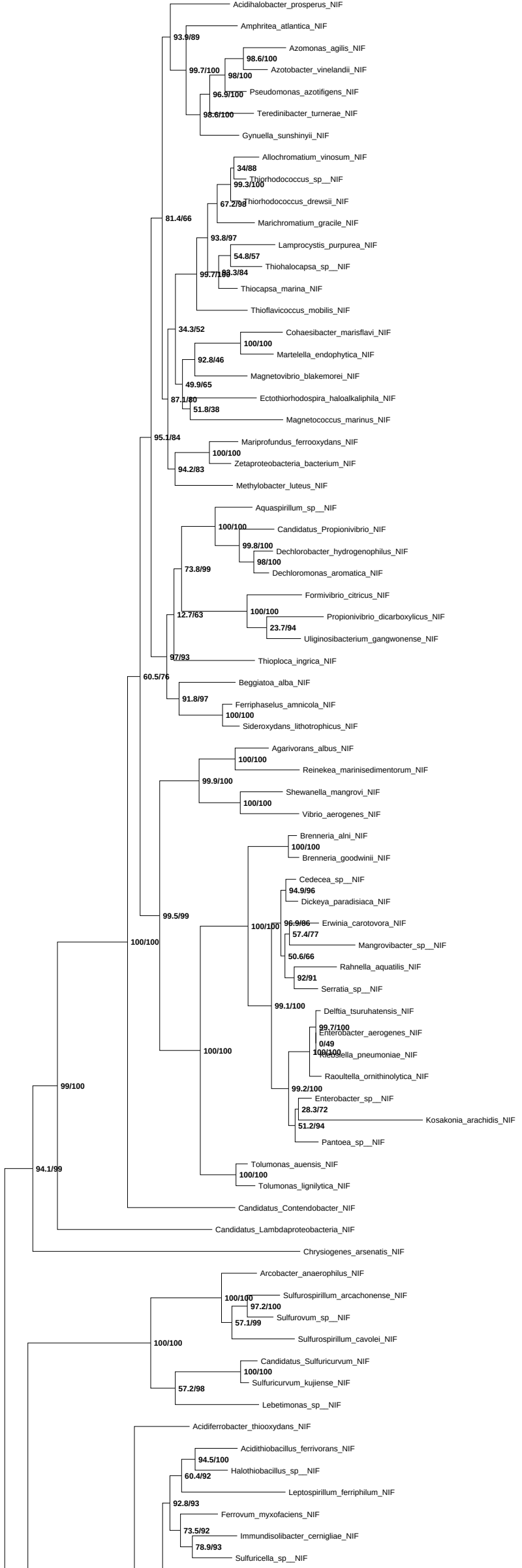
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