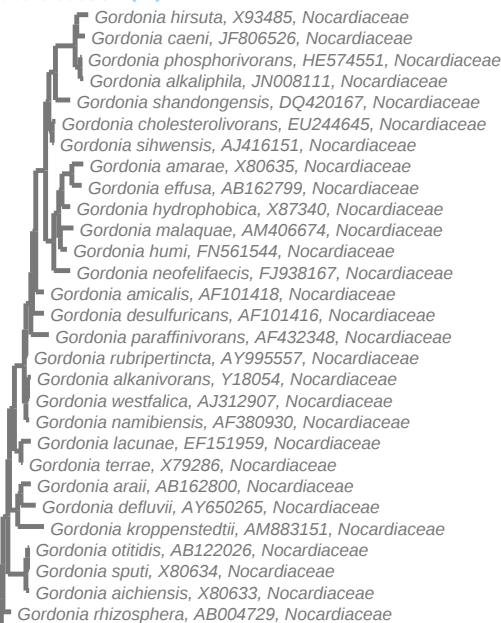


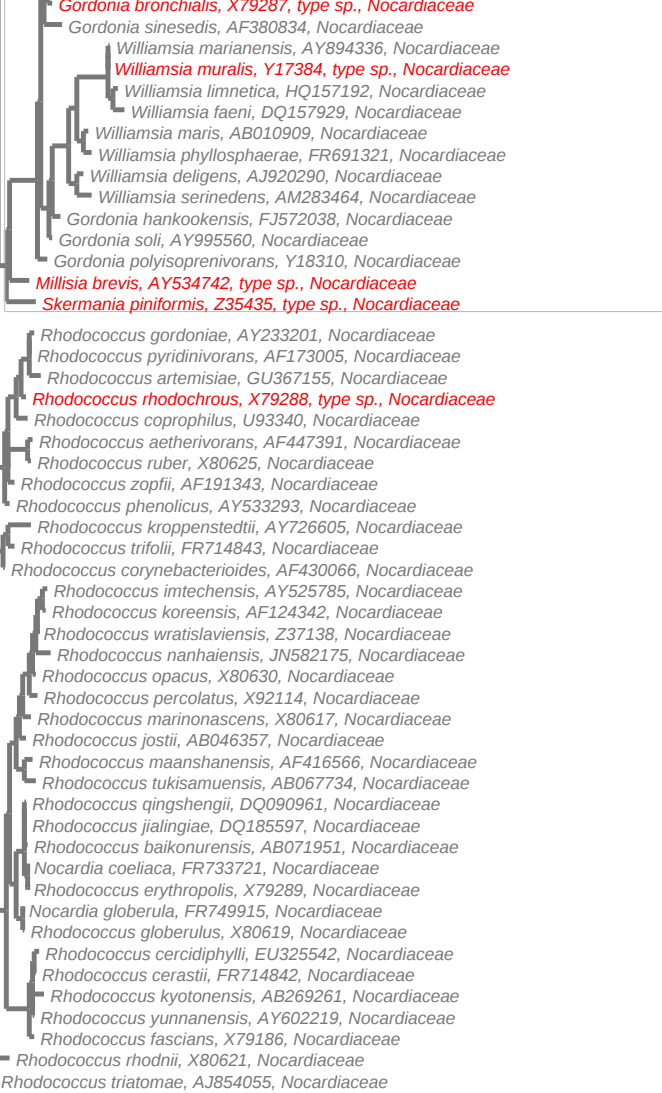


Dietziaceae (13)

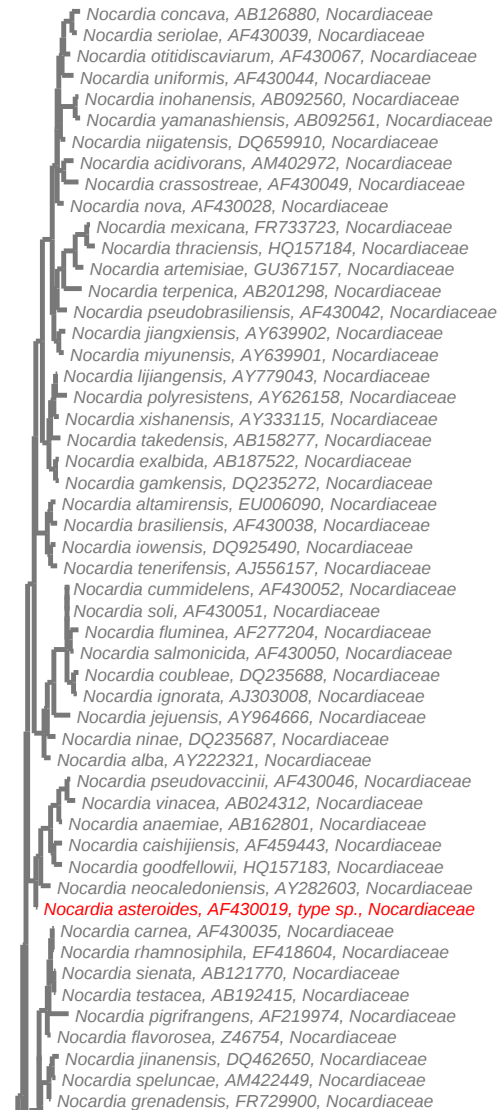


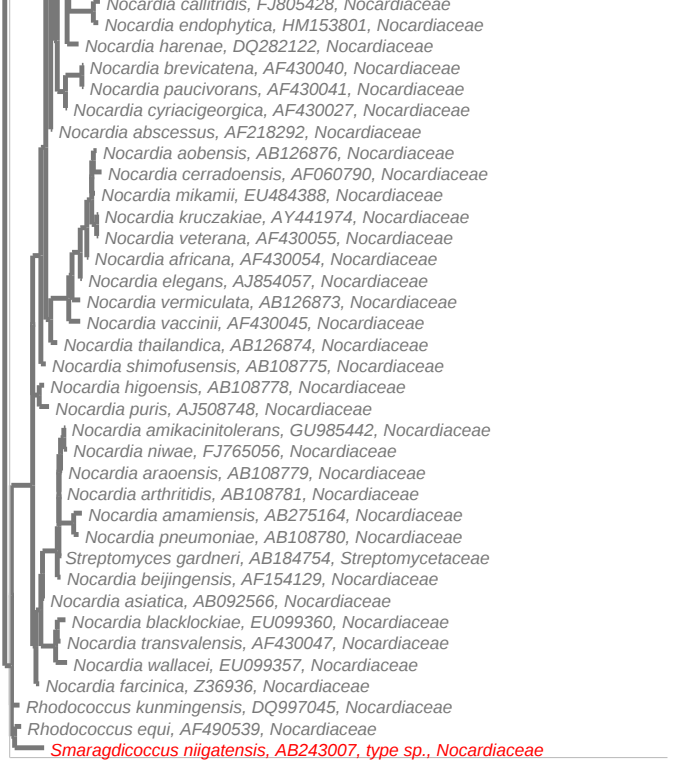
Nocardiaceae 2 (44)





Nocardiaceae 1 (88)



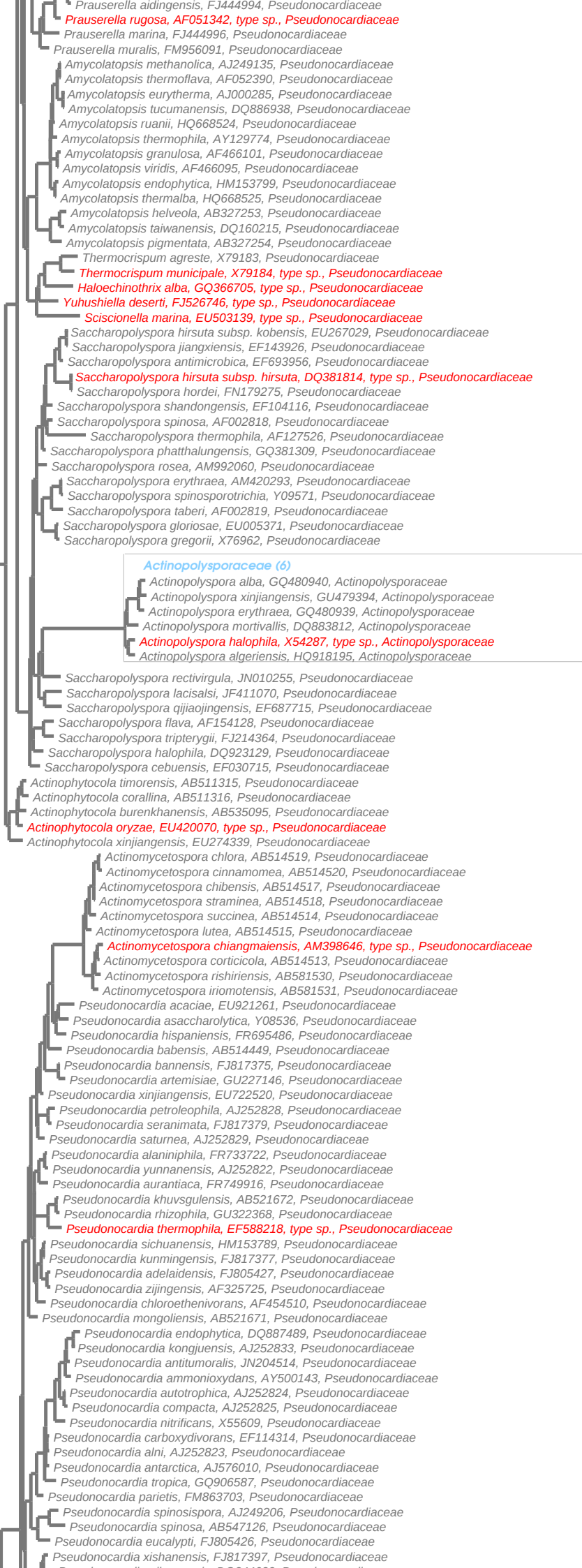


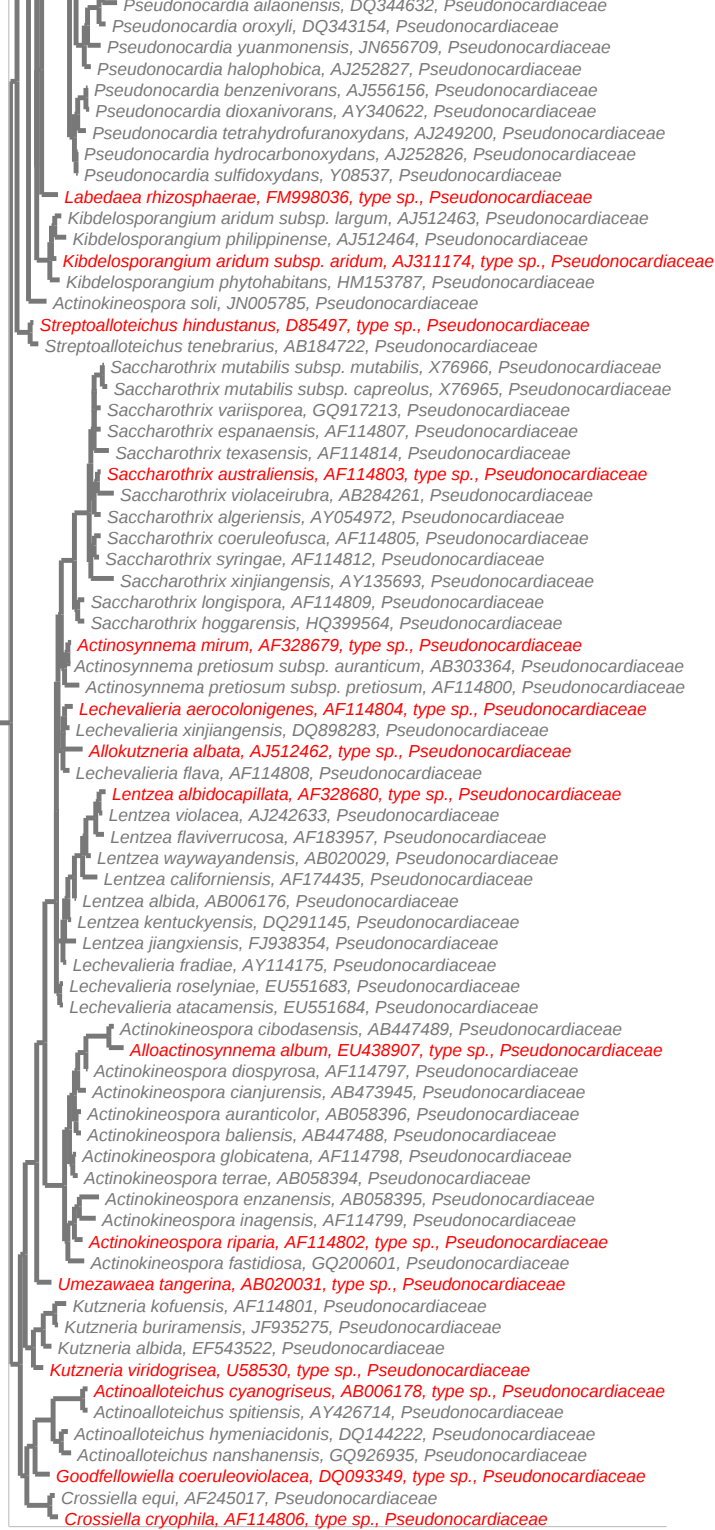
Segniliparaceae (2)

Segniliparus *rotundus*, AY608918, type sp., Segniliparaceae
Segniliparus *rugosus*, AY608920, Segniliparaceae

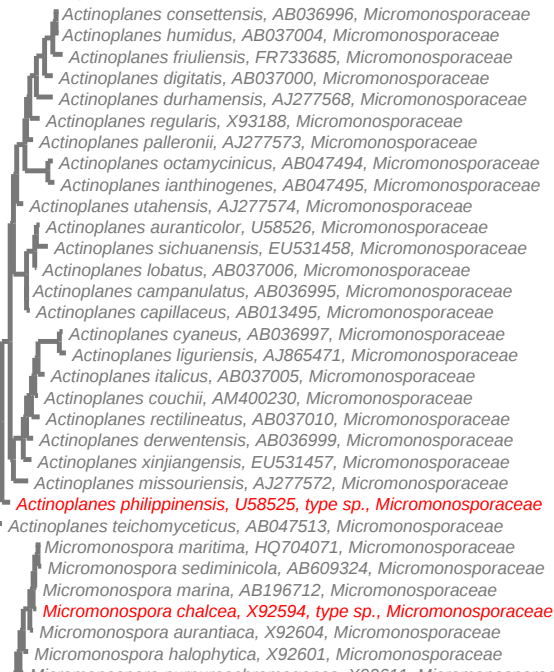
Pseudonocardiaceae (238)

Amycolatopsis *benzoatilytica*, AY957506, Pseudonocardiaceae
Amycolatopsis *niigatensis*, AB248537, Pseudonocardiaceae
Amycolatopsis *echigonensis*, AB248535, Pseudonocardiaceae
Amycolatopsis *albidoflavus*, AJ252832, Pseudonocardiaceae
Amycolatopsis *halotolerans*, DQ000196, Pseudonocardiaceae
Amycolatopsis *equina*, HQ021204, Pseudonocardiaceae
Amycolatopsis *hippodromi*, HQ021203, Pseudonocardiaceae
Amycolatopsis *circi*, HQ021202, Pseudonocardiaceae
Amycolatopsis *rubida*, AF222022, Pseudonocardiaceae
Amycolatopsis *vancoresmycina*, AJ508240, Pseudonocardiaceae
Amycolatopsis *bullii*, HQ651730, Pseudonocardiaceae
Amycolatopsis *tolypomycina*, AJ293757, Pseudonocardiaceae
Amycolatopsis *plumensis*, AY262825, Pseudonocardiaceae
Amycolatopsis *lexingtonensis*, AY183358, Pseudonocardiaceae
Amycolatopsis *pretoriensis*, AY183356, Pseudonocardiaceae
Amycolatopsis *rifamycinica*, AY083603, Pseudonocardiaceae
Amycolatopsis *kentuckyensis*, AY183357, Pseudonocardiaceae
Amycolatopsis *balhimycina*, AJ508239, Pseudonocardiaceae
Amycolatopsis *mediterranei*, AJ293754, Pseudonocardiaceae
Amycolatopsis *australiensis*, AY129753, Pseudonocardiaceae
Amycolatopsis *alba*, AF051340, Pseudonocardiaceae
Amycolatopsis *coloradensis*, AJ293753, Pseudonocardiaceae
Amycolatopsis *thailandensis*, FJ581021, Pseudonocardiaceae
Amycolatopsis *umgeniensis*, DQ110876, Pseudonocardiaceae
Amycolatopsis *orientalis*, AJ400711, type sp., Pseudonocardiaceae
Amycolatopsis *regifaucium*, AY129760, Pseudonocardiaceae
Amycolatopsis *keratiniphila* subsp. *nogabecina*, AJ508238, Pseudonocardiaceae
Amycolatopsis *keratiniphila* subsp. *keratiniphila*, AJ278496, Pseudonocardiaceae
Amycolatopsis *decaplanina*, AJ508237, Pseudonocardiaceae
Amycolatopsis *japonica*, AJ508236, Pseudonocardiaceae
Amycolatopsis *lurida*, AJ293755, Pseudonocardiaceae
Amycolatopsis *azurea*, AJ400709, Pseudonocardiaceae
Amycolatopsis *minnesotensis*, DQ076482, Pseudonocardiaceae
Amycolatopsis *nigrescens*, DQ486888, Pseudonocardiaceae
Amycolatopsis *samaneae*, GQ381310, Pseudonocardiaceae
Amycolatopsis *saalfeldensis*, DQ792500, Pseudonocardiaceae
Amycolatopsis *xylanica*, FJ529702, Pseudonocardiaceae
Amycolatopsis *jejuensis*, DQ000200, Pseudonocardiaceae
Amycolatopsis *sulphurea*, AJ293756, Pseudonocardiaceae
Amycolatopsis *ultimotia*, FM177516, Pseudonocardiaceae
Amycolatopsis *halophila*, FJ606836, Pseudonocardiaceae
Amycolatopsis *salitolerans*, HQ436534, Pseudonocardiaceae
Amycolatopsis *marina*, EU329845, Pseudonocardiaceae
Amycolatopsis *palatopharyngis*, AF479268, Pseudonocardiaceae
Amycolatopsis *magusensis*, HQ157190, Pseudonocardiaceae
Amycolatopsis *sacchari*, AF223354, Pseudonocardiaceae
Amycolatopsis *dongchuanensis*, JN656710, Pseudonocardiaceae
Amycolatopsis *bartoniae*, HQ651729, Pseudonocardiaceae
Saccharomonospora *viridis*, Z38007, type sp., Pseudonocardiaceae
Micropolyspora *internatus*, AB588632, Nocardiaceae
Saccharomonospora *glauca*, Z38003, Pseudonocardiaceae
Saccharomonospora *cyanea*, Z38018, Pseudonocardiaceae
Saccharomonospora *xinjiangensis*, AJ306300, Pseudonocardiaceae
Saccharomonospora *azurea*, Z38017, Pseudonocardiaceae
Saccharomonospora *saliphila*, DQ367416, Pseudonocardiaceae
Saccharomonospora *marina*, FJ812357, Pseudonocardiaceae
Saccharomonospora *halophila*, AJ278497, Pseudonocardiaceae
Saccharomonospora *paurometabolica*, AF540959, Pseudonocardiaceae
Prauserella *salsuginis*, FJ444992, Pseudonocardiaceae
Prauserella *sediminis*, FJ444995, Pseudonocardiaceae
Prauserella *flava*, FJ444993, Pseudonocardiaceae
Prauserella *alba*, AF435077, Pseudonocardiaceae
Prauserella *halophila*, AF466190, Pseudonocardiaceae





Micromonosporaceae (151)



Micromonospora purpureochromogenes, X92611, Micromonosporaceae
Micromonospora coxensis, AB241455, Micromonosporaceae
Micromonospora humi, GU459068, Micromonosporaceae
Micromonospora chokoriensis, AB241454, Micromonosporaceae
Micromonospora lupini, AJ783996, Micromonosporaceae
Micromonospora mirobrigensis, AJ626950, Micromonosporaceae
Micromonospora siamensis, AB193565, Micromonosporaceae
Micromonospora rifamycinica, AY561829, Micromonosporaceae
Micromonospora matsumotoense, AF152109, Micromonosporaceae
Micromonospora saelicesensis, AJ783993, Micromonosporaceae
Micromonospora zamorensis, FN658656, Micromonosporaceae
Micromonospora krabiensis, AB196716, Micromonosporaceae
Micromonospora carbonacea, X92599, Micromonosporaceae
Planosporangium flavigriseum, AM232832, type sp., Micromonosporaceae
Planosporangium mesophilum, GU126491, Micromonosporaceae
Planosporangium thailandense, AB560970, Micromonosporaceae
Actinoplanes brasiliensis, X93185, Micromonosporaceae
Actinoplanes abujensis, HQ157185, Micromonosporaceae
Actinoplanes ferrugineus, AJ277569, Micromonosporaceae
Actinoplanes tereljensis, AB468944, Micromonosporaceae
Actinoplanes toevensis, AB468943, Micromonosporaceae
Actinoplanes globisporus, AB048219, Micromonosporaceae
Actinoplanes rishiriensis, AB641831, Micromonosporaceae
Actinoplanes atraurantiacus, HQ839788, Micromonosporaceae
Actinoplanes deccanensis, AJ277565, Micromonosporaceae
Krasilnikovia cinnamomea, AB236956, type sp., Micromonosporaceae
Pseudosporangium ferrugineum, AB302183, type sp., Micromonosporaceae
Couchioplanes caeruleus subsp. azureus, X93202, Micromonosporaceae
Couchioplanes caeruleus subsp. caeruleus, D85479, type sp., Micromonosporaceae
Phytohhabitans rumicis, AB663559, Micromonosporaceae
Phytohhabitans suffuscus, AB490769, type sp., Micromonosporaceae
Phytohhabitans flavus, AB663558, Micromonosporaceae
Phytohhabitans houttuyniae, AB663560, Micromonosporaceae
Asanoa iriomotensis, AB112081, Micromonosporaceae
Asanoa ishikariensis, AJ294715, Micromonosporaceae
Asanoa ferruginea, AF152108, type sp., Micromonosporaceae
Asanoa siamensis, AB597931, Micromonosporaceae
Asanoa hainanensis, FJ155992, Micromonosporaceae
Jishengella endophytica, EU560726, type sp., Micromonosporaceae
Catenuloplanes castaneus, AB588634, Micromonosporaceae
Catenuloplanes japonicus, X93201, type sp., Micromonosporaceae
Catenuloplanes atrovinosus, AJ294716, Micromonosporaceae
Catenuloplanes indicus, AJ294717, Micromonosporaceae
Catenuloplanes niger, AB588635, Micromonosporaceae
Catenuloplanes crispus, AB024701, Micromonosporaceae
Catenuloplanes nepalensis, FJ715941, Micromonosporaceae
Verrucosispora sediminis, EU870859, Micromonosporaceae
Verrucosispora wenchangensis, HQ123435, Micromonosporaceae
Verrucosispora lutea, EF191199, Micromonosporaceae
Verrucosispora gifhornensis, Y15523, type sp., Micromonosporaceae
Verrucosispora maris, AY528866, Micromonosporaceae
Catellatospora chokoriensis, AB200231, Micromonosporaceae
Catellatospora methionotrophica, AF152107, Micromonosporaceae
Catellatospora citrea subsp. citrea, AF152106, type sp., Micromonosporaceae
Catellatospora coxensis, AB200232, Micromonosporaceae
Allocatelliglobosispora scoriae, FN386736, type sp., Micromonosporaceae
Catelliglobosispora koreensis, AF171700, Micromonosporaceae
Catellatospora bangladeshensis, AB200233, Micromonosporaceae
Hamadaea tsunoensis, AF152110, Micromonosporaceae
Longispora albida, AB089241, type sp., Micromonosporaceae
Longispora fulva, AB489859, Micromonosporaceae
Micromonospora echinospora, X92607, Micromonosporaceae
Micromonospora fulviviridis, X92620, Micromonosporaceae
Micromonospora inyonensis, X92629, Micromonosporaceae
Micromonospora sagamiensis, X92624, Micromonosporaceae
Micromonospora inositol, X92610, Micromonosporaceae
Micromonospora echinaurantiaca, X92618, Micromonosporaceae
Micromonospora olivasterospora, X92613, Micromonosporaceae
Micromonospora equina, JF912511, Micromonosporaceae
Micromonospora viridifaciens, X92623, Micromonosporaceae
Micromonospora pallida, X92608, Micromonosporaceae
Micromonospora nigra, X92609, Micromonosporaceae
Micromonospora corariae, AJ784008, Micromonosporaceae
Micromonospora cremae, FN658654, Micromonosporaceae
Micromonospora coerulea, X92598, Micromonosporaceae
Micromonospora echinofusca, X92625, Micromonosporaceae
Micromonospora peucetia, X92603, Micromonosporaceae
Micromonospora citrea, X92617, Micromonosporaceae
Micromonospora chersina, X92628, Micromonosporaceae
Micromonospora endolithica, AJ560635, Micromonosporaceae
Micromonospora auratinigra, AB159779, Micromonosporaceae
Micromonospora rosaria, X92631, Micromonosporaceae
Micromonospora tulbaghia, EU196562, Micromonosporaceae
Micromonospora rhizosphaerae, FJ261956, Micromonosporaceae
Micromonospora chaiyaphumensis, AB196710, Micromonosporaceae
Micromonospora yangpuensis, GU002071, Micromonosporaceae
Micromonospora eburnea, AB107231, Micromonosporaceae
Micromonospora narathiwatensis, AB193559, Micromonosporaceae
Micromonospora pattaloongensis, AB275607, Micromonosporaceae
Micromonospora pisi, AM944497, Micromonosporaceae
Salinispora arenicola, AY040619, type sp., Micromonosporaceae
Salinispora tropica, AY040617, Micromonosporaceae
Plantactinospora siamensis, AB454379, type sp., Micromonosporaceae
Plantactinospora mayteni, FJ214343, type sp., Micromonosporaceae
Plantactinospora endophytica, GQ494033, Micromonosporaceae
Polymorphospora rubra, AB223089, type sp., Micromonosporaceae
Xiangella phaseoli, JQ073732, type sp., Micromonosporaceae
Spirilliplanes yamanashiensis, D63912, type sp., Micromonosporaceae
Dactylosporangium fulvum, X93192, Micromonosporaceae
Dactylosporangium roseum, X93194, Micromonosporaceae
Dactylosporangium thailandense, X92630, Micromonosporaceae
Dactylosporangium darangshiense, FM882231, Micromonosporaceae
Dactylosporangium luridum, FJ973605, Micromonosporaceae
Dactylosporangium luteum, FJ973604, Micromonosporaceae
Dactylosporangium aurantiacum, X93191, type sp., Micromonosporaceae
Dactylosporangium maewongense, AB495209, Micromonosporaceae

Dactylosporangium matsuzakiense, X93193, Micromonosporaceae
Dactylosporangium vinaceum, X93196, Micromonosporaceae
Dactylosporangium salmoneum, FJ973607, Micromonosporaceae
Dactylosporangium tropicum, AB454508, Micromonosporaceae
Luedemannella flava, AB236959, Micromonosporaceae
Luedemannella helvata, AB236957, type sp., Micromonosporaceae
Rugosimonospora acidiphila, FM208261, type sp., Micromonosporaceae
Rugosimonospora africana, FM208262, Micromonosporaceae
Pilimelia anulata, X93189, Micromonosporaceae
Pilimelia terevasa, X93190, type sp., Micromonosporaceae
Pilimelia columellifera subsp. columellifera, AB548688, Micromonosporaceae
Virgisporangium aurantiacum, AB006169, Micromonosporaceae
Virgisporangium ochraceum, AB006167, type sp., Micromonosporaceae
Virgisporangium aliadipatigenens, AB548616, Micromonosporaceae

Glycomycetaceae (14)

Glycomyces lechevalierae, AY462041, Glycomycetaceae
Glycomyces rutgersensis, AJ293748, Glycomycetaceae
Glycomyces algeriensis, AY462044, Glycomycetaceae
Glycomyces endophyticus, EU200681, Glycomycetaceae
Glycomyces harbinensis, D85483, type sp., Glycomycetaceae
Glycomyces sambucus, DQ460469, Glycomycetaceae
Glycomyces scopariae, EU200682, Glycomycetaceae
Glycomyces mayteni, EU814511, Glycomycetaceae
Glycomyces arizonensis, AY462042, Glycomycetaceae
Glycomyces tenuis, D85482, Glycomycetaceae
Glycomyces halotolerans, HQ651156, Glycomycetaceae
Haloglycomyces albus, EU660053, type sp., Glycomycetaceae
Stackebrandtia nassauensis, AY650268, type sp., Glycomycetaceae
Stackebrandtia albiflava, DQ985165, Glycomycetaceae
Phytomonospora endophytica, GU367156, type sp., Micromonosporaceae
Actinocatenispora sera, AB263096, Micromonosporaceae
Actinocatenispora thailandica, AB107233, type sp., Micromonosporaceae
Actinocatenispora rupis, AM980986, Micromonosporaceae

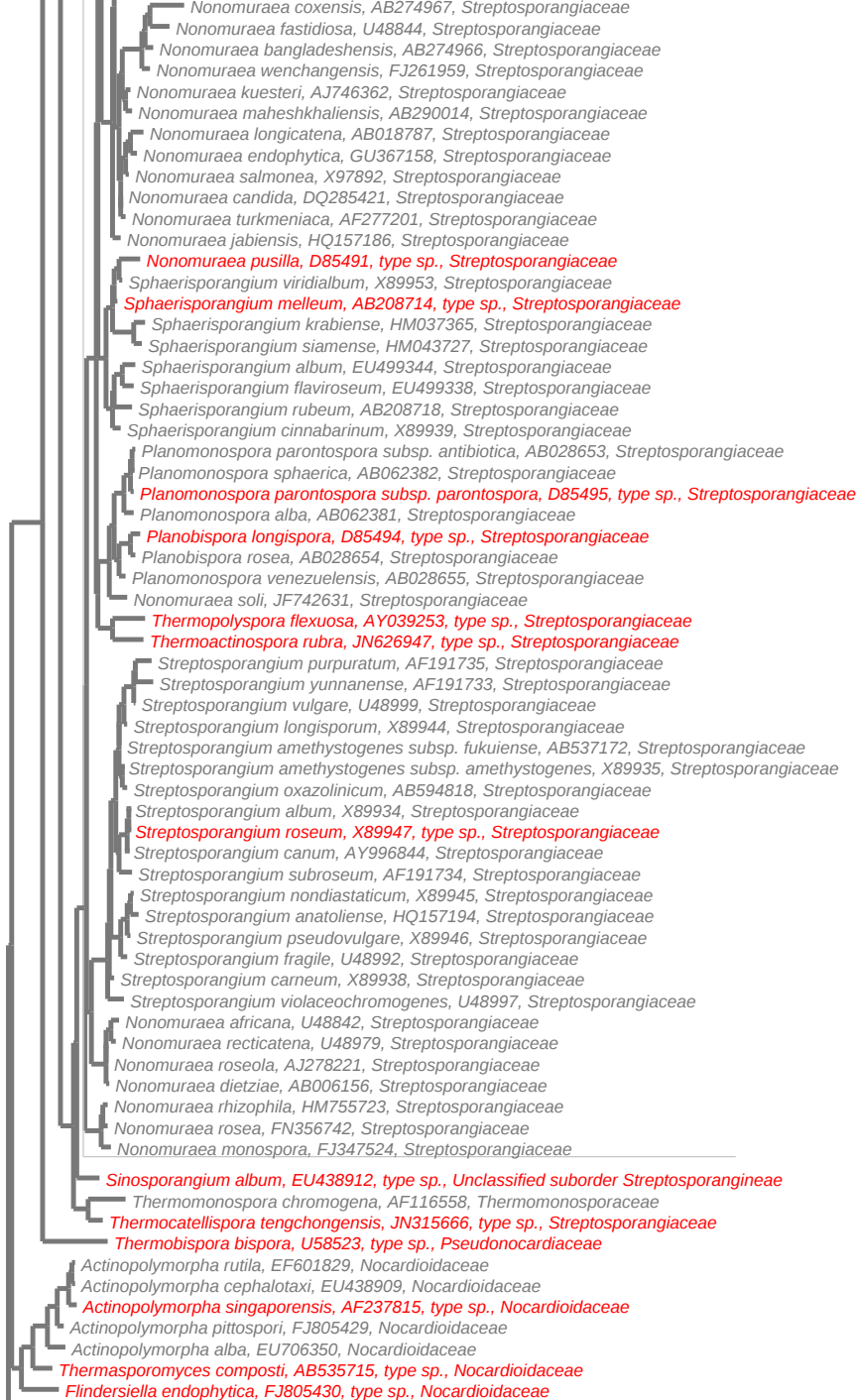
Jiangellaceae (5)

Jiangella alba, FJ157186, Jiangellaceae
Jiangella muralis, FN645214, Jiangellaceae
Jiangella alkaliphila, AM422451, Jiangellaceae
Jiangella gansuensis, AY631071, type sp., Jiangellaceae
Haloactinopolyspora alba, FJ969846, type sp., Jiangellaceae

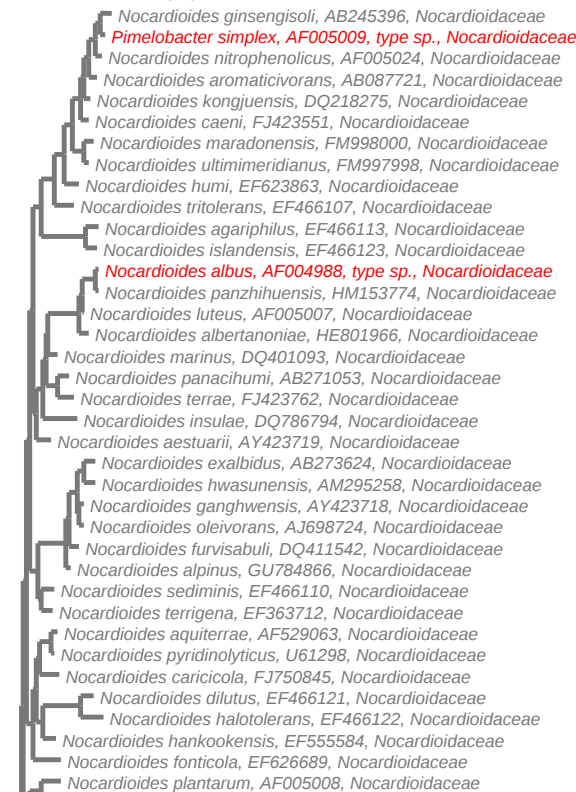
Thermomonosporaceae (75)

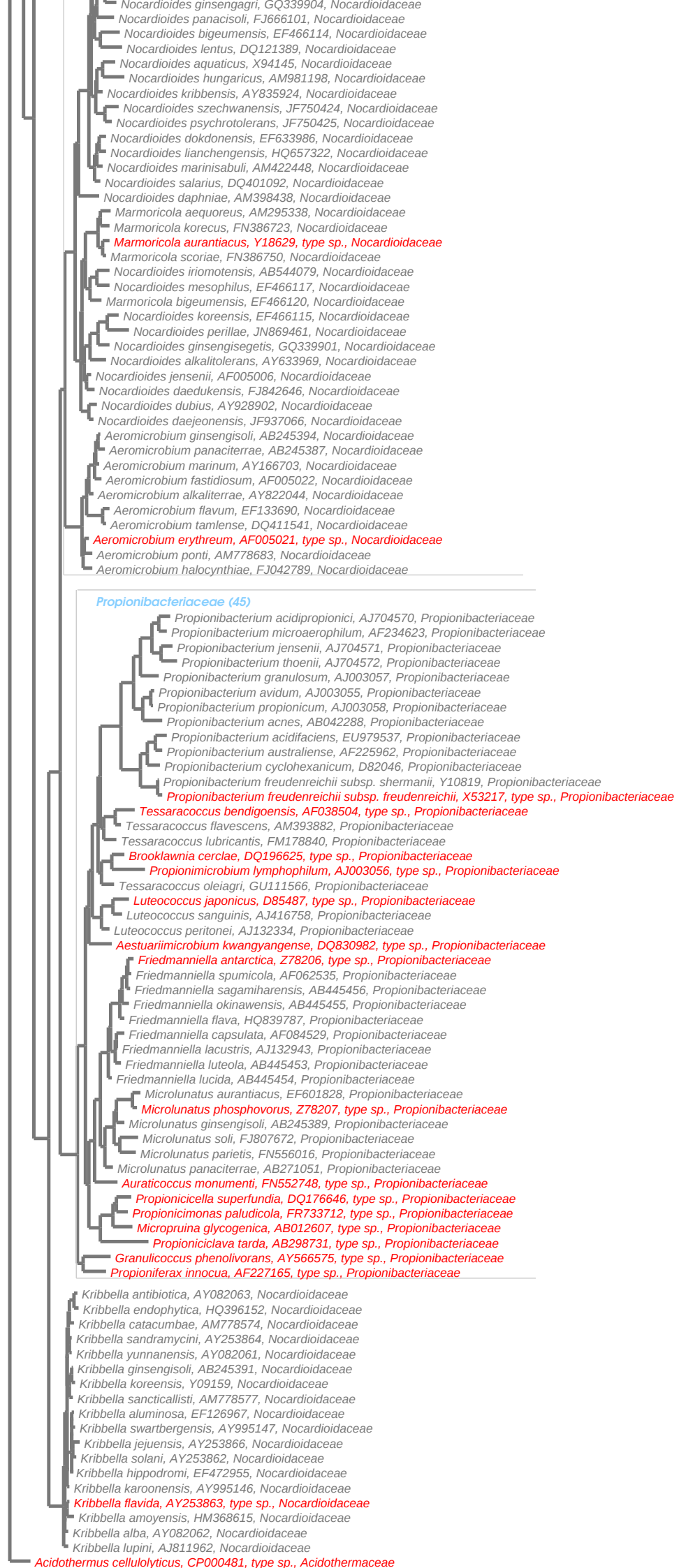
Actinocorallia aurantiaca, AJ293701, Thermomonosporaceae
Actinocorallia libanotica, U49007, Thermomonosporaceae
Actinocorallia herbida, D85473, type sp., Thermomonosporaceae
Actinocorallia aurea, AB006177, Thermomonosporaceae
Actinocorallia glomerata, AJ293704, Thermomonosporaceae
Actinocorallia longicatena, AJ293707, Thermomonosporaceae
Actinocorallia cavernae, AY966427, Thermomonosporaceae
Spirillospora rubra, AF163123, Thermomonosporaceae
Actinomadura rudentiformis, DQ285420, Thermomonosporaceae
Actinomadura fulvescens, AJ420137, Thermomonosporaceae
Spirillospora albida, D85498, type sp., Thermomonosporaceae
Actinomadura fibrosa, AJ293702, Thermomonosporaceae
Actinomadura keratinilytica, EU637009, Thermomonosporaceae
Actinomadura miaoliensis, EF116925, Thermomonosporaceae
Actinomadura rubrobrunea, EU637008, Thermomonosporaceae
Actinomadura viridilutea, D86943, Thermomonosporaceae
Actinomadura oligospora, AF163118, Thermomonosporaceae
Actinomadura rupiterrae, FM210337, Thermomonosporaceae
Actinomadura kijaniata, X97890, Thermomonosporaceae
Actinomadura namibiensis, AJ420134, Thermomonosporaceae
Actinomadura hibisca, AJ293705, Thermomonosporaceae
Actinomadura nitritigenes, AY035999, Thermomonosporaceae
Actinomadura formosensis, AJ293703, Thermomonosporaceae
Actinomadura atramentaria, U49000, Thermomonosporaceae
Actinomadura flavalba, FJ157185, Thermomonosporaceae
Actinomadura napierensis, AY568292, Thermomonosporaceae
Actinomadura xylanilytica, FR692101, Thermomonosporaceae
Actinomadura meyeriae, AY273787, Thermomonosporaceae
Actinomadura geliboluensis, HQ157187, Thermomonosporaceae
Actinomadura luteofluorescens, U49008, Thermomonosporaceae
Actinomadura verrucosospora, U49011, Thermomonosporaceae
Actinomadura rugatobispora, U49010, Thermomonosporaceae
Actinomadura macra, U49009, Thermomonosporaceae
Actinomadura coerulea, U49002, Thermomonosporaceae
Actinomadura pelletieri, AJ293710, Thermomonosporaceae
Actinomadura meridiana, FN646663, Thermomonosporaceae
Actinomadura apis, AB557596, Thermomonosporaceae
Actinomadura rifamycinii, U49003, Thermomonosporaceae
Actinomadura cremea subsp. cremea, AF134067, Thermomonosporaceae
Actinomadura sediminis, JF272484, Thermomonosporaceae
Actinomadura glauciflava, AB184612, Thermomonosporaceae
Actinomadura citrea, AJ420139, Thermomonosporaceae
Actinomadura mexicana, AF277195, Thermomonosporaceae
Actinomadura madurae, X97889, type sp., Thermomonosporaceae
Actinomadura latina, AY035998, Thermomonosporaceae
Actinomadura bangladeshensis, AB331652, Thermomonosporaceae
Actinomadura chokoriensis, AB331730, Thermomonosporaceae
Actinomadura vinacea, AF134070, Thermomonosporaceae
Actinomadura viridis, AJ420141, Thermomonosporaceae
Actinomadura yumaensis, AF163122, Thermomonosporaceae
Actinomadura chibensis, AB264086, Thermomonosporaceae
Actinomadura catellatispora, AF154127, Thermomonosporaceae
Actinomadura livida, AJ293706, Thermomonosporaceae
Actinomadura hallensis, DQ076484, Thermomonosporaceae
Actinomadura sputi, FM957483, Thermomonosporaceae
Actinomadura umbrina, AJ293713, Thermomonosporaceae
Thermomonospora curvata, D86945, type sp., Thermomonosporaceae
Actinomadura echinospora, AJ420135, Thermomonosporaceae
Actinoallomurus coprocola, AB364579, Thermomonosporaceae
Actinoallomurus oryzae, EU420071, Thermomonosporaceae
Actinoallomurus iriomotensis, AB364586, Thermomonosporaceae

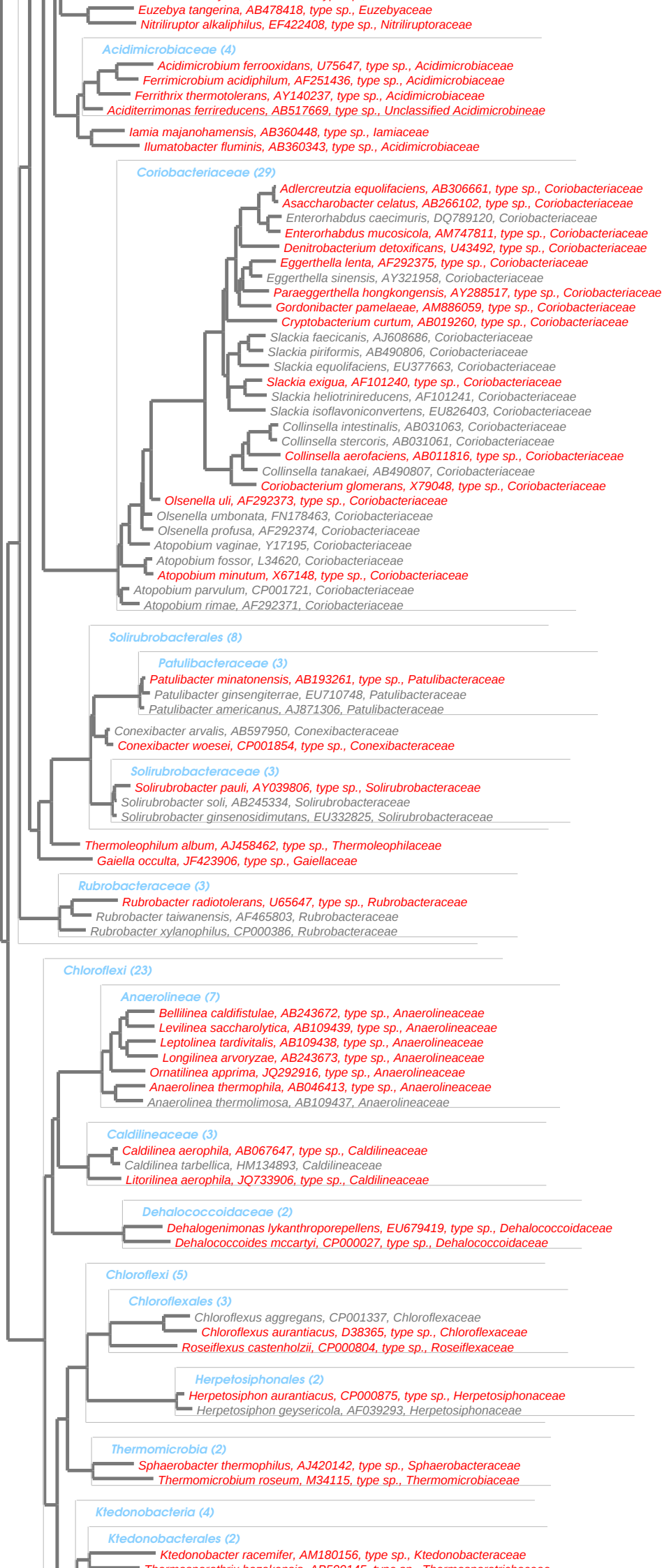
Microbispora hainanensis, FJ261972, Streptosporangiaceae
Microbispora siamensis, FJ199993, Streptosporangiaceae
Microbispora corallina, AB018046, Streptosporangiaceae
Microbispora rosea subsp. rosea, D86936, type sp., Streptosporangiaceae
Microbispora rosea subsp. aerata, U48984, Streptosporangiaceae
Microbispora mesophila, AF002266, Streptosporangiaceae
Planotetraspora phitsanulokensis, FJ426332, Streptosporangiaceae
Planotetraspora thailandica, AB370244, Streptosporangiaceae
Planotetraspora mira, D85496, type sp., Streptosporangiaceae
Planotetraspora silvatica, AB112082, Streptosporangiaceae
Planotetraspora kaengkrahanensis, FJ426333, Streptosporangiaceae
Acrocarpospora macrocephala, AB025318, Streptosporangiaceae
Acrocarpospora pleiomorpha, AB006174, type sp., Streptosporangiaceae
Acrocarpospora phusangensis, AB649124, Streptosporangiaceae
Acrocarpospora corrugata, AB188150, Streptosporangiaceae
Herbidospora yilanensis, DQ246623, Streptosporangiaceae
Herbidospora daliensis, AY749433, Streptosporangiaceae
Herbidospora cretacea, D85485, type sp., Streptosporangiaceae
Herbidospora sakaeratensis, FJ199995, Streptosporangiaceae
Herbidospora mongoliensis, AB530492, Streptosporangiaceae
Microtetraspora fusca, U48973, Streptosporangiaceae
Microtetraspora niveoalba, U48976, Streptosporangiaceae
Microtetraspora glauca, X97891, type sp., Streptosporangiaceae
Microtetraspora malaysiensis, AB062383, Streptosporangiaceae
Nonomuraea roseoviolacea subsp. carminata, AB039961, Streptosporangiaceae
Nonomuraea roseoviolacea subsp. roseoviolacea, AB039959, Streptosporangiaceae
Nonomuraea maritima, GU002054, Streptosporangiaceae
Nonomuraea jiangxiensis, FJ418910, Streptosporangiaceae
Nonomuraea antimicrobica, FJ157184, Streptosporangiaceae
Nonomuraea rubra, AF277200, Streptosporangiaceae
Nonomuraea angiospora, U48843, Streptosporangiaceae
Nonomuraea spiralis, U48983, Streptosporangiaceae
Nonomuraea helvata, U48975, Streptosporangiaceae
Nonomuraea ferruginea, U48845, Streptosporangiaceae
Nonomuraea polychroma, U48977, Streptosporangiaceae



Nocardioidaceae (76)







Thermogemmatisporales (2)

Thermogemmatispora foliorum, AB547913, Thermogemmatisporaceae

Thermogemmatispora onikobensis, AB547912, type sp., Thermogemmatisporaceae

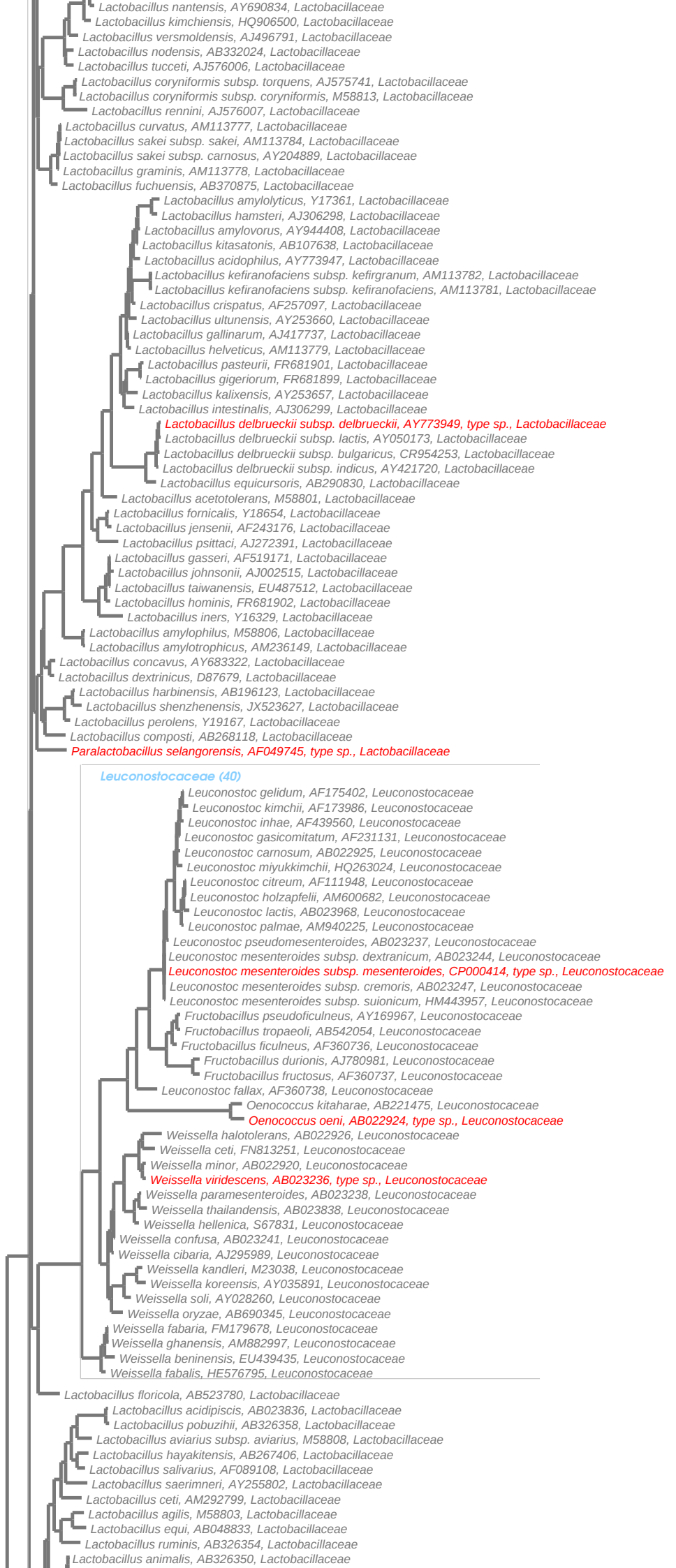
Firmicutes and Tenericutes (2148)

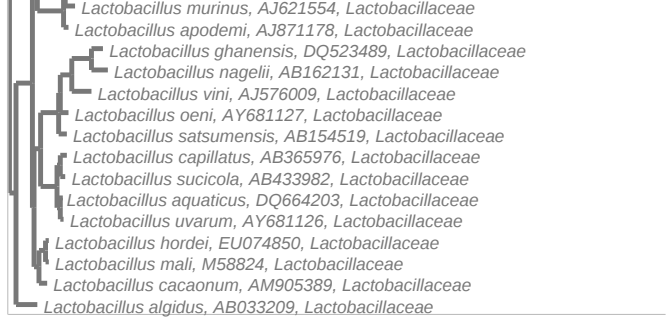
Bacilli and Tenericutes (1451)

Lactobacillales (420)

Lactobacillaceae and Leuconostocaceae (210)

Lactobacillus otakiensis, AB366386, Lactobacillaceae
Lactobacillus sunkii, AB366385, Lactobacillaceae
Lactobacillus kefir, AJ621553, Lactobacillaceae
Lactobacillus parabuchneri, AB205056, Lactobacillaceae
Lactobacillus parakefir, AY026750, Lactobacillaceae
Lactobacillus buchneri, AB205055, Lactobacillaceae
Lactobacillus kisonensis, AB366388, Lactobacillaceae
Lactobacillus rapi, AB366389, Lactobacillaceae
Lactobacillus diolivorans, AF264701, Lactobacillaceae
Lactobacillus parafarraginis, AB262734, Lactobacillaceae
Lactobacillus farraginis, AB262731, Lactobacillaceae
Lactobacillus hilgardii, M58821, Lactobacillaceae
Lactobacillus senioris, AB602570, Lactobacillaceae
Lactobacillus florum, AB498045, Lactobacillaceae
Lactobacillus lindneri, X95421, Lactobacillaceae
Lactobacillus sanfranciscensis, X76327, Lactobacillaceae
Lactobacillus fructivorans, X76330, Lactobacillaceae
Lactobacillus homohiochii, AJ621552, Lactobacillaceae
Lactobacillus kunkeei, Y11374, Lactobacillaceae
Lactobacillus ozensis, AB572588, Lactobacillaceae
Lactobacillus koreensis, FJ904277, Lactobacillaceae
Lactobacillus paucivorans, FN185731, Lactobacillaceae
Lactobacillus parabrevis, AM158249, Lactobacillaceae
Lactobacillus hammesii, AJ632219, Lactobacillaceae
Lactobacillus senmaizukei, AB297927, Lactobacillaceae
Lactobacillus brevis, M58810, Lactobacillaceae
Lactobacillus spicheri, AJ534844, Lactobacillaceae
Lactobacillus acidifarinae, AJ632158, Lactobacillaceae
Lactobacillus zymae, AJ632157, Lactobacillaceae
Lactobacillus namurensis, AM259118, Lactobacillaceae
Lactobacillus collinoides, AB005893, Lactobacillaceae
Lactobacillus paracollinoides, AJ786665, Lactobacillaceae
Lactobacillus odoratitofui, AB365975, Lactobacillaceae
Lactobacillus similis, AB282889, Lactobacillaceae
Lactobacillus kimchicus, EU678893, Lactobacillaceae
Lactobacillus malefermentans, AM113783, Lactobacillaceae
Lactobacillus pentosus, D79211, Lactobacillaceae
Lactobacillus plantarum subsp. plantarum, AJ965482, Lactobacillaceae
Lactobacillus plantarum subsp. argentoratensis, AJ640078, Lactobacillaceae
Lactobacillus paraplantarum, AJ306297, Lactobacillaceae
Lactobacillus xiangfangensis, HM443954, Lactobacillaceae
Lactobacillus fabifermentans, AM905388, Lactobacillaceae
Lactobacillus antri, AY253659, Lactobacillaceae
Lactobacillus oris, X94229, Lactobacillaceae
Lactobacillus panis, X94230, Lactobacillaceae
Lactobacillus pontis, X76329, Lactobacillaceae
Lactobacillus vaginalis, AF243177, Lactobacillaceae
Lactobacillus frumenti, AJ250074, Lactobacillaceae
Lactobacillus reuteri, L23507, Lactobacillaceae
Lactobacillus coleohominis, AM113776, Lactobacillaceae
Lactobacillus secaliphilus, AM279150, Lactobacillaceae
Lactobacillus ingluviei, AF333975, Lactobacillaceae
Lactobacillus equigenerei, AB288050, Lactobacillaceae
Lactobacillus gastricus, AY253658, Lactobacillaceae
Lactobacillus fermentum, ACGI01000130, Lactobacillaceae
Lactobacillus mucosae, AF126738, Lactobacillaceae
Lactobacillus rossiae, AJ564009, Lactobacillaceae
Lactobacillus siliginis, AB370882, Lactobacillaceae
Lactobacillus oligofermentans, AY733084, Lactobacillaceae
Lactobacillus suebicus, AJ575744, Lactobacillaceae
Lactobacillus vaccinnostercus, AJ621556, Lactobacillaceae
Lactobacillus casei, AF469172, Lactobacillaceae
Lactobacillus zeae, D86516, Lactobacillaceae
Lactobacillus paracasei subsp. tolerans, AB181950, Lactobacillaceae
Lactobacillus paracasei subsp. paracasei, D79212, Lactobacillaceae
Lactobacillus rhamnosus, D16552, Lactobacillaceae
Lactobacillus camelliae, AB257864, Lactobacillaceae
Lactobacillus manihotivorans, AF000162, Lactobacillaceae
Lactobacillus porcinae, HE616585, Lactobacillaceae
Lactobacillus nasuensis, AB608051, Lactobacillaceae
Lactobacillus pantheris, AF413523, Lactobacillaceae
Lactobacillus thailandensis, AB257863, Lactobacillaceae
Lactobacillus sharpeae, M58831, Lactobacillaceae
Pediococcus cellicola, AY956788, Lactobacillaceae
Pediococcus siamensis, AB258357, Lactobacillaceae
Pediococcus ethanolidurans, AY956789, Lactobacillaceae
Pediococcus damnosus, AJ318414, type sp., Lactobacillaceae
Pediococcus inopinatus, AJ271383, Lactobacillaceae
Pediococcus parvulus, D88528, Lactobacillaceae
Pediococcus acidilactici, AJ305320, Lactobacillaceae
Pediococcus pentosaceus, AJ305321, Lactobacillaceae
Pediococcus clausenii, AJ621555, Lactobacillaceae
Pediococcus stilesii, AJ973157, Lactobacillaceae
Pediococcus argentiniticus, AM709786, Lactobacillaceae
Lactobacillus brantae, HQ022861, Lactobacillaceae
Lactobacillus saniviri, AB602569, Lactobacillaceae
Lactobacillus farciminis, M58817, Lactobacillaceae
Lactobacillus futsaii, HQ322270, Lactobacillaceae
Lactobacillus crustorum, AM285450, Lactobacillaceae
Lactobacillus alimentarius, M58804, Lactobacillaceae
Lactobacillus paralimentarius, AB018528, Lactobacillaceae
Lactobacillus mindensis, AJ313530, Lactobacillaceae





Enterococcaceae and Streptococcaceae (151)

Streptococcaceae (91)



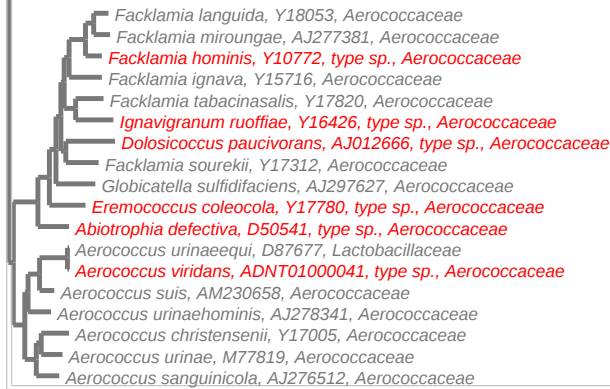
Lactococcus chungangensis, EF694028, Streptococcaceae
Lactococcus raffinolactis, EF694030, Streptococcaceae
Lactococcus piscium, DQ343754, Streptococcaceae
Lactococcus plantarum, EF694029, Streptococcaceae

***Pilibacter termitis*, AY533171, type sp., Enterococcaceae**
Enterococcus hermanniensis, AY396047, Enterococcaceae
Enterococcus pallens, DQ411812, Enterococcaceae
Enterococcus avium, AF133535, Enterococcaceae
Enterococcus raffinosus, Y18296, Enterococcaceae
Enterococcus gilvus, DQ411810, Enterococcaceae
Enterococcus malodoratus, AJ301835, Enterococcaceae
Enterococcus devriesei, AJ891167, Enterococcaceae
Enterococcus pseudoavium, AF061002, Enterococcaceae
Enterococcus viikkiensis, HQ378515, Enterococcaceae
Enterococcus faecium, AJ301830, Enterococcaceae
Enterococcus lactis, GU983697, Enterococcaceae
Enterococcus ratti, AF539705, Enterococcaceae
Enterococcus hirae, Y17302, Enterococcaceae
Enterococcus durans, AJ276354, Enterococcaceae
Enterococcus thailandicus, EF197994, Enterococcaceae
Enterococcus mundtii, AF061013, Enterococcaceae
Enterococcus villorum, AJ271329, Enterococcaceae
Enterococcus casseliflavus, AF039903, Enterococcaceae
Enterococcus gallinarum, AF039900, Enterococcaceae
Enterococcus canis, X76177, Enterococcaceae
***Melissococcus plutonius*, AY862507, type sp., Enterococcaceae**
Enterococcus canintestini, AJ888906, Enterococcaceae
Enterococcus dispar, AF061007, Enterococcaceae
***Tetragenococcus halophilus subsp. halophilus*, D88668, type sp., Enterococcaceae**
Tetragenococcus halophilus subsp. flandriensis, EU522087, Enterococcaceae
Tetragenococcus solitarius, AJ301840, Enterococcaceae
Tetragenococcus koreensis, AY690334, Enterococcaceae
Tetragenococcus muritatus, D88824, Enterococcaceae
Tetragenococcus osmophilus, EU522083, Enterococcaceae
Enterococcus camelliae, EF154454, Enterococcaceae
Enterococcus italicus, AJ582753, Enterococcaceae
Enterococcus sulfureus, AF061001, Enterococcaceae
Enterococcus saccharolyticus, AF061004, Enterococcaceae
Enterococcus asini, Y11621, Enterococcaceae
Enterococcus cecorum, AF061009, Enterococcaceae
Enterococcus columbae, AF061006, Enterococcaceae
***Catelicoccus marimammalia*, AJ854484, type sp., Enterococcaceae**
Enterococcus aquimarinus, AJ877015, Enterococcaceae
Enterococcus phoeniculicola, AY028437, Enterococcaceae
Enterococcus caccae, AY943820, Enterococcaceae
Enterococcus silesiacus, AM039966, Enterococcaceae
Enterococcus ureasiticus, GU457264, Enterococcaceae
Enterococcus urelyticus, AJ276352, Enterococcaceae
Enterococcus rotai, AJ276353, Enterococcaceae
Enterococcus haemoperoxidus, AF286832, Enterococcaceae
Enterococcus moraviensis, AF286831, Enterococcaceae
Enterococcus plantarum, HQ847537, Enterococcaceae
***Enterococcus faecalis*, AB012212, type sp., Enterococcaceae**
Enterococcus rivorum, FN822765, Enterococcaceae
Enterococcus quebecensis, GU457262, Enterococcaceae
Enterococcus termitis, AM039968, Enterococcaceae
Vagococcus elongatus, AF445297, Enterococcaceae
Vagococcus lutrae, Y17152, Enterococcaceae
Vagococcus acidifermentans, FJ211190, Enterococcaceae
Vagococcus penaei, FJ360897, Enterococcaceae
Vagococcus carniphilus, AY179329, Enterococcaceae
***Vagococcus fluvialis*, Y18098, type sp., Enterococcaceae**
Vagococcus salmoninarum, Y18097, Enterococcaceae
Vagococcus fessus, AJ243326, Enterococcaceae

***Desemzia incerta*, Y17300, type sp., Carnobacteriaceae**
***Pisciglobus halotolerans*, GU459067, type sp., Carnobacteriaceae**
Alkalibacterium indicireducens, AB268549, Carnobacteriaceae
Alkalibacterium pelagium, AB294166, Carnobacteriaceae
Alkalibacterium thalassium, AB294165, Carnobacteriaceae
***Alkalibacterium olivapoviliticus*, AF143511, type sp., Carnobacteriaceae**
Alkalibacterium iburiense, AB188091, Carnobacteriaceae
Alkalibacterium psychrotolerans, AB125938, Carnobacteriaceae
Alkalibacterium kapii, AB294171, Carnobacteriaceae
Alkalibacterium gilvum, AB690566, Carnobacteriaceae
Alkalibacterium subtropicum, AB555562, Carnobacteriaceae
Alkalibacterium putridalgicola, AB294167, Carnobacteriaceae
Marinilactibacillus piezotolerans, AB247277, Carnobacteriaceae
***Marinilactibacillus psychrotolerans*, AB083406, type sp., Carnobacteriaceae**
Allofustis seminis, AJ410303, type sp., Carnobacteriaceae
Atopostipes suiloacalis, AF445248, type sp., Carnobacteriaceae
Alloiococcus otitis, X59765, type sp., Carnobacteriaceae
Dolosigranulum pigrum, X70907, type sp., Carnobacteriaceae
Atopococcus tabaci, AJ634917, type sp., Carnobacteriaceae
***Lactigenium naphthae*, AB430339, type sp., Carnobacteriaceae**
Carnobacterium funditum, S86170, Carnobacteriaceae
Carnobacterium iners, HE583595, Carnobacteriaceae
Carnobacterium mobile, AB083414, Carnobacteriaceae
Carnobacterium inhibens, Z73313, Carnobacteriaceae
Carnobacterium viridans, AF425608, Carnobacteriaceae
Carnobacterium jeotgali, EU817500, Carnobacteriaceae
Carnobacterium pleistocenium, AF450136, Carnobacteriaceae
***Isobaculum melis*, AJ302648, type sp., Carnobacteriaceae**
Carnobacterium gallinarum, AJ387905, Carnobacteriaceae
Carnobacterium maltaromaticum, M58825, Carnobacteriaceae
***Carnobacterium divergens*, M58816, type sp., Carnobacteriaceae**
Trichococcus collinsii, AJ306612, Carnobacteriaceae
Trichococcus patagoniensis, AF394926, Carnobacteriaceae
Trichococcus pasteurii, X87150, Carnobacteriaceae
***Trichococcus flocculiformis*, AJ306611, type sp., Carnobacteriaceae**
Trichococcus palustris, AJ296179, Carnobacteriaceae
Atopobacter phocae, Y16546, type sp., Carnobacteriaceae
Bavariococcus seileri, FM177901, type sp., Enterococcaceae
***Granulicatella adiacens*, D50540, type sp., Carnobacteriaceae**
Granulicatella elegans, AF016390, Carnobacteriaceae

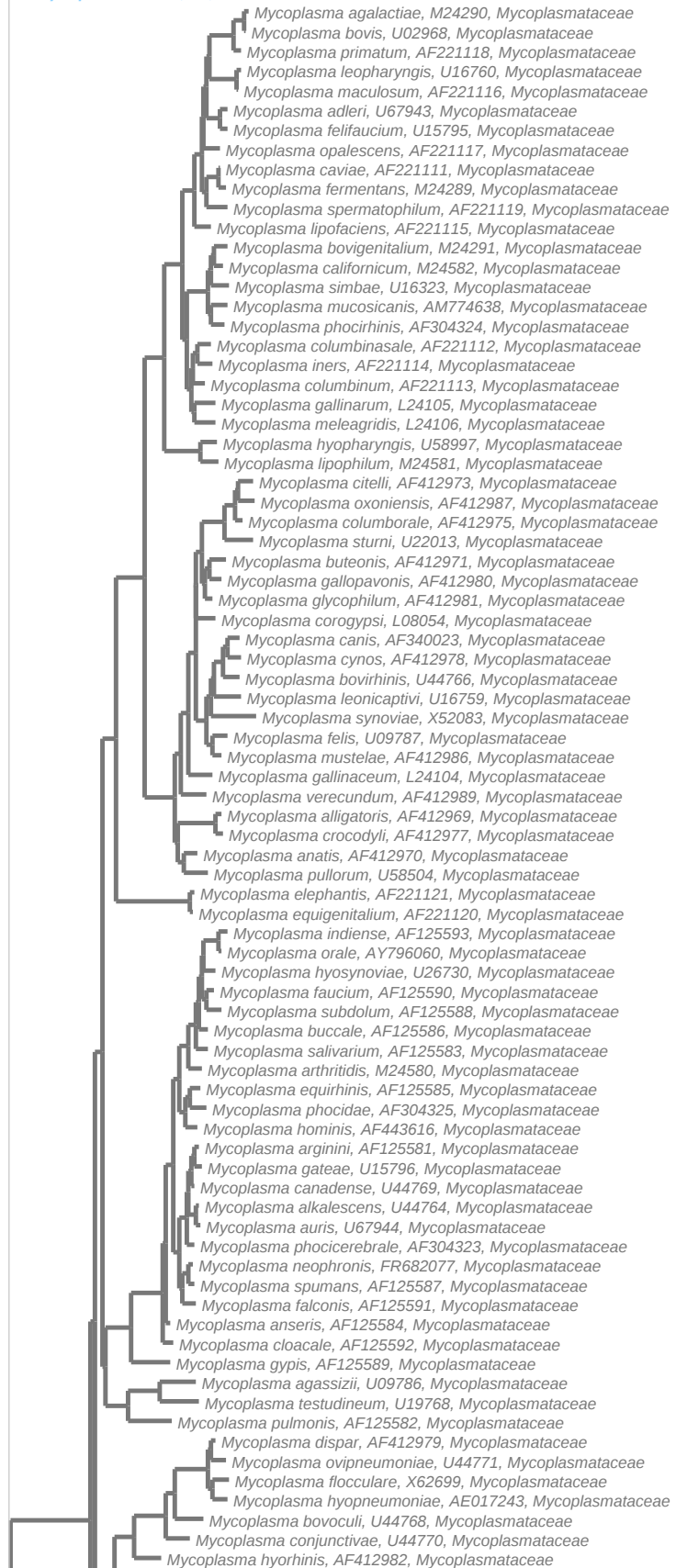
Granulicatella balaenopterae, Y16547, Carnobacteriaceae

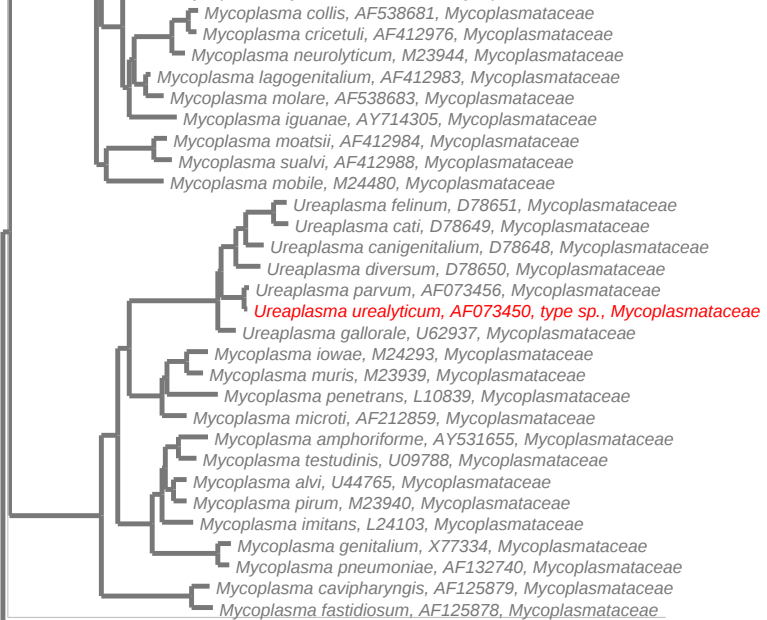
Aerococcaceae (18)



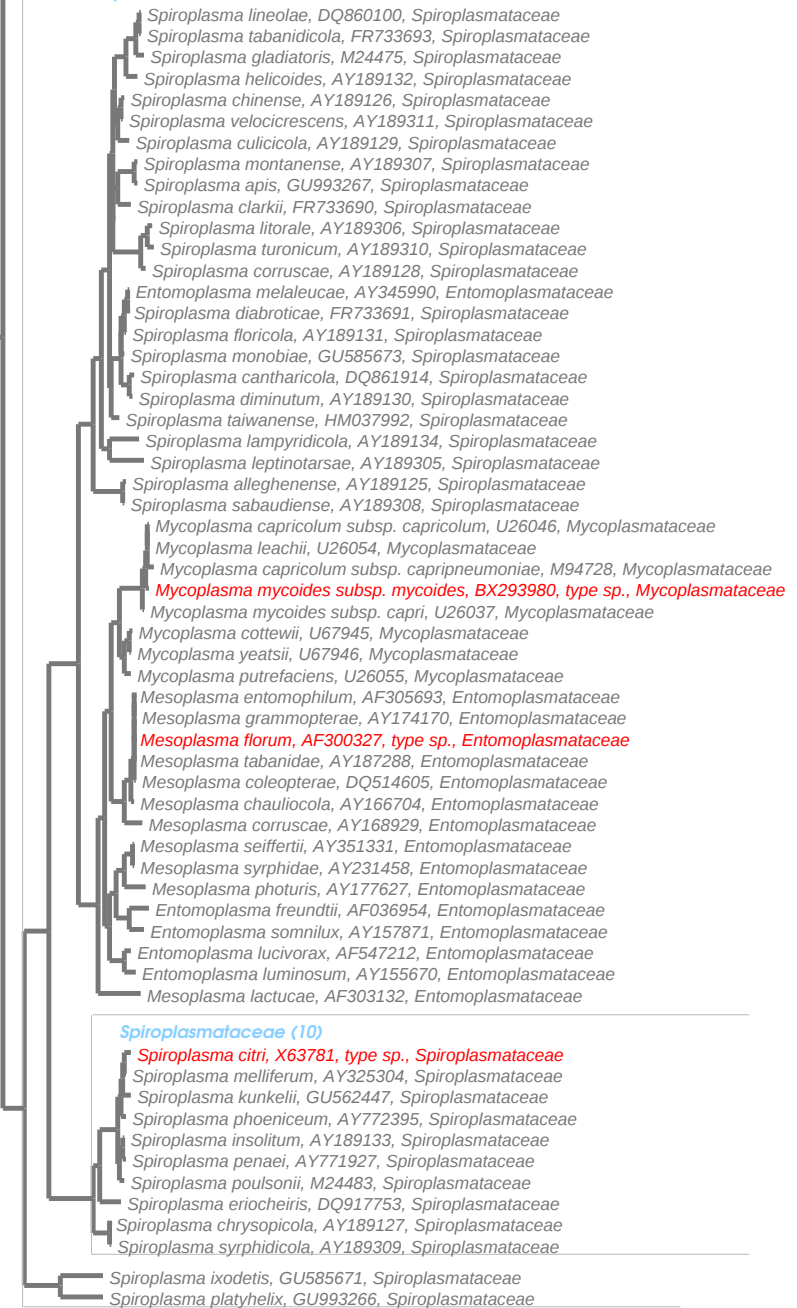
Tenericutes (186)

Mycoplasmatales (109)

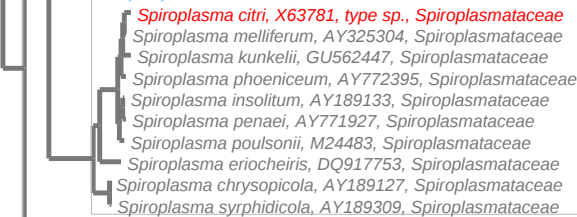




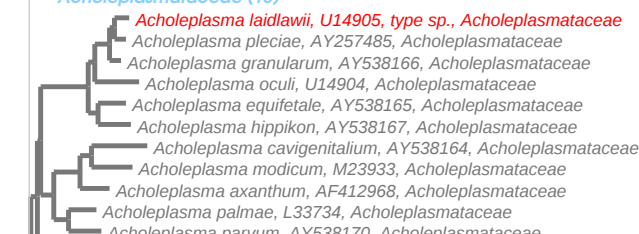
Entomoplasmatales (59)

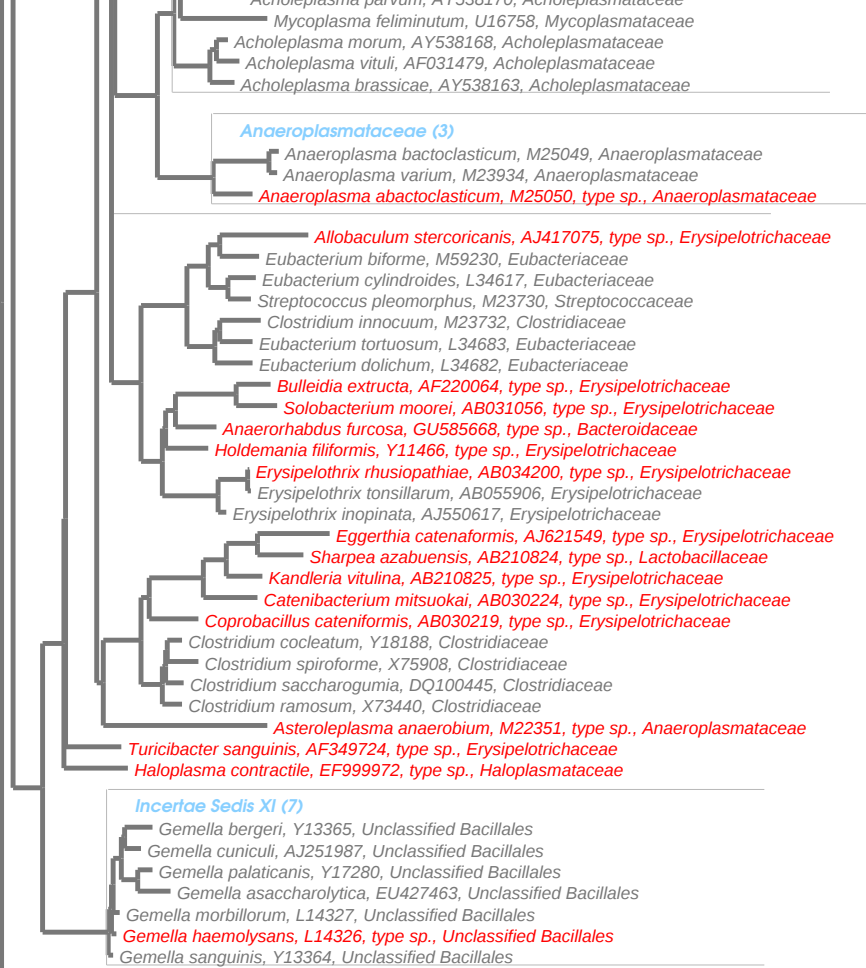


Spiroplasmataceae (10)



Acholeplasmataceae (15)



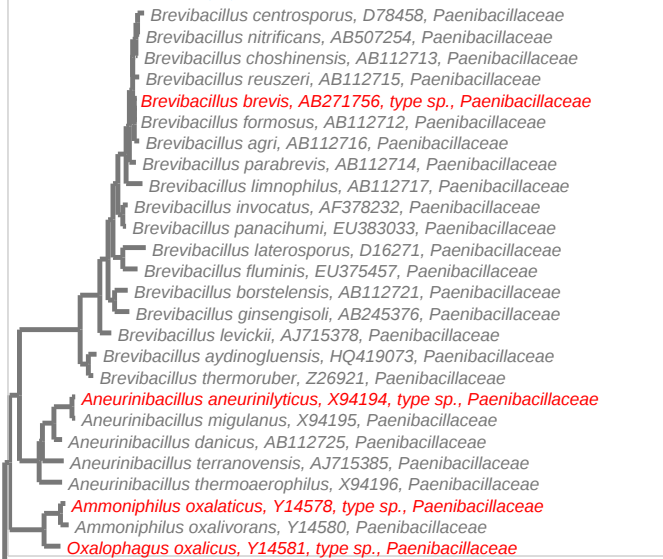


Staphylococcaceae (87)

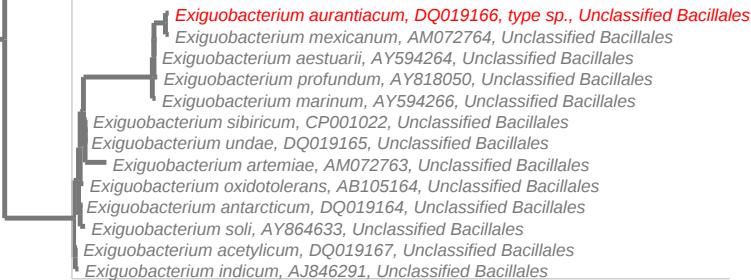
Staphylococcus delphini, AB009938, Staphylococcaceae
Staphylococcus intermedius, D83369, Staphylococcaceae
Staphylococcus pseudintermedius, AJ780976, Staphylococcaceae
Staphylococcus schleiferi subsp. *schleiferi*, S83568, Staphylococcaceae
Staphylococcus schleiferi subsp. *coagulans*, AB009945, Staphylococcaceae
Staphylococcus agnetis, HM484980, Staphylococcaceae
Staphylococcus hyicus, D83368, Staphylococcaceae
Staphylococcus chromogenes, D83360, Staphylococcaceae
Staphylococcus felis, D83364, Staphylococcaceae
Staphylococcus lutrae, X84731, Staphylococcaceae
Staphylococcus microti, EU888120, Staphylococcaceae
Staphylococcus rostri, FM242137, Staphylococcaceae
Staphylococcus muscae, FR733703, Staphylococcaceae
Staphylococcus condimenti, Y15750, Staphylococcaceae
Staphylococcus piscifermentans, Y15754, Staphylococcaceae
Staphylococcus carnosus subsp. *utilis*, AB233329, Staphylococcaceae
Staphylococcus simulans, D83373, Staphylococcaceae
Staphylococcus carnosus subsp. *carnosus*, AB009934, Staphylococcaceae
Staphylococcus auricularis, D83358, Staphylococcaceae
Staphylococcus saprophyticus subsp. *saprophyticus*, AP008934, Staphylococcaceae
Staphylococcus saprophyticus subsp. *bovis*, AB233327, Staphylococcaceae
Staphylococcus xylosus, D83374, Staphylococcaceae
Staphylococcus arlettae, AB009933, Staphylococcaceae
Staphylococcus gallinarum, D83366, Staphylococcaceae
Staphylococcus equorum subsp. *linens*, AF527483, Staphylococcaceae
Staphylococcus equorum subsp. *equorum*, AB009939, Staphylococcaceae
Staphylococcus succinus subsp. *succinus*, AF004220, Staphylococcaceae
Staphylococcus succinus subsp. *casei*, AJ320272, Staphylococcaceae
Staphylococcus kloosii, AB009940, Staphylococcaceae
Staphylococcus cohnii subsp. *urealyticus*, AB009936, Staphylococcaceae
Staphylococcus cohnii subsp. *cohnii*, D83361, Staphylococcaceae
Staphylococcus nepalensis, AJ517414, Staphylococcaceae
Staphylococcus massiliensis, EU0707796, Staphylococcaceae
Staphylococcus pettenkoferi, AF322002, Staphylococcaceae
Staphylococcus capitis subsp. *capitis*, L37599, Staphylococcaceae
Staphylococcus caprae, AB009935, Staphylococcaceae
Staphylococcus capitis subsp. *urealyticus*, AB009937, Staphylococcaceae
Staphylococcus epidermidis, D83363, Staphylococcaceae
Staphylococcus saccharolyticus, L37602, Staphylococcaceae
Staphylococcus aureus subsp. *aureus*, L36472, type sp., Staphylococcaceae
Staphylococcus simiae, AY727530, Staphylococcaceae
Staphylococcus aureus subsp. *anaerobius*, D83355, Staphylococcaceae
Staphylococcus pasteurii, AB009944, Staphylococcaceae
Staphylococcus warneri, L37603, Staphylococcaceae
Staphylococcus devriesei, FJ389206, Staphylococcaceae
Staphylococcus hominis subsp. *novobiosepticus*, AB233326, Staphylococcaceae
Staphylococcus hominis subsp. *hominis*, X66101, Staphylococcaceae
Staphylococcus haemolyticus, X66100, Staphylococcaceae
Staphylococcus lugdunensis, AB009941, Staphylococcaceae
Staphylococcus sciuri subsp. *rodentium*, AB233332, Staphylococcaceae
Staphylococcus sciuri subsp. *caraticus*, AB233331, Staphylococcaceae
Staphylococcus sciuri subsp. *sciuri*, AJ421446, Staphylococcaceae
Staphylococcus fleurettii, AB233330, Staphylococcaceae
Staphylococcus vitulinus, AB009946, Staphylococcaceae
Staphylococcus lentus, D83370, Staphylococcaceae
Staphylococcus stepanovicii, GQ222244, Staphylococcaceae
Macrococcus bovicus, Y15714, Staphylococcaceae
Macrococcus lamiae, AY119687, Staphylococcaceae



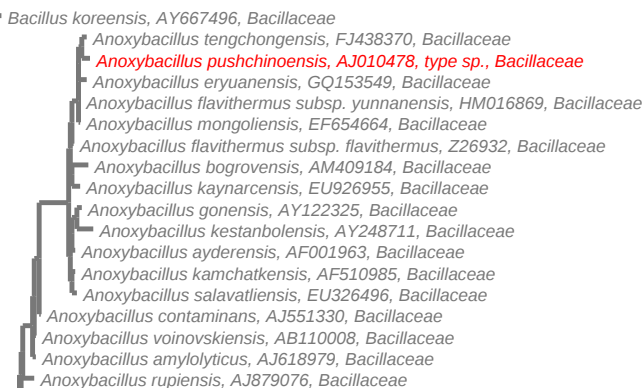
Paenibacillaceae 2 (26)

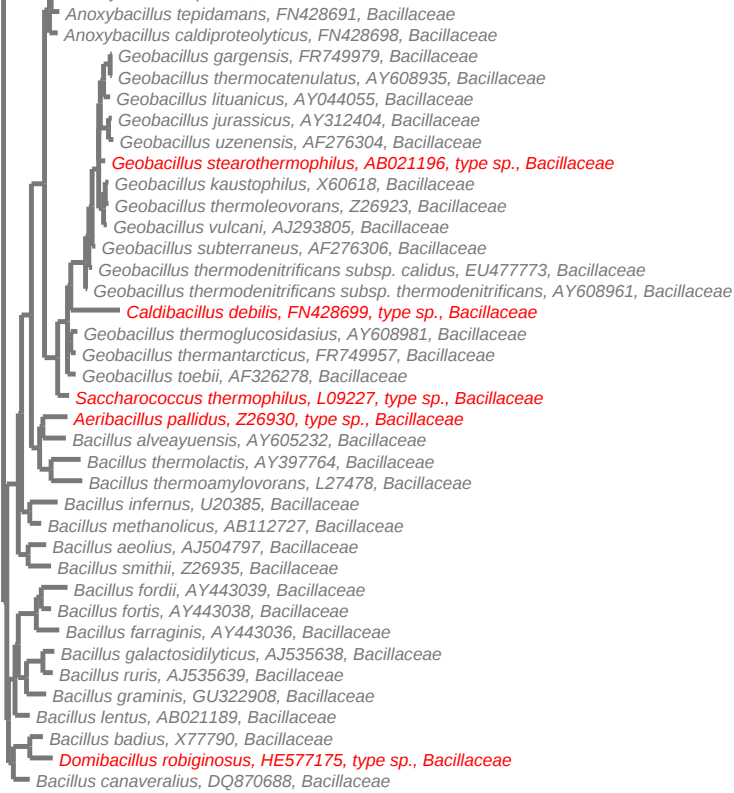


Incertae Sedis XII (13)

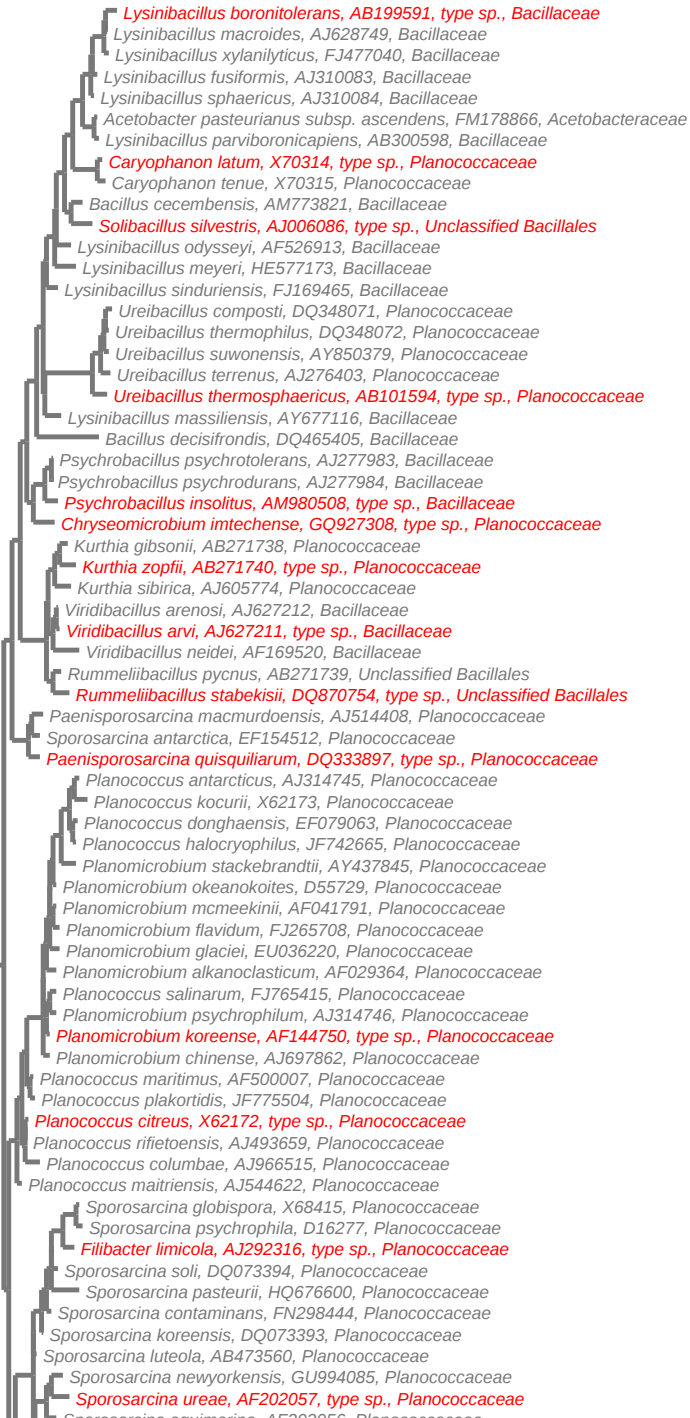


Listeriaceae (12)





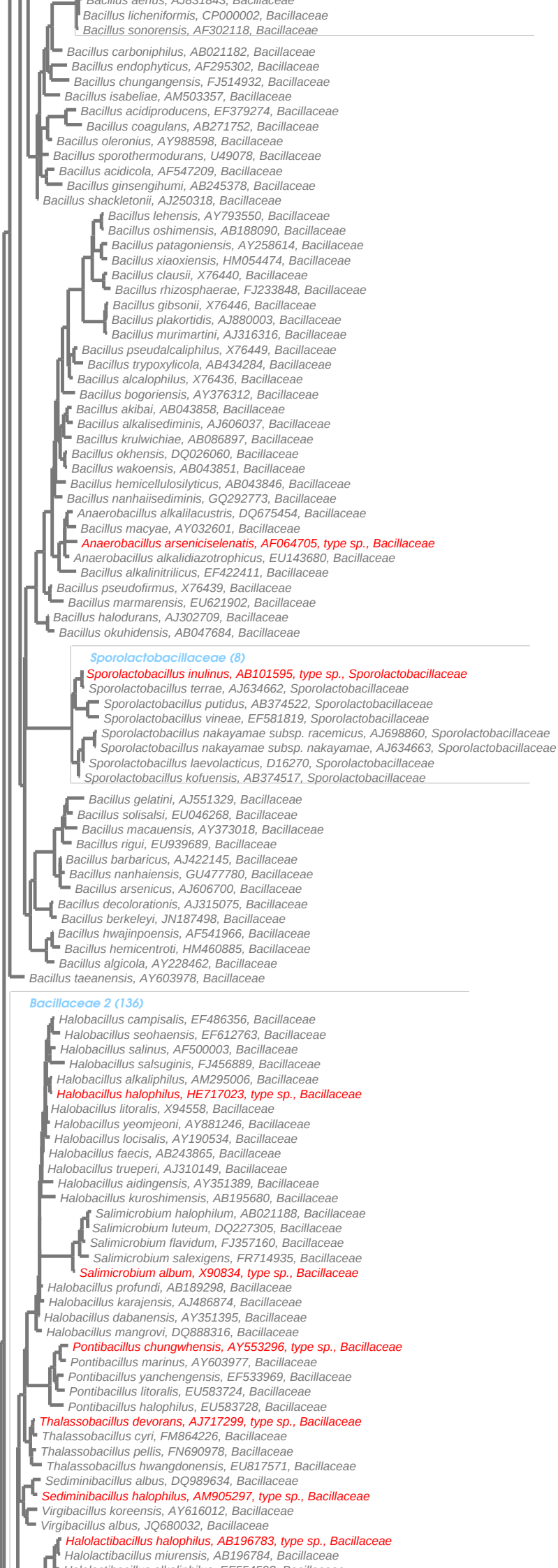
Planococcaceae (77)



Sporosarcina aquimarina, AF202056, Planococcaceae
Sporosarcina saromensis, AB243859, Planococcaceae
Bacillus beijingensis, EF371374, Bacillaceae
Bhargavaea cecembensis, AM286423, type sp., Planococcaceae
Bacillus ginsengi, EF371375, Bacillaceae
Chungangia koreensis, GU937385, type sp., Unclassified Bacillales
Jeotgalibacillus campisalis, AY190535, Planococcaceae
Jeotgalibacillus marinus, AJ237708, Planococcaceae
Jeotgalibacillus soli, FR693626, Planococcaceae
Jeotgalibacillus alimentarius, AF281158, type sp., Planococcaceae
Jeotgalibacillus salarius, EU874389, Planococcaceae
Bacillus mycoides, AB021192, Bacillaceae
Bacillus weihenstephanensis, AB021199, Bacillaceae
Bacillus thuringiensis, D16281, Bacillaceae
Bacillus cereus, AE016877, Bacillaceae
Bacillus anthracis, AB190217, Bacillaceae
Bacillus pseudomyoides, AF013121, Bacillaceae
Bacillus cytotoxicus, AM747234, Bacillaceae
Bacillus aquimaris, AF483625, Bacillaceae
Bacillus vietnamensis, AB099708, Bacillaceae
Bacillus marisflavi, AF483624, Bacillaceae
Bacillus seohaeanensis, AY667495, Bacillaceae
Bacillus coahuilensis, EF014452, Bacillaceae
Bacillus horneckiae, EU861362, Bacillaceae
Bacillus kochii, FN995265, Bacillaceae
Bacillus purgationiresistens, FR666703, Bacillaceae
Bacillus eiseniae, HM035089, Bacillaceae
Bacillus halmapalus, X76447, Bacillaceae
Bacillus zhanjiangensis, HM460884, Bacillaceae
Bacillus horikoshii, AB043865, Bacillaceae
Bacillus cohnii, X76437, Bacillaceae
Bacillus acidicer, DQ374637, Bacillaceae
Bacillus luciferensis, AJ419629, Bacillaceae
Bacillus endoradicis, GU434676, Bacillaceae
Bacillus flexus, AB021185, Bacillaceae
Bacillus megaterium, D16273, Bacillaceae
Bacillus funiculus, AB049195, Bacillaceae
Bacillus panaciterrae, AB245380, Bacillaceae
Bacillus azotoformans, AB363732, Bacillaceae
Bacillus muralis, AJ316309, Bacillaceae
Brevibacterium frigoritolerans, AM747813, Brevibacteriaceae
Bacillus simplex, AJ439078, Bacillaceae
Bacillus butanolivorans, EF206294, Bacillaceae
Bacillus psychrosaccharolyticus, AB021195, Bacillaceae
Bacillus asahii, AB109209, Bacillaceae
Bacillus novalis, AJ542512, Bacillaceae
Bacillus vireti, AJ542509, Bacillaceae
Bacillus drenthensis, AJ542506, Bacillaceae
Bacillus bataviensis, AJ542508, Bacillaceae
Bacillus soli, AJ542513, Bacillaceae
Bacillus fumarioli, AJ250056, Bacillaceae
Bacillus niacini, AB021194, Bacillaceae
Bacillus pocheonensis, AB245377, Bacillaceae
Bacillus ginsengisoli, HQ224517, Bacillaceae
Bacillus cibi, AY550276, Bacillaceae
Bacillus indicus, AJ583158, Bacillaceae
Bacillus idriensis, AY904033, Bacillaceae
Bacillus fastidiosus, X60615, Bacillaceae
Bacillus litoralis, AY608605, Bacillaceae
Bacillus niabensis, AY998119, Bacillaceae
Bacillus herbersteinensis, AJ781029, Bacillaceae
Bacillus galliciensis, FM162181, Bacillaceae
Bacillus humi, AJ627210, Bacillaceae
Bacillus luteolus, GQ925365, Bacillaceae
Bacillus alkalitelluris, AY829448, Bacillaceae
Bacillus boroniphilus, AB198719, Bacillaceae
Bacillus selenatarsenatis, AB262082, Bacillaceae
Bacillus jeotgali, AF221061, Bacillaceae
Bacillus subterraneus, FR733689, Bacillaceae
Bacillus thioparans, DQ371431, Bacillaceae
Bacillus foraminis, AJ717382, Bacillaceae
Bacillus persicus, HQ433471, Bacillaceae
Bacillus beringensis, FJ889576, Bacillaceae
Bacillus korlensis, EU603328, Bacillaceae
Bacillus siralis, AF071856, Bacillaceae
Bacillus circulans, AY043084, Bacillaceae
Bacillus nealsonii, EU656111, Bacillaceae
Bacillus benzoovorans, X60611, Bacillaceae
Bacillus gottheilii, FN995266, Bacillaceae
Bacillus firmus, D16268, Bacillaceae
Bacillus infantis, AY904032, Bacillaceae
Bacillus oceanisediminis, GQ292772, Bacillaceae
Falsibacillus pallidus, EU364818, type sp., Bacillaceae
Bacillus deserti, GQ465041, Bacillaceae
Bacillus kribbensis, DQ280367, Bacillaceae

Bacillaceae 1 (21)

Bacillus amyloliquefaciens, AB255669, Bacillaceae
Bacillus siamensis, GQ281299, Bacillaceae
Bacillus methylotrophicus, EU194897, Bacillaceae
Bacillus subtilis subsp. subtilis, AJ276351, type sp., Bacillaceae
Bacillus subtilis subsp. inaquosorum, EU138467, Bacillaceae
Bacillus mojavensis, AB021191, Bacillaceae
Brevibacterium halotolerans, AM747812, Brevibacteriaceae
Bacillus subtilis subsp. spizizenii, AF074970, Bacillaceae
Bacillus tequilensis, HQ223107, Bacillaceae
Bacillus vallismortis, AB021198, Bacillaceae
Bacillus aerophilus, AJ831844, Bacillaceae
Bacillus stratosphericus, AJ831841, Bacillaceae
Bacillus altitudinis, AJ831842, Bacillaceae
Bacillus pumilus, AY876289, Bacillaceae
Bacillus safensis, AF234854, Bacillaceae
Bacillus atrophaeus, AB021181, Bacillaceae
Bacillus amyloliquefaciens subsp. plantarum, CP000560, Bacillaceae
Bacillus amyloliquefaciens subsp. amyloliquefaciens, FN597644, Bacillaceae
Bacillus cereus, AJ831843, Bacillaceae





Bacillus salarius, AY667494, Bacillaceae
Bacillus iranensis, HQ433452, Bacillaceae
Alteribacillus bidgolensis, HQ433453, type sp., Bacillaceae
Alteribacillus persepolensis, FM244839, Bacillaceae
Geomicrobium halophilum, AB449106, Unclassified Bacillales
Natribacillus halophilus, AB449109, type sp., Bacillaceae
Salsuginibacillus halophilus, EU581835, Bacillaceae
Salsuginibacillus kocurii, AM492160, type sp., Bacillaceae
Marinococcus halotolerans, AY817493, Bacillaceae
Marinococcus luteus, FJ214659, Bacillaceae
Marinococcus halophilus, X90835, type sp., Bacillaceae
Sinobaca qinghaiensis, DQ168584, type sp., Sporolactobacillaceae
Bacillus chagannorensis, AM492159, Bacillaceae
Bacillus daliensis, GU583651, Bacillaceae
Bacillus saliphilus, AJ493660, Bacillaceae
Bacillus locisalis, FR714930, Bacillaceae
Salisediminibacterium halotolerans, EU581836, type sp., Bacillaceae
Bacillus beveridgei, FJ825145, Bacillaceae
Bacillus selenitireducens, AF064704, Bacillaceae
Bacillus neizhouensis, EU925618, Bacillaceae
Bacillus agaradhaerens, X76445, Bacillaceae
Bacillus aurantiacus, AJ605773, Bacillaceae
Bacillus vedderi, Z48306, Bacillaceae
Bacillus cellulosilyticus, AB043852, Bacillaceae
Bacillus clarkii, X76444, Bacillaceae
Bacillus polygoni, AB292819, Bacillaceae
Bacillus horti, D87035, Bacillaceae
Bacillus mannanilyticus, AB043864, Bacillaceae
Vulcanibacillus modesticaldus, AM050346, type sp., Bacillaceae

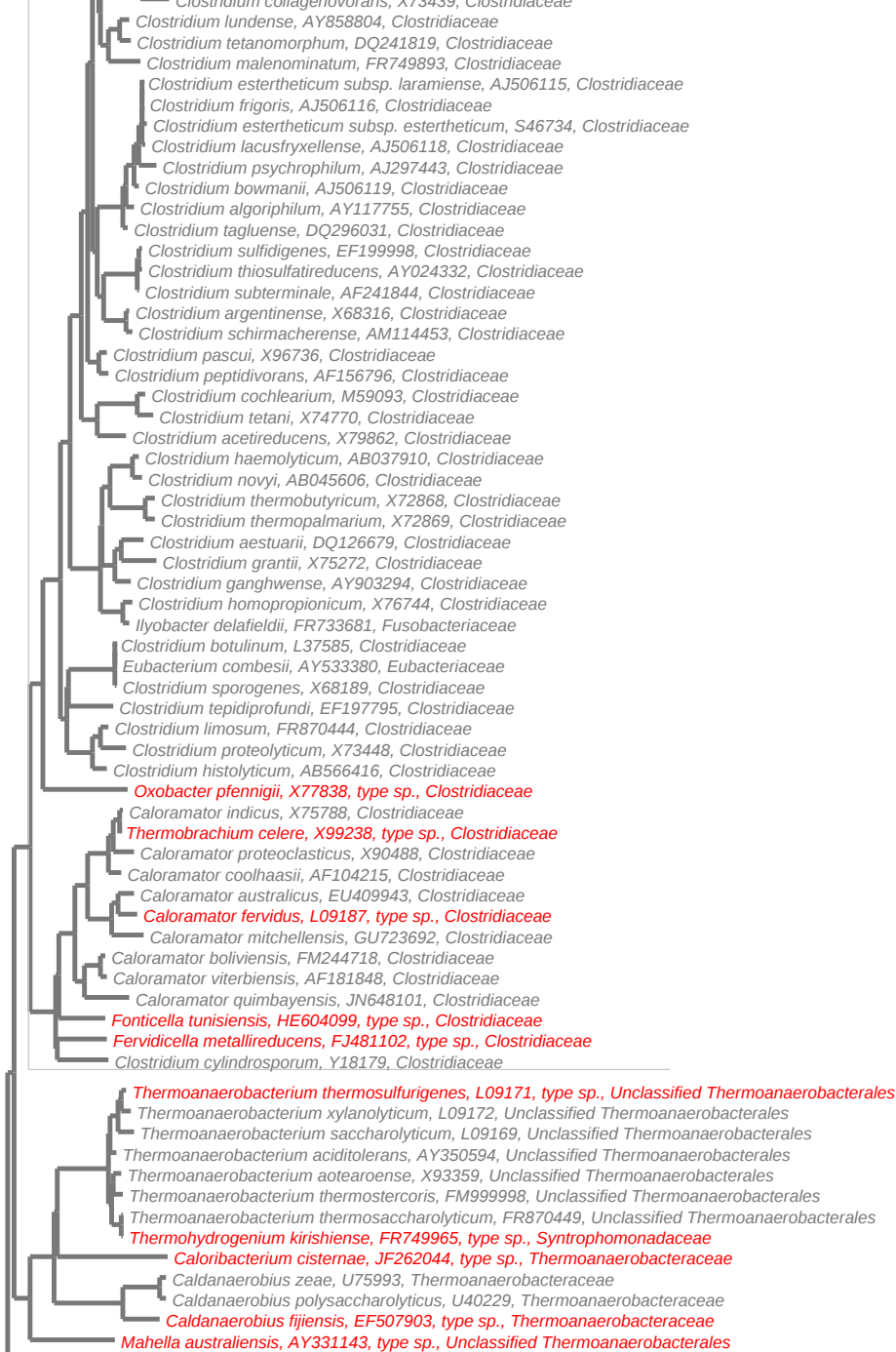
Paenibacillaceae 1 (164)

Paenibacillus amylolyticus, D85396, Paenibacillaceae
Paenibacillus xylanexedens, EU558281, Paenibacillaceae
Paenibacillus tundrae, EU558284, Paenibacillaceae
Paenibacillus taichungensis, EU179327, Paenibacillaceae
Paenibacillus pabuli, AB045094, Paenibacillaceae
Paenibacillus xylanilyticus, AY427832, Paenibacillaceae
Paenibacillus barcinonensis, AJ716019, Paenibacillaceae
Paenibacillus oceanisediminis, JF811909, Paenibacillaceae
Paenibacillus illinoisensis, AB073192, Paenibacillaceae
Paenibacillus massiliensis, AY323608, Paenibacillaceae
Paenibacillus panacisoli, AB245384, Paenibacillaceae
Paenibacillus provencensis, EF212893, Paenibacillaceae
Paenibacillus urinalis, EF212892, Paenibacillaceae
Paenibacillus brasiliensis, AF273740, Paenibacillaceae
Paenibacillus terrae, AF391124, Paenibacillaceae
Paenibacillus polymyxa, D16276, type sp., Paenibacillaceae
Paenibacillus kribbensis, AF391123, Paenibacillaceae
Paenibacillus peoriae, AJ320494, Paenibacillaceae
Paenibacillus jamilae, AJ271157, Paenibacillaceae
Paenibacillus hunanensis, EU741036, Paenibacillaceae
Paenibacillus hordei, HQ833590, Paenibacillaceae
Paenibacillus glucanolyticus, AB073189, Paenibacillaceae
Paenibacillus lautus, AB073188, Paenibacillaceae
Paenibacillus lactis, AY257868, Paenibacillaceae
Paenibacillus campinasensis, AF021924, Paenibacillaceae
Paenibacillus purispatii, EU888513, Paenibacillaceae
Paenibacillus uliginis, FN556467, Paenibacillaceae
Paenibacillus anaericanus, AJ318909, Paenibacillaceae
Paenibacillus sediminis, GQ355277, Paenibacillaceae
Paenibacillus pini, GQ423056, Paenibacillaceae
Paenibacillus terrigena, AB248087, Paenibacillaceae
Paenibacillus turicensis, AF378694, Paenibacillaceae
Paenibacillus cineris, AJ575658, Paenibacillaceae
Paenibacillus rhizosphaerae, AY751754, Paenibacillaceae
Paenibacillus favisporus, AY208751, Paenibacillaceae
Paenibacillus cellulositrophicus, FJ178001, Paenibacillaceae
Paenibacillus azoreducens, AJ272249, Paenibacillaceae
Paenibacillus chibensis, AB073194, Paenibacillaceae
Paenibacillus telluris, HQ257247, Paenibacillaceae
Paenibacillus cookii, AJ250317, Paenibacillaceae
Paenibacillus motobuensis, AY741810, Paenibacillaceae
Paenibacillus barengoltzii, AY167814, Paenibacillaceae
Paenibacillus phoenicis, EU977789, Paenibacillaceae
Paenibacillus timonensis, AY323612, Paenibacillaceae
Paenibacillus sanguinis, AY323609, Paenibacillaceae
Paenibacillus puldeungensis, GU187433, Paenibacillaceae
Paenibacillus macerans, AB073196, Paenibacillaceae
Paenibacillus thermophilus, JQ824133, Paenibacillaceae
Paenibacillus konsidensis, EU081509, Paenibacillaceae
Fontibacillus aquaticus, DQ023221, type sp., Paenibacillaceae
Fontibacillus panacisegetis, GQ303568, Paenibacillaceae
Paenibacillus fonticola, DQ453131, Paenibacillaceae
Paenibacillus woosongensis, AY847463, Paenibacillaceae
Paenibacillus nematophilus, AF480935, Paenibacillaceae
Cohnella luojiensis, GQ214052, Paenibacillaceae
Cohnella arctica, HQ315787, Paenibacillaceae
Cohnella soli, GU181266, Paenibacillaceae
Cohnella suwonensis, GU181267, Paenibacillaceae
Cohnella phaseoli, EU014872, Paenibacillaceae
Cohnella cellulosilytica, HQ704069, Paenibacillaceae
Cohnella hongkongensis, AF433165, Paenibacillaceae
Cohnella boryungensis, HM061613, Paenibacillaceae
Cohnella terrae, FJ001842, Paenibacillaceae
Cohnella xylanilytica, FJ001841, Paenibacillaceae
Cohnella thermotolerans, AJ971483, type sp., Paenibacillaceae
Cohnella damuensis, EU912527, Paenibacillaceae
Cohnella thailandensis, FJ001840, Paenibacillaceae
Cohnella panacarvi, AB271056, Paenibacillaceae
Cohnella yongneupensis, EF368008, Paenibacillaceae
Cohnella laeviribosi, DQ459874, Paenibacillaceae
Cohnella fontinalis, AB362828, Paenibacillaceae
Saccharibacillus kuerlensis, EU046270, Paenibacillaceae
Saccharibacillus sacchari, EU014873, type sp., Paenibacillaceae
Paenibacillus macquariensis subsp. macquariensis, X60625, Paenibacillaceae
Paenibacillus macquariensis subsp. defensor, AB360546, Paenibacillaceae

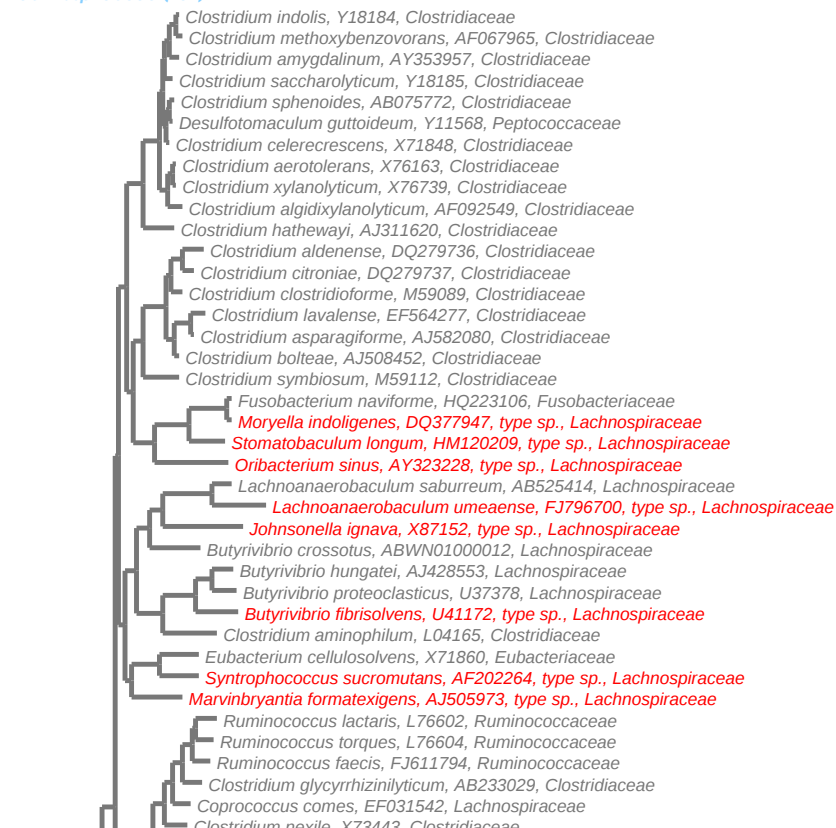
Paenibacillus antarcticus, AJ05292, Paenibacillaceae
Paenibacillus glacialis, EU815294, Paenibacillaceae
Paenibacillus wynnii, AJ633647, Paenibacillaceae
Paenibacillus odorifer, AJ223990, Paenibacillaceae
Paenibacillus borealis, AJ011322, Paenibacillaceae
Paenibacillus forsythiae, DQ338443, Paenibacillaceae
Paenibacillus sabinae, DQ338444, Paenibacillaceae
Paenibacillus zanthoxyli, DQ471303, Paenibacillaceae
Paenibacillus durus, X77846, Paenibacillaceae
Paenibacillus sophorae, GQ985395, Paenibacillaceae
Paenibacillus stellifer, AJ316013, Paenibacillaceae
Paenibacillus typhae, JN256679, Paenibacillaceae
Paenibacillus riograndensis, EU257201, Paenibacillaceae
Paenibacillus sonchi, DQ358736, Paenibacillaceae
Paenibacillus graminis, AJ223987, Paenibacillaceae
Paenibacillus jilunlii, GQ985393, Paenibacillaceae
Paenibacillus lentimorbus, AB073199, Paenibacillaceae
Paenibacillus popilliae, AB073198, Paenibacillaceae
Paenibacillus thiaminolyticus, AB073197, Paenibacillaceae
Paenibacillus dendritiformis, AY359885, Paenibacillaceae
Paenibacillus alvei, AJ320491, Paenibacillaceae
Paenibacillus apiarius, AB073201, Paenibacillaceae
Paenibacillus assamensis, AY884046, Paenibacillaceae
Paenibacillus taiwanensis, DQ890521, Paenibacillaceae
Paenibacillus glycanilyticus, AB042938, Paenibacillaceae
Paenibacillus catalpae, HQ657320, Paenibacillaceae
Paenibacillus prosopidis, FJ820995, Paenibacillaceae
Paenibacillus algorifonticola, GQ383922, Paenibacillaceae
Paenibacillus xinjiangensis, AY839868, Paenibacillaceae
Paenibacillus castaneae, EU099594, Paenibacillaceae
Paenibacillus humicus, AM411528, Paenibacillaceae
Paenibacillus pasadenensis, AY167820, Paenibacillaceae
Paenibacillus woopenensis, EU939687, Paenibacillaceae
Paenibacillus pinihumi, GQ423057, Paenibacillaceae
Paenibacillus tarimensis, EF125184, Paenibacillaceae
Paenibacillus daejeonensis, AF290916, Paenibacillaceae
Paenibacillus cellulosilyticus, DQ407282, Paenibacillaceae
Paenibacillus curdlandolyticus, AB073202, Paenibacillaceae
Paenibacillus kobensis, AB073363, Paenibacillaceae
Paenibacillus phyllosphaerae, AY598818, Paenibacillaceae
Paenibacillus sacheonensis, GU124597, Paenibacillaceae
Paenibacillus mendelii, AF537343, Paenibacillaceae
Paenibacillus sepulcri, DQ291142, Paenibacillaceae
Paenibacillus montaniterrae, AB295646, Paenibacillaceae
Paenibacillus siamensis, AB295645, Paenibacillaceae
Paenibacillus granivorans, AF237682, Paenibacillaceae
Paenibacillus camelliae, EU400621, Paenibacillaceae
Paenibacillus septentrionalis, AB295647, Paenibacillaceae
Paenibacillus nanensis, AB265206, Paenibacillaceae
Paenibacillus thailandensis, AB265205, Paenibacillaceae
Paenibacillus agaridevorans, AJ345023, Paenibacillaceae
Paenibacillus chungangensis, GU187432, Paenibacillaceae
Paenibacillus sputi, FN394513, Paenibacillaceae
Paenibacillus alkaliterrae, AY960748, Paenibacillaceae
Paenibacillus harenae, AY839867, Paenibacillaceae
Paenibacillus agarexedens, AJ345020, Paenibacillaceae
Paenibacillus contaminans, EF626690, Paenibacillaceae
Paenibacillus residui, FN293173, Paenibacillaceae
Paenibacillus chinjuensis, AF164345, Paenibacillaceae
Paenibacillus filicis, GQ423055, Paenibacillaceae
Paenibacillus mucilaginosus, AF006077, Paenibacillaceae
Paenibacillus rigui, EU939688, Paenibacillaceae
Paenibacillus vulneris, HE649498, Paenibacillaceae
Paenibacillus soli, DQ309072, Paenibacillaceae
Paenibacillus ginsengihumi, EF452662, Paenibacillaceae
Paenibacillus pueri, EU391156, Paenibacillaceae
Paenibacillus naphthalenovorans, AF353681, Paenibacillaceae
Paenibacillus validus, AB073203, Paenibacillaceae
Paenibacillus xylanisolvans, AB495094, Paenibacillaceae
Paenibacillus edaphicus, AF006076, Paenibacillaceae
Paenibacillus ehimensis, AY116665, Paenibacillaceae
Paenibacillus koreensis, AF130254, Paenibacillaceae
Paenibacillus elgii, AY090110, Paenibacillaceae
Paenibacillus tianmuensis, FJ719490, Paenibacillaceae
Paenibacillus alginolyticus, AB073362, Paenibacillaceae
Paenibacillus frigoresistens, JQ314346, Paenibacillaceae
Paenibacillus chondroitinus, D82064, Paenibacillaceae
Paenibacillus pocheonensis, AB245386, Paenibacillaceae
Paenibacillus aestuarii, EU570250, Paenibacillaceae
Paenibacillus pectinilyticus, EU391157, Paenibacillaceae
Paenibacillus chartarius, FN689718, Paenibacillaceae
Paenibacillus chitinolyticus, AB045100, Paenibacillaceae
Paenibacillus gansuensis, AY839866, Paenibacillaceae
Paenibacillus ginsengarvi, AB271057, Paenibacillaceae
Paenibacillus hodogayensis, AB179866, Paenibacillaceae
Paenibacillus koleovorans, AB041720, Paenibacillaceae
Paenibacillus larvae, AY530294, Paenibacillaceae
Thermobacillus composti, AB254031, Paenibacillaceae
Thermobacillus xylanilyticus, AJ005795, type sp., Paenibacillaceae

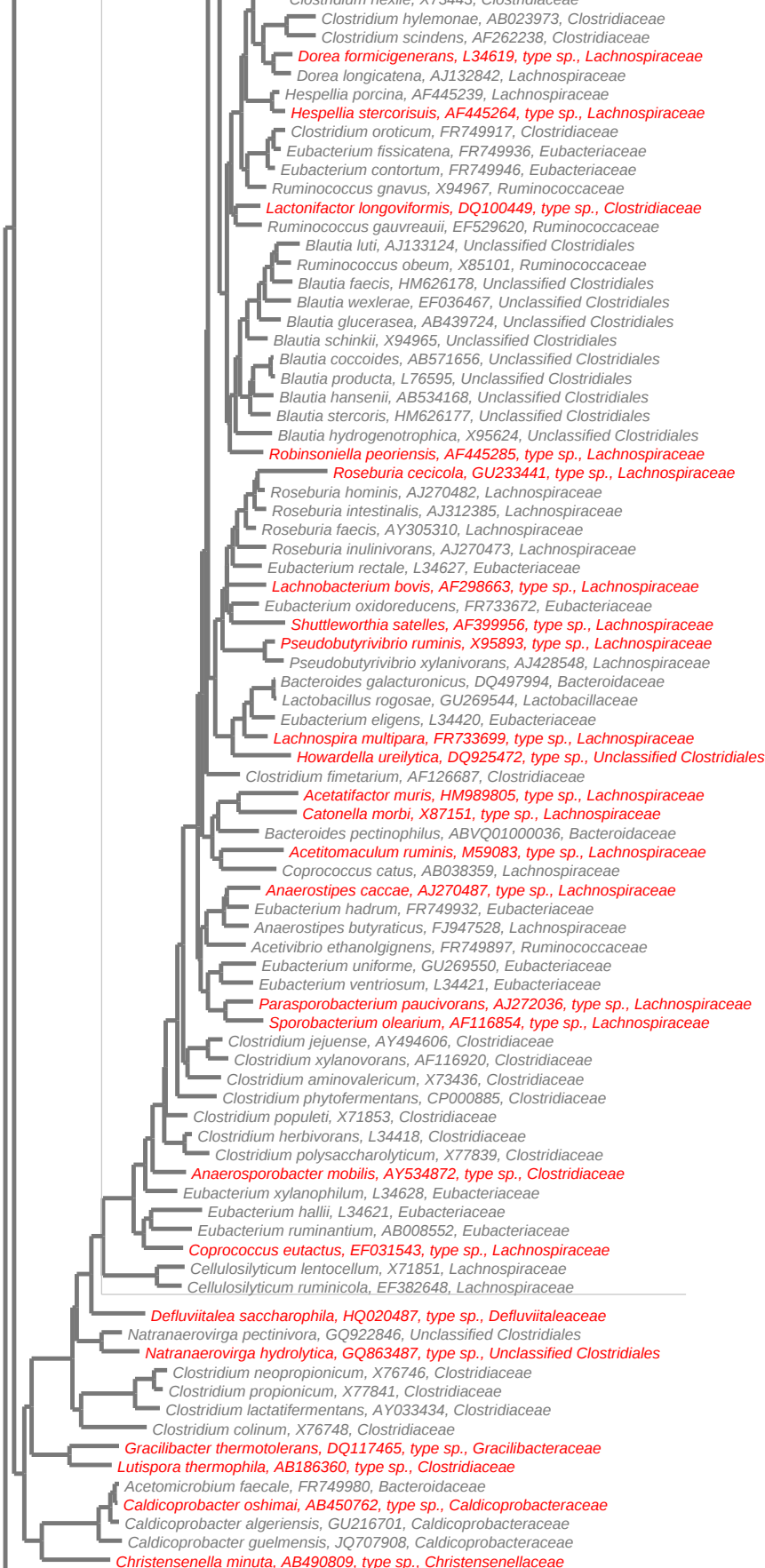
Alicyclobacillaceae (23)

Alicyclobacillus hesperidum, AJ133633, Alicyclobacillaceae
Alicyclobacillus sacchari, AB264020, Alicyclobacillaceae
Alicyclobacillus acidiphilus, AB076660, Alicyclobacillaceae
Alicyclobacillus acidoterrestris, AB042057, Alicyclobacillaceae
Alicyclobacillus fastidiosus, AB264021, Alicyclobacillaceae
Alicyclobacillus acidocaldarius subsp. rittmannii, AB059674, Alicyclobacillaceae
Alicyclobacillus sendaiensis, AB084128, Alicyclobacillaceae
Alicyclobacillus acidocaldarius subsp. acidocaldarius, AJ496806, type sp., Alicyclobacillaceae
Alicyclobacillus vulcanalis, AY425985, Alicyclobacillaceae
Alicyclobacillus macrosporangiidus, AB264025, Alicyclobacillaceae
Alicyclobacillus cycloheptanicus, AB042059, Alicyclobacillaceae
Alicyclobacillus kakegawensis, AB264022, Alicyclobacillaceae
Alicyclobacillus shizuokensis, AB264024, Alicyclobacillaceae
Alicyclobacillus herbarius, AB042055, Alicyclobacillaceae

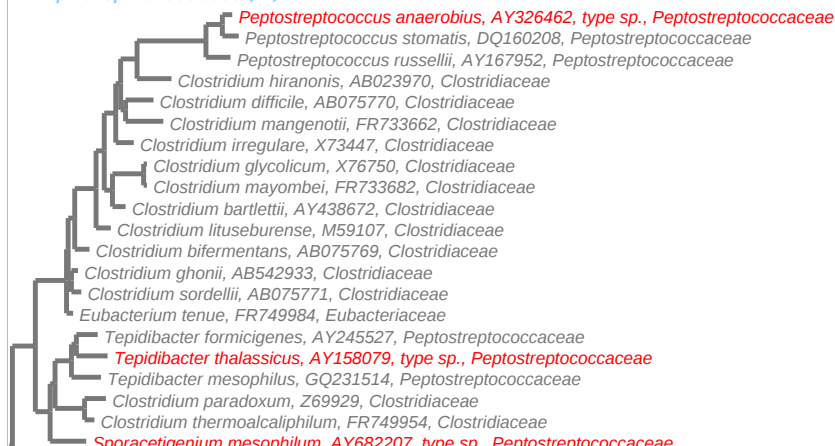


Lachnospiraceae (107)





Peptostreptococcaceae (29)



Sporobacterium mesophilum, AF682267, type sp., Peptostreptococcaceae
Eubacterium yurii subsp. yurii, GU269551, Eubacteriaceae
Eubacterium yurii subsp. margaretae, AY533381, Eubacteriaceae
Eubacterium yurii subsp. schittka, AY533382, Eubacteriaceae
Filifactor villosus, AF537211, type sp., Peptostreptococcaceae
Proteocatella sphenisci, AF450134, type sp., Unclassified Clostridiales
Acetoanaerobium noterae, GU562448, type sp., Unclassified Clostridiales
Clostridium litorale, X77845, Clostridiaceae
Eubacterium acidaminophilum, AF071416, Eubacteriaceae

Clostridiaceae 2 (15)

Clostridium aceticum, Y18183, Clostridiaceae
Clostridium formicaceticum, X77836, Clostridiaceae
Anaerovirgula multivorans, AB201750, type sp., Unclassified Clostridiales
Natronincola ferrireducens, EU878275, Clostridiaceae
Natronincola peptidivorans, EF382661, Clostridiaceae
Natronincola histidinovorans, Y16716, type sp., Clostridiaceae
Tindallia californiensis, AF373919, Clostridiaceae
Tindallia magadiensis, Y15626, type sp., Clostridiaceae
Tindallia texcoconensis, DQ234901, Clostridiaceae
Anoxynatronum sibiricum, AF522323, type sp., Clostridiaceae
Alkaliphilus oremlandii, DQ250645, Clostridiaceae
Alkaliphilus halophilus, EU627628, Clostridiaceae
Alkaliphilus crotonatoxidans, AF467248, Clostridiaceae
Alkaliphilus peptidifermentans, EF382660, Clostridiaceae
Alkaliphilus transvaalensis, AB037677, type sp., Clostridiaceae

Incertae Sedis XIII (14)

Eubacterium minutum, U13037, Eubacteriaceae
Eubacterium nodatum, Z36274, Eubacteriaceae
Eubacterium pyruvivorans, AJ310135, Eubacteriaceae
Eubacterium infirmum, U13039, Eubacteriaceae
Eubacterium sulci, AJ006963, Eubacteriaceae
Mogibacterium diversum, AB037874, Unclassified Clostridiales
Mogibacterium neglectum, AB037875, Unclassified Clostridiales
Mogibacterium vescum, AB021702, Unclassified Clostridiales
Mogibacterium timidum, Z36296, Unclassified Clostridiales
Mogibacterium pumilum, AB021701, type sp., Unclassified Clostridiales
Eubacterium brachy, Z36272, Eubacteriaceae
Anaerovorax odorimutans, AJ251215, type sp., Unclassified Clostridiales
Eubacterium sapenum, U65987, Eubacteriaceae
Acidaminobacter hydrogenoformans, AF016691, type sp., Unclassified Clostridiales

Incertae Sedis XII (3)

Fusibacter paucivorans, AF050099, type sp., Unclassified Clostridiales
Fusibacter tunisiensis, FR851323, Unclassified Clostridiales
Guggenheimella bovis, AY272039, type sp., Unclassified Clostridiales

Clostridiaceae 4 (6)

Geosporobacter subterraneus, DQ643978, type sp., Clostridiaceae
Thermotalea metallivorans, EU443727, type sp., Clostridiaceae
Salimesophilobacter vulgaris, HQ880422, type sp., Clostridiaceae
Caminicella sporogenes, AJ320233, type sp., Clostridiaceae
Clostridium caminithermale, AF458779, Clostridiaceae
Clostridium halophilum, X77837, Clostridiaceae

Clostridium purinilyticum, FR749894, Clostridiaceae
Eubacterium angustum, L34612, Eubacteriaceae
Proteiniborus ethanoligenes, EF116488, type sp., Unclassified Clostridiales

Incertae Sedis XI (38)

Anaerococcus prevotii, AF542232, type sp., Unclassified Clostridiales
Anaerococcus tetradius, AF542234, Unclassified Clostridiales
Anaerococcus octavius, Y07841, Unclassified Clostridiales
Anaerococcus lactolyticus, AF542233, Unclassified Clostridiales
Anaerococcus murdochii, DQ911243, Unclassified Clostridiales
Anaerococcus hydrogenalis, ABXA01000039, Unclassified Clostridiales
Anaerococcus vaginalis, AF542229, Unclassified Clostridiales
Murdochella asaccharolytica, EU483153, type sp., Unclassified Clostridiales
Helcococcus ovis, Y16279, Unclassified Clostridiales
Helcococcus kunzii, X69837, type sp., Unclassified Clostridiales
Helcococcus sueciensis, AJ579914, Unclassified Clostridiales
Finegoldia magna, AF542227, type sp., Unclassified Clostridiales
Gallicola barnesae, AB038361, type sp., Unclassified Clostridiales
Parvimonas micra, AY323523, type sp., Unclassified Clostridiales
Peptoniphilus gorbachii, DQ911241, Unclassified Clostridiales
Peptoniphilus harei, Y07839, Unclassified Clostridiales
Peptoniphilus olseni, DQ911242, Unclassified Clostridiales
Peptoniphilus lacrimalis, AF542230, Unclassified Clostridiales
Peptoniphilus duerdenii, EU526290, Unclassified Clostridiales
Anaerosphaera aminiphila, AB298735, type sp., Peptostreptococcaceae
Peptoniphilus asaccharolyticus, AF542228, type sp., Unclassified Clostridiales
Peptoniphilus indolicus, AY153431, Unclassified Clostridiales
Peptoniphilus methioninivorax, GU440754, Unclassified Clostridiales
Peptoniphilus coxii, GU938836, Unclassified Clostridiales
Peptoniphilus ivorii, Y07840, Unclassified Clostridiales
Bacteroides coagulans, AB547639, Bacteroidaceae
Tepidimicrobium ferriphilum, AY656718, type sp., Clostridiaceae
Tepidimicrobium xylanilyticum, EF522948, Clostridiaceae
Clostridium ultunense, Z69293, Clostridiaceae
Tissierella praeacuta, X80832, type sp., Unclassified Clostridiales
Tissierella creatinophila, X80227, Unclassified Clostridiales
Tissierella creatinini, FR749955, Unclassified Clostridiales
Soehngenia saccharolytica, AY353956, type sp., Unclassified Clostridiales
Sporanaerobacter acetigenes, AF358114, type sp., Unclassified Clostridiales
Anaerosalibacter bizertensis, HQ534365, type sp., Clostridiaceae
Sedimentibacter hydroxybenzoicus, L11305, type sp., Unclassified Clostridiales
Sedimentibacter saalensis, AJ404680, Unclassified Clostridiales
Dethiosulfatibacter aminovorans, AB218661, type sp., Unclassified Clostridiales

Clostridiaceae 3 (5)

Brassicibacter mesophilus, GU645013, type sp., Clostridiaceae
Sporosalibacterium faouarense, EU567322, type sp., Clostridiaceae
Clostridisalibacter paucivorans, EF026082, type sp., Clostridiaceae
Thermohalobacter berrensii, AF113543, type sp., Clostridiaceae
Caloranaerobacter azorensis, AJ272422, type sp., Clostridiaceae

Garciella nitratreducens, AY176772, type sp., Eubacteriaceae

Eubacteriaceae (16)

Acetobacterium paludosum, X96958, Eubacteriaceae
Acetobacterium tundrae, AJ297449, Eubacteriaceae
Acetobacterium bakii, X96960, Eubacteriaceae
Acetobacterium fimetarium, X96959, Eubacteriaceae
Acetobacterium carbinolicum, X96956, Eubacteriaceae
Acetobacterium malicum, X96957, Eubacteriaceae
Acetobacterium woodii, X96954, type sp., Eubacteriaceae
Acetobacterium wieringae, X96955, Eubacteriaceae
Eubacterium aggregans, AF073898, Eubacteriaceae
Eubacterium barkeri, M23927, Eubacteriaceae
Pseudoramibacter alactolyticus, AB036759, type sp., Eubacteriaceae
Eubacterium callanderi, X96961, Eubacteriaceae
Eubacterium limosum, M59120, type sp., Eubacteriaceae
Alkalibacter saccharofermentans, AY312403, type sp., Eubacteriaceae
Alkalibaculum bacchi, FJ438469, type sp., Eubacteriaceae
Anaerofustis stercorihominis, AJ518871, type sp., Eubacteriaceae

Incertae Sedis XIV (3)

Anaerobranca californiensis, AY064217, Unclassified Clostridiales
Anaerobranca zavarzinii, EF190921, Unclassified Clostridiales
Anaerobranca gottschalkii, AF203703, Unclassified Clostridiales

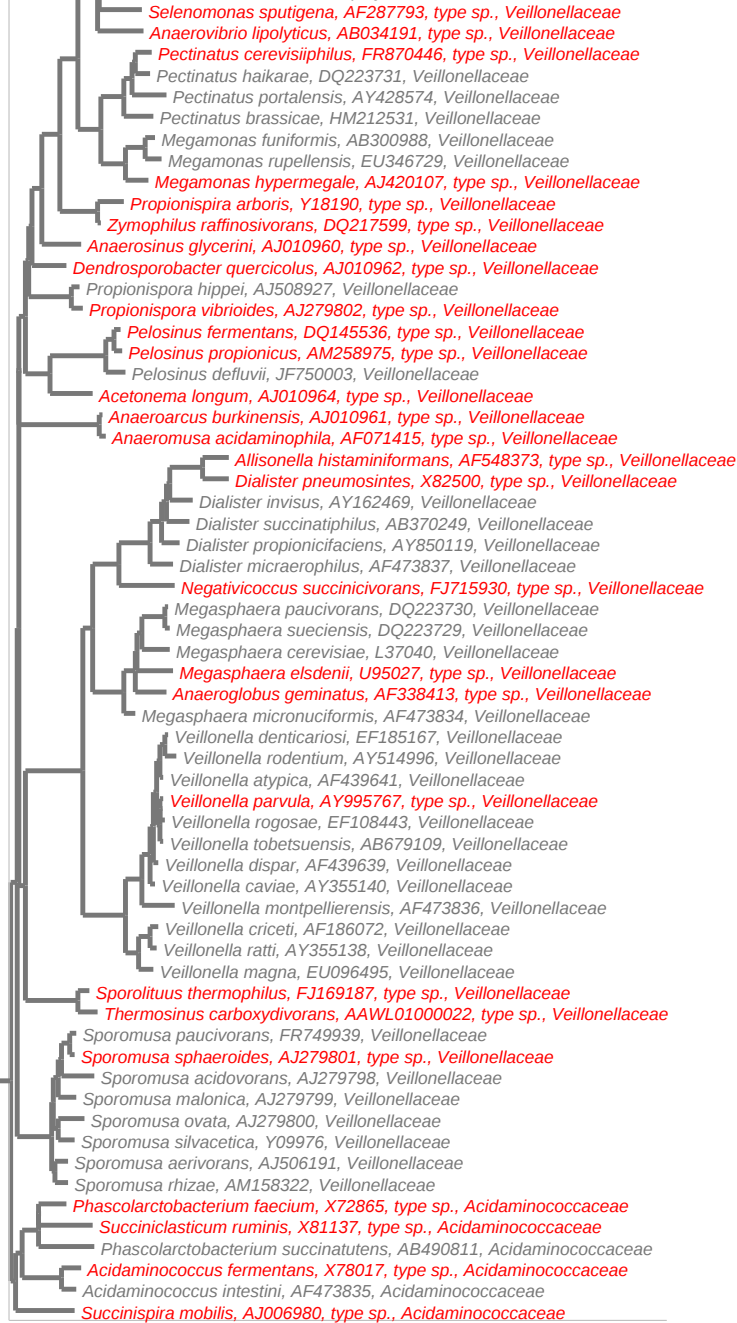
Ruminococcaceae (49)

Clostridium leptum, AJ305238, Clostridiaceae
Clostridium sporosphaeroides, X66002, Clostridiaceae
Ruminococcus bromii, L76600, Ruminococcaceae
Eubacterium coprostanoligenes, HM037995, Eubacteriaceae
Clostridium cellulosi, L09177, Clostridiaceae
Ethanoligenens harbinense, AY295777, type sp., Ruminococcaceae
Gemmiger formicilis, GU562446, type sp., Hyphomicrobiaceae
Subdoligranulum variabile, AJ518869, type sp., Ruminococcaceae
Faecalibacterium prausnitzii, AJ413954, type sp., Ruminococcaceae
Anaerofilum agile, X98011, Ruminococcaceae
Anaerofilum pentosovorans, X97852, type sp., Ruminococcaceae
Anaerotruncus colihominis, AJ315980, type sp., Ruminococcaceae
Hydrogenoanaerobacterium saccharovorans, EU158190, type sp., Ruminococcaceae
Acetanaerobacterium elongatum, AY487928, type sp., Ruminococcaceae
Ruminococcus callidus, L76596, Ruminococcaceae
Ruminococcus flavefaciens, L76603, type sp., Ruminococcaceae
Ruminococcus champanellensis, AJ515913, Ruminococcaceae
Ruminococcus albus, L76598, Ruminococcaceae
Clostridium methylpentosum, Y18181, Clostridiaceae
Eubacterium siraeum, L34625, Eubacteriaceae
Flavonifractor plautii, AY724678, type sp., Unclassified Clostridiales
Pseudoflavonifractor capillosus, AY136666, type sp., Unclassified Clostridiales
Clostridium viride, X81125, Clostridiaceae
Oscillibacter valericigenes, AB238598, type sp., Oscillospiraceae
Papillibacter cinnamivorans, AF167711, type sp., Ruminococcaceae
Sporobacter termitidis, Z49863, type sp., Ruminococcaceae
Butyricoccus pullicaecorum, EU410376, type sp., Clostridiaceae
Eubacterium desmolans, L34618, Eubacteriaceae
Clostridium cellulolyticum, X71847, Clostridiaceae
Clostridium papyrosolvans, X71852, Clostridiaceae
Clostridium hungatei, FR749966, Clostridiaceae
Clostridium sufflavum, AB267266, Clostridiaceae
Clostridium cellobioparum, X71856, Clostridiaceae
Clostridium termitidis, FR733680, Clostridiaceae
Clostridium thermosuccinogenes, Y18180, Clostridiaceae
Cellulosibacter alkalithermophilus, FJ815191, type sp., Clostridiaceae
Bacteroides cellulosolvans, L35517, Bacteroidaceae
Acetivibrio cellulolyticus, L35516, type sp., Ruminococcaceae
Clostridium aldrichii, X71846, Clostridiaceae
Clostridium alkalicellulosi, AY959944, Clostridiaceae
Clostridium clariflavum, AB186359, Clostridiaceae
Clostridium thermocellum, CP000568, Clostridiaceae
Clostridium straminisolvans, AB125279, Clostridiaceae
Saccharofermentans acetigenes, AY949857, type sp., Clostridiaceae
Fastidiosipila sanguinis, AJ575187, type sp., Ruminococcaceae
Clostridium stercorarium subsp. thermolacticum, X72870, Clostridiaceae
Clostridium stercorarium subsp. leptospartum, AF266461, Clostridiaceae
Clostridium stercorarium subsp. stercorarium, AJ310082, Clostridiaceae
Clostridium caenicola, AB221372, Clostridiaceae

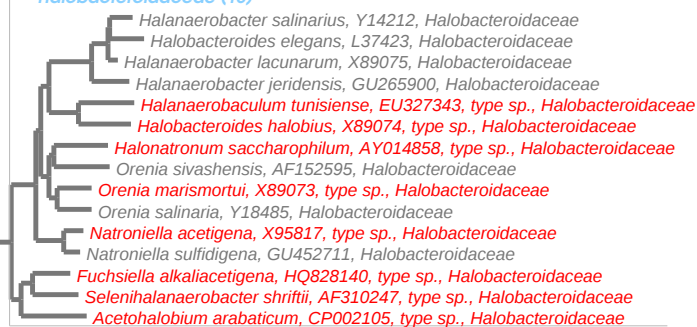
Pelospora glutarica, AJ251214, type sp., Syntrophomonadaceae
Syntrophomonas palmitatica, AB274039, Syntrophomonadaceae
Syntrophomonas curvata, AY290767, Syntrophomonadaceae
Syntrophomonas sapovorans, AF022249, Syntrophomonadaceae
Syntrophomonas wolfei subsp. saponavida, DQ666175, Syntrophomonadaceae
Syntrophomonas zehnderi, DQ898277, Syntrophomonadaceae
Syntrophomonas cellicola, DQ288691, Syntrophomonadaceae
Syntrophomonas wolfei subsp. wolfei, CP000448, type sp., Syntrophomonadaceae
Syntrophomonas erecta, AY536889, Syntrophomonadaceae
Thermosyntropha lipolytica, X99980, type sp., Syntrophomonadaceae
Thermosyntropha tengcongensis, HM807481, Syntrophomonadaceae
Syntrophothermus lipocalidus, AB021305, type sp., Syntrophomonadaceae
Desulfitibacter alkalitolerans, AY538171, type sp., Peptococcaceae
Desulfitispora alkaliphila, FJ788525, type sp., Peptococcaceae

Veillonellaceae (75)

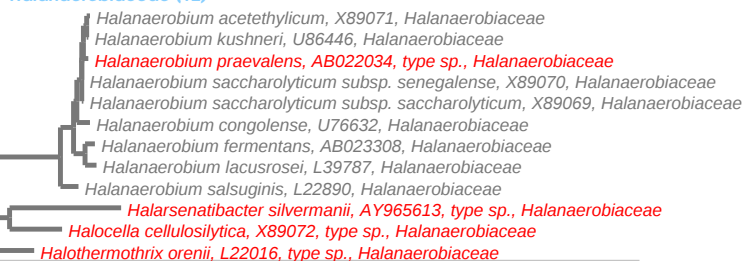
Selenomonas artemidis, GQ422716, Veillonellaceae
Selenomonas noxia, AF287799, Veillonellaceae
Selenomonas flueggei, AF287803, Veillonellaceae
Selenomonas infelix, AF287802, Veillonellaceae
Selenomonas diana, AF287801, Veillonellaceae
Centipeda periodontii, AJ010963, type sp., Veillonellaceae
Schwartzia succinivorans, Y09434, type sp., Veillonellaceae
Mitsuokella jalaludinii, AF479674, Veillonellaceae
Mitsuokella multacida, X81878, type sp., Veillonellaceae
Selenomonas ruminantium subsp. ruminantium, M62702, Veillonellaceae
Selenomonas ruminantium subsp. lactilytica, AB003379, Veillonellaceae
Selenomonas bovis, EF139191, Veillonellaceae
Selenomonas lipolytica, AF001901, Veillonellaceae



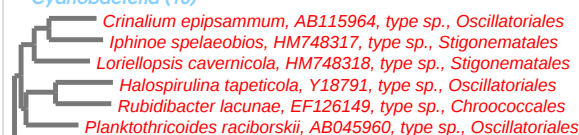
Halobacteroidaceae (15)



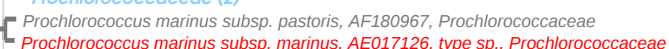
Halanaerobiaceae (12)

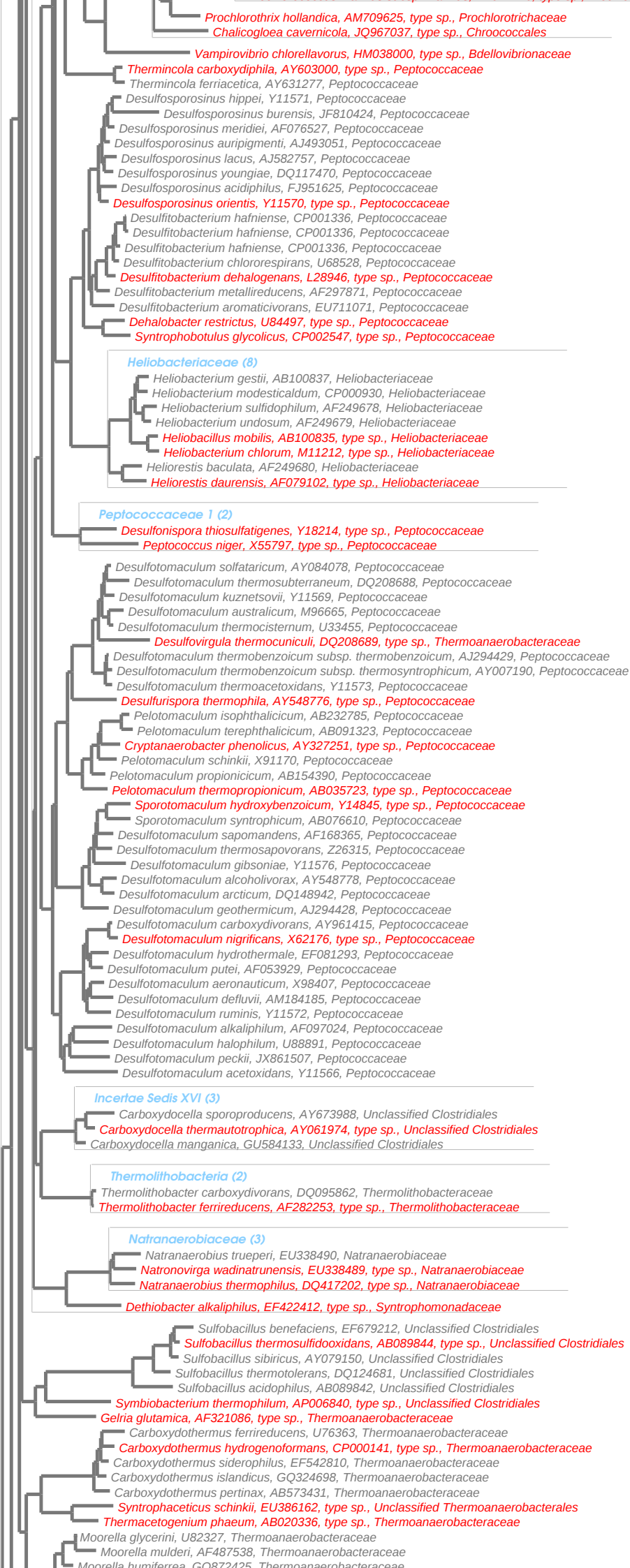


Cyanobacteria (10)



Prochlorococcaceae (2)





Moorella thermotrophica, L09168, Thermoanaerobacteraceae
Moorella thermoacetica, AY656675, type sp., Thermoanaerobacteraceae

Thermoanaerobacteraceae (25)

Thermoanaerobacter acetoethylicus, L09163, Thermoanaerobacteraceae
Thermoanaerobacter ethanolicus, L09162, type sp., Thermoanaerobacteraceae
Thermoanaerobacter pseudethanolicus, CP000924, Thermoanaerobacteraceae
Thermoanaerobacter thermohydrosulfuricus, L09161, Thermoanaerobacteraceae
Thermoanaerobacter sulfurophilus, Y16940, Thermoanaerobacteraceae
Thermoanaerobacter wiegelsii, X92513, Thermoanaerobacteraceae
Thermoanaerobacter siderophilus, AF120479, Thermoanaerobacteraceae
Thermoanaerobacter kivui, L09160, Thermoanaerobacteraceae
Thermoanaerobacter brockii subsp. finnii, L09166, Thermoanaerobacteraceae
Thermoanaerobacter brockii subsp. brockii, L09165, Thermoanaerobacteraceae
Thermoanaerobacter pseudethanolicus, CP000924, Thermoanaerobacteraceae
Thermoanaerobacter brockii subsp. lactiethylicus, U14330, Thermoanaerobacteraceae
Thermoanaerobacter mathranii subsp. mathranii, Y11279, Thermoanaerobacteraceae
Thermoanaerobacter mathranii subsp. alimentarius, AY701758, Thermoanaerobacteraceae
Thermoanaerobacter italicus, AJ250846, Thermoanaerobacteraceae
Thermoanaerobacter thermocopriae, L09167, Thermoanaerobacteraceae
Thermoanaerobacter sulfurigignens, AF234164, Thermoanaerobacteraceae
Thermoanaerobacter uzonensis, EF530067, Thermoanaerobacteraceae
Caldanaerobacter subterraneus subsp. pacificus, ABXP01000185, Thermoanaerobacteraceae
Caldanaerobacter subterraneus subsp. tengcongensis, AE008691, Thermoanaerobacteraceae
Caldanaerobacter subterraneus subsp. subterraneus, AF195797, type sp., Thermoanaerobacteraceae
Caldanaerobacter subterraneus subsp. yonseiensis, AF212925, Thermoanaerobacteraceae
Caldanaerobacter uzonensis, EF195126, Thermoanaerobacteraceae
Ammonifex degensii, CP001785, type sp., Thermoanaerobacteraceae
Ammonifex thiophilus, EF554597, Thermoanaerobacteraceae

Caldanaerovirga acetigignens, EF530069, type sp., Unclassified Thermoanaerobacterales
Thermovorax subterraneus, EU370564, type sp., Unclassified Thermoanaerobacterales
Fervidicola ferrireducens, EU443728, type sp., Syntrophomonadaceae
Thermosediminibacter litoriperuensis, AY703479, Unclassified Thermoanaerobacterales
Thermosediminibacter oceani, AY703478, type sp., Unclassified Thermoanaerobacterales
Thermovenabulum ferriorganovorum, AY033493, type sp., Unclassified Thermoanaerobacterales
Thermovenabulum gondwanense, EU443729, Unclassified Thermoanaerobacterales
Tepidanaerobacter syntrophicus, AB106353, type sp., Thermoanaerobacteraceae

Dictyoglomi (2)

Dictyoglomus thermophilum, X69194, type sp., Dictyoglomaceae
Dictyoglomus turgidum, CP001251, Dictyoglomaceae

Thermaeromonas toyohensis, AB062280, type sp., Thermoanaerobacteraceae

Caldicellulosiruptor acetigenus, AY772476, Unclassified Thermoanaerobacterales
Caldicellulosiruptor kristjanssonii, AJ004811, Unclassified Thermoanaerobacterales
Caldicellulosiruptor lactoaceticus, X82842, Unclassified Thermoanaerobacterales
Caldicellulosiruptor saccharolyticus, L09178, type sp., Unclassified Thermoanaerobacterales
Caldicellulosiruptor owensensis, U80596, Unclassified Thermoanaerobacterales
Caldicellulosiruptor hydrothermalis, EF100908, Unclassified Thermoanaerobacterales
Caldicellulosiruptor bescii, CP001393, Unclassified Thermoanaerobacterales
Caldicellulosiruptor kronotskyensis, EF100909, Unclassified Thermoanaerobacterales

Thermaerobacter nagasakiensis, AB061441, Unclassified Clostridiales
Thermaerobacter subterraneus, AF343566, Unclassified Clostridiales
Thermaerobacter litoralis, AY936496, Unclassified Clostridiales
Thermaerobacter composti, AB454087, Unclassified Clostridiales

Thermaerobacter marianensis, AB011495, type sp., Unclassified Clostridiales

Aquificae (29)

Aquificaceae (11)

Hydrogenivirga caldilitoris, AB120294, type sp., Aquificaceae
Hydrogenivirga okinawensis, AB235314, Aquificaceae
Aquifex pyrophilus, M83548, type sp., Aquificaceae
Thermocrinis albus, AJ278895, Aquificaceae
Thermocrinis ruber, AJ005640, type sp., Aquificaceae
Thermocrinis minervae, AM260555, Aquificaceae
Hydrogenobacter hydrogenophilus, Z30242, Aquificaceae
Hydrogenobacter thermophilus, CP002221, type sp., Aquificaceae
Hydrogenobacter subterraneus, AB026268, Aquificaceae
Thermothrix azorensis, GU233444, Burkholderiaceae
Hydrogenobaculum acidophilum, D16296, type sp., Aquificaceae

Hydrogenothermaceae (9)

Sulfurihydrogenibium azorense, AF528192, Hydrogenothermaceae
Sulfurihydrogenibium rodmanii, AM259502, Hydrogenothermaceae
Sulfurihydrogenibium kristjanssonii, AM778960, Hydrogenothermaceae
Sulfurihydrogenibium subterraneum, AB071324, type sp., Hydrogenothermaceae
Sulfurihydrogenibium yellowstonense, AY686713, Hydrogenothermaceae
Venenivibrio stagnispumantis, DQ989208, type sp., Hydrogenothermaceae
Persephonella guaymasensis, AF385630, Hydrogenothermaceae
Persephonella marina, AF188332, type sp., Hydrogenothermaceae
Persephonella hydrogeniphila, AB086419, Hydrogenothermaceae

Desulfobacteriaceae (8)

Thermovibrio ammonificans, AY263403, Desulfobacteriaceae
Thermovibrio guaymasensis, AY268937, Desulfobacteriaceae
Balnearium lithotrophicum, AB105049, type sp., Desulfobacteriaceae
Thermovibrio ruber, AJ316619, type sp., Desulfobacteriaceae
Desulfobacterium atlanticum, AY268939, Desulfobacteriaceae
Desulfobacterium pacificum, AY268936, Desulfobacteriaceae
Desulfobacterium thermolithotrophum, AJ001049, type sp., Desulfobacteriaceae
Phorcysia thermohydrogeniphila, HQ336972, type sp., Desulfobacteriaceae

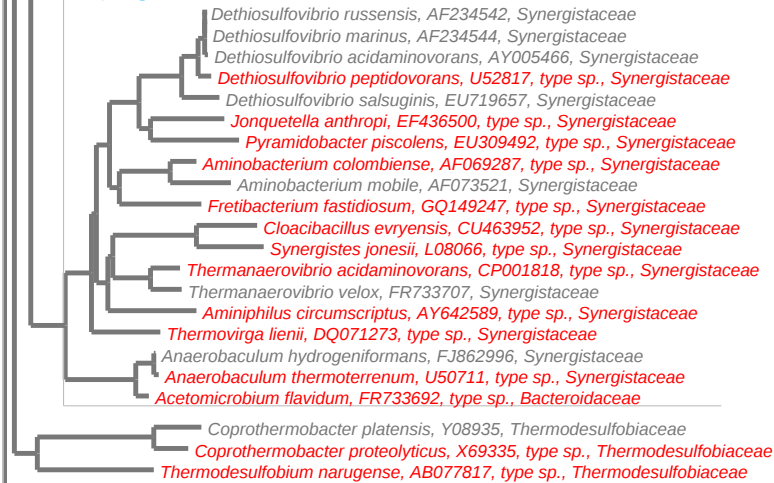
Thermosulfidibacter takaii, AB282756, type sp., Unclassified Aquificales

Thermodesulfobacteria (8)

Thermodesulfobacterium hveragerdense, X96725, Thermodesulfobacteriaceae
Thermodesulfobacterium thermophilum, AF334601, Thermodesulfobacteriaceae
Thermodesulfobacterium commune, AF418169, type sp., Thermodesulfobacteriaceae
Thermodesulfobacterium hydrogeniphilum, AF332514, Thermodesulfobacteriaceae
Caldimicrobium rimae, EF554596, type sp., Thermodesulfobacteriaceae
Thermosulfurimonas dismutans, JF346116, Thermodesulfobacteriaceae
Thermodesulfatator atlanticus, EU435435, Thermodesulfobacteriaceae
Thermodesulfatator indicus, AF393376, type sp., Thermodesulfobacteriaceae

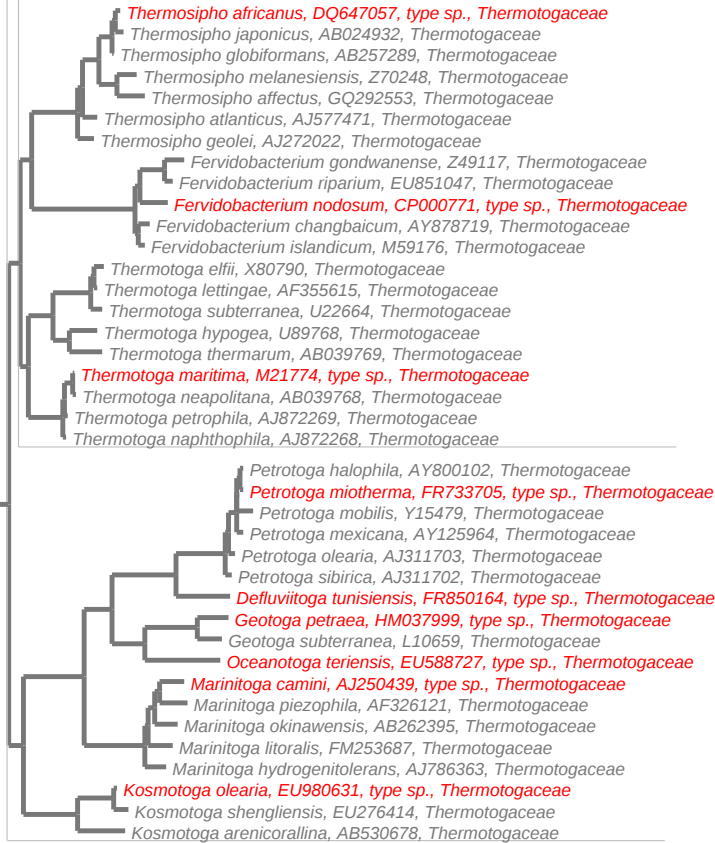
Caldisericum exile, AB428365, type sp., Caldiseriaceae

Synergistetes (19)



Thermotogae (39)

Thermotogaceae (21)

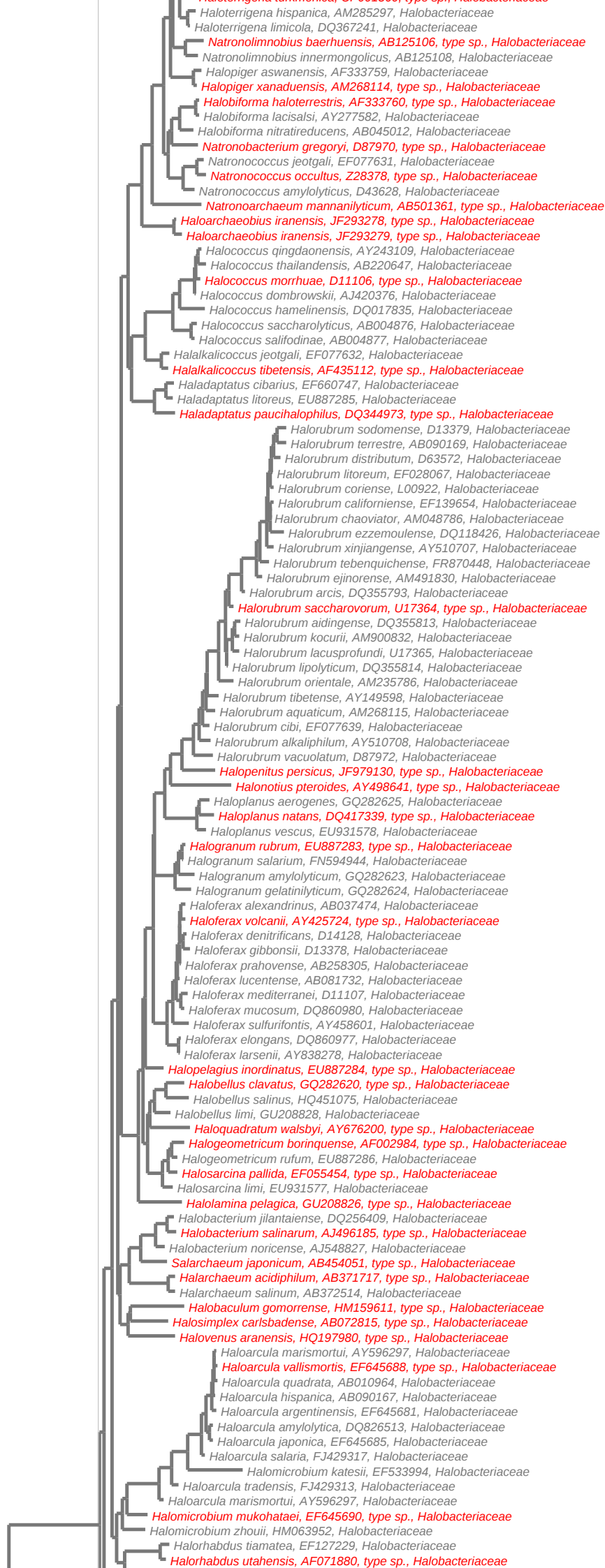


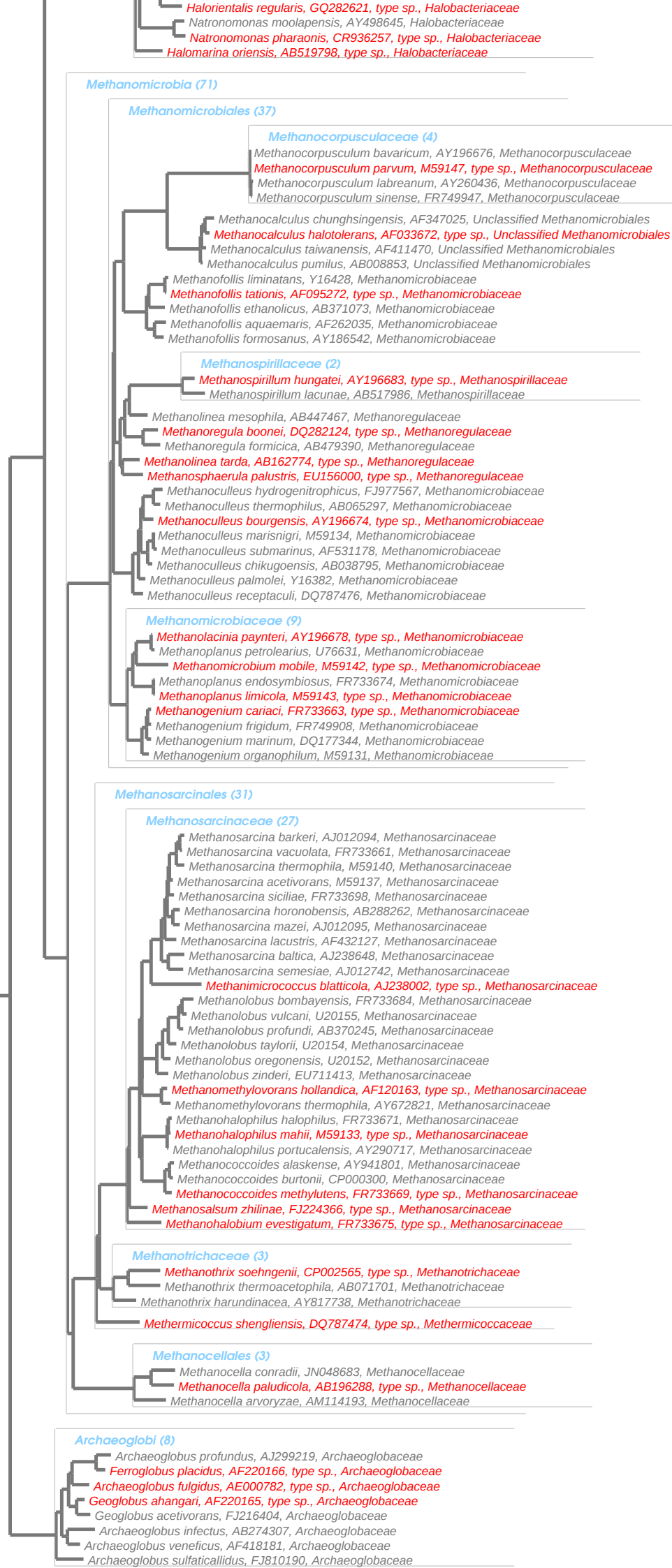
Archaea (366)

Euryarchaeota (318)

Halobacteria (141)







Methanobacterium kanagense, AB368917, *Methanobacteriaceae*
Methanobacterium petrolearium, AB542742, *Methanobacteriaceae*
Methanobacterium ferruginis, AB542743, *Methanobacteriaceae*
Methanobacterium subterraneum, X99044, *Methanobacteriaceae*
Methanobacterium formicicum, AF169245, *type sp.*, *Methanobacteriaceae*
Methanobacterium palustre, AF093061, *Methanobacteriaceae*
Methanobacterium alcaliphilum, DQ649335, *Methanobacteriaceae*
Methanobacterium congolense, AF233586, *Methanobacteriaceae*
Methanobacterium lacus, HQ110085, *Methanobacteriaceae*
Methanobacterium ivanovii, AF095261, *Methanobacteriaceae*
Methanobacterium arcticum, DQ517520, *Methanobacteriaceae*
Methanobacterium veterum, EF016285, *Methanobacteriaceae*
Methanobacterium bryantii, AY196657, *Methanobacteriaceae*
Methanobacterium oryzae, AF028690, *Methanobacteriaceae*
Methanobacterium beijingense, AY350742, *Methanobacteriaceae*
Methanobrevibacter curvatus, U62533, *Methanobacteriaceae*
Methanobrevibacter filiformis, U82322, *Methanobacteriaceae*
Methanobrevibacter cuticularis, U41095, *Methanobacteriaceae*
Methanobrevibacter arborophilus, AY196665, *Methanobacteriaceae*
Methanobrevibacter acididurans, AF242652, *Methanobacteriaceae*
Methanobrevibacter gottschalkii, U55238, *Methanobacteriaceae*
Methanobrevibacter thaueri, U55236, *Methanobacteriaceae*
Methanobrevibacter millerae, AY196673, *Methanobacteriaceae*
Methanobrevibacter smithii, U55233, *Methanobacteriaceae*
Methanobrevibacter woesei, U55237, *Methanobacteriaceae*
Methanobrevibacter olleyae, AY615201, *Methanobacteriaceae*
Methanobrevibacter ruminantium, AY196666, *type sp.*, *Methanobacteriaceae*
Methanobrevibacter wolnii, U55240, *Methanobacteriaceae*
Methanosphaera stadtmanae, CP000102, *type sp.*, *Methanobacteriaceae*
Methanobacterium aarhusense, AY386124, *Methanobacteriaceae*
Methanobacterium flexile, EU333914, *Methanobacteriaceae*
Methanobacterium movens, EU366499, *Methanobacteriaceae*
Methanothermobacter thermophilus, X99048, *Methanobacteriaceae*
Methanothermobacter thermoflexus, X99047, *Methanobacteriaceae*
Methanothermobacter defluvi, X99046, *Methanobacteriaceae*
Methanothermobacter thermoautotrophicus, AY196660, *type sp.*, *Methanobacteriaceae*
Methanothermobacter wolfeii, AB104858, *Methanobacteriaceae*
Methanothermobacter marburgensis, X15364, *Methanobacteriaceae*
Methanothermobacter crinale, HQ283273, *Methanobacteriaceae*
Methanothermobacter tenebrarum, AB523785, *Methanobacteriaceae*
Methanothermobacter fervidus, CP002278, *type sp.*, *Methanothermaceae*
Methanothermobacter sociabilis, HE654004, *Methanothermaceae*

Thermococcus barossii, AY099173, Thermococcaceae
Thermococcus celer, AY099174, type sp., Thermococcaceae
Thermococcus hydrothermalis, AY099179, Thermococcaceae
Thermococcus coalescens, AB107767, Thermococcaceae
Thermococcus thioerducens, AF394925, Thermococcaceae
Thermococcus celericrescens, AB107768, Thermococcaceae
Thermococcus siculi, AY099185, Thermococcaceae
Thermococcus atlanticus, AJ310754, Thermococcaceae
Thermococcus stetteri, AY099186, Thermococcaceae
Thermococcus fumicolans, AY099176, Thermococcaceae
Thermococcus gammatolerans, AF479014, Thermococcaceae
Thermococcus kodakarensis, D38650, Thermococcaceae
Thermococcus peptonophilus, AY099183, Thermococcaceae
Thermococcus waiotapuensis, AY099187, Thermococcaceae
Thermococcus zilligii, Y76534, Thermococcaceae
Thermococcus pacificus, AY099182, Thermococcaceae
Thermococcus acidaminovorans, AY099170, Thermococcaceae
Thermococcus profundus, AY099184, Thermococcaceae
Thermococcus gorgonarius, AY099177, Thermococcaceae
Thermococcus guaymasensis, AY099178, Thermococcaceae
Pyrococcus furiosus, AE009950, type sp., Thermococcaceae
Pyrococcus horikoshii, AY099169, Thermococcaceae
Pyrococcus glycovorans, AY099168, Thermococcaceae
Thermococcus chitonophagus, AY099175, Thermococcaceae
Pyrococcus yayanosii, EU682399, Thermococcaceae
Thermococcus barophilus, AY099172, Thermococcaceae
Thermococcus aggregans, Y08384, Thermococcaceae
Thermococcus aegaeus, AY099171, Thermococcaceae
Thermococcus sibiricus, AJ238992, Thermococcaceae
Thermococcus litoralis, FR749899, Thermococcaceae
Thermococcus alcaliphilus, AB055121, Thermococcaceae
Palaeococcus ferrophilus, AB019239, type sp., Thermococcaceae
Palaeococcus pacificus, HQ696462, Thermococcaceae
Palaeococcus helgesonii, AY134472, Thermococcaceae

The phylogenetic tree illustrates the relationships within the order Thermoplasmatales. It is rooted on the left and branches out to three main families. The first family, Ferroplassmaceae (3), includes *Acidiplasma aeolicum* (AM943980, type sp.) and *Acidiplasma cupricumulans* (AY907888). The second family, Picrophilaceae (2), includes *Picrophilus oshimae* (X84901, type sp.) and *Picrophilus torridus* (AE017261). The third family, Thermoplasmataceae (2), includes *Thermoplasma acidophilum* (M38637, type sp.) and *Thermoplasma volcanium* (AJ299215). Below these families, two additional species are listed: *Thermogymnomonas acidicola* (AB269873, type sp.) and *Methanomassiliococcus lumnivensis* (H0896499, type sp.).

- Ferroplassmaceae (3)**
 - Acidiplasma aeolicum*, AM943980, type sp., Ferroplassmaceae
 - Acidiplasma cupricumulans*, AY907888, Ferroplassmaceae
 - Ferroplasma acidiphilum*, AJ224936, type sp., Ferroplassmaceae
- Picrophilaceae (2)**
 - Picrophilus oshimae*, X84901, type sp., Picrophilaceae
 - Picrophilus torridus*, AE017261, Picrophilaceae
- Thermoplasmataceae (2)**
 - Thermoplasma acidophilum*, M38637, type sp., Thermoplasmataceae
 - Thermoplasma volcanium*, AJ299215, Thermoplasmataceae
- Thermogymnomonas acidicola*, AB269873, type sp., Unclassified Thermoplasmatales
- Methanomassiliococcus lumnivensis*, H0896499, type sp., Unclassified Methanomicrobia

Phylogenetic tree showing relationships between *Methanococcus* and *Methanothermococcus* species, with bootstrap values indicated at the nodes. The tree is rooted with *Methanothermococcus formicicus* (AB100884) as the outgroup. The main clade contains *Methanococcus* species, with *Methanothermococcus thermolithotrophicus* (M59128) and *Methanococcus vannielii* (AY196675) highlighted in red.

```
graph LR; A[Methanothermococcus formicicus AB100884] --- B; B --- C; C --- D; D --- E[Methanothermococcus thermolithotrophicus M59128]; E --- F[Methanococcus vannielii AY196675]; F --- G[Methanothermococcus okinawensis AB057722]; G --- H[Methanococcus aeolicus DQ195164];
```

Species and Accession Numbers:

- Methanothermococcus formicicus* AB100884
- Methanothermococcus thermolithotrophicus* M59128
- Methanococcus vannielii* AY196675
- Methanothermococcus okinawensis* AB057722
- Methanococcus aeolicus* DQ195164

Methanotorris igneus, CP002737, type sp., Methanocaldococcaceae

Methanocaldococcaceae (6)

- Methanocaldococcus indicus*, AF547621, Methanocaldococcaceae
- Methanocaldococcus infernus*, AF025822, Methanocaldococcaceae
- Methanocaldococcus villosus*, FJ766848, Methanocaldococcaceae
- Methanocaldococcus vulcanius*, AF051404, Methanocaldococcaceae
- Methanocaldococcus jannaschii*, L77117, type sp., Methanocaldococcaceae
- Methanocaldococcus fervens*, AF056938, Methanocaldococcaceae

Methanopyrus kandleri, AE009439, type sp., Methanopyraceae

Crenarchaeota (48)

Sulfolobaceae (16)

- Metallosphaera prunae*, X90482, Sulfolobaceae
- Metallosphaera sedula*, D26491, type sp., Sulfolobaceae
- Metallosphaera hakonensis*, D86414, Sulfolobaceae
- Metallosphaera cuprina*, FN796482, Sulfolobaceae
- Acidianus brierleyi*, D26489, Sulfolobaceae
- Acidianus ambivalens*, D85506, Sulfolobaceae
- Acidianus infernus*, D85505, type sp., Sulfolobaceae
- Acidianus sulfidivorans*, AY907891, Sulfolobaceae
- Sulfurisphaera ohwakuensis*, D85507, type sp., Sulfolobaceae
- Sulfolobus tokodaii*, AB022438, Sulfolobaceae
- Sulfolobus yangmingensis*, AB010957, Sulfolobaceae
- Stygiolobus azoricus*, D85520, type sp., Sulfolobaceae
- Sulfolobus acidocaldarius*, D14876, type sp., Sulfolobaceae
- Sulfolobus metallicus*, D85519, Sulfolobaceae
- Sulfolobus shibatae*, M32504, Sulfolobaceae
- Sulfolobus solfataricus*, D26490, Sulfolobaceae

Thermoproteales (11)

Thermoproteaceae (10)

- Pyrobaculum arsenaticum*, AJ277124, Thermoproteaceae
- Pyrobaculum oguniense*, AB087402, Thermoproteaceae
- Thermoproteus neutrophilus*, CP001014, Thermoproteaceae
- Pyrobaculum aerophilum*, L07510, Thermoproteaceae
- Pyrobaculum caldifontis*, AB078332, Thermoproteaceae
- Thermoproteus tenax*, M35966, type sp., Thermoproteaceae
- Vulcanisaeta distributa*, AB063630, type sp., Thermoproteaceae
- Vulcanisaeta souniana*, AB063645, Thermoproteaceae
- Caldivirga maquilingensis*, AB013926, type sp., Thermoproteaceae
- Thermocladium modestius*, AB005296, type sp., Thermoproteaceae

Thermofilum pendens, X14835, type sp., Thermofilaceae

Desulfurococcoales and Fervidicoccoales (10)

- Desulfurococcus fermentans*, AY264344, Desulfurococcaceae
- Desulfurococcus kamchatkensis*, EU167539, Desulfurococcaceae
- Desulfurococcus mucosus*, CP002363, type sp., Desulfurococcaceae
- Thermosphaera aggregans*, X99556, type sp., Desulfurococcaceae
- Sulfolobococcus zilligii*, X98064, type sp., Desulfurococcaceae
- Staphylothermus hellenicus*, AJ012645, Desulfurococcaceae
- Staphylothermus marinus*, X99560, type sp., Desulfurococcaceae
- Ignicoccus islandicus*, X99562, type sp., Desulfurococcaceae
- Ignicoccus pacificus*, AJ271794, Desulfurococcaceae
- Ignicoccus hospitalis*, AJ318042, Desulfurococcaceae
- Aeropyrum camini*, AB109559, Desulfurococcaceae
- Aeropyrum pernix*, D83259, type sp., Desulfurococcaceae
- Thermodiscus maritimus*, X99554, type sp., Desulfurococcaceae
- Stetteria hydrogenophila*, Y07784, type sp., Desulfurococcaceae

Acidilobales (3)

- Acidilobus aceticus*, AF191225, type sp., Acidilobaceae
- Acidilobus saccharovorans*, AY350586, Acidilobaceae
- Caldisphaera lagunensis*, AB087499, type sp., Caldisphaeraceae

Fervidicoccus fontis, CP003423, type sp., Fervidicoccaceae

Ignisphaera aggregans, DQ060321, type sp., Desulfurococcaceae

Pyrodictiaceae (2)

- Hyperthermus butylicus*, CP000493, type sp., Pyrodictiaceae
- Pyrodictium occultum*, M21087, type sp., Pyrodictiaceae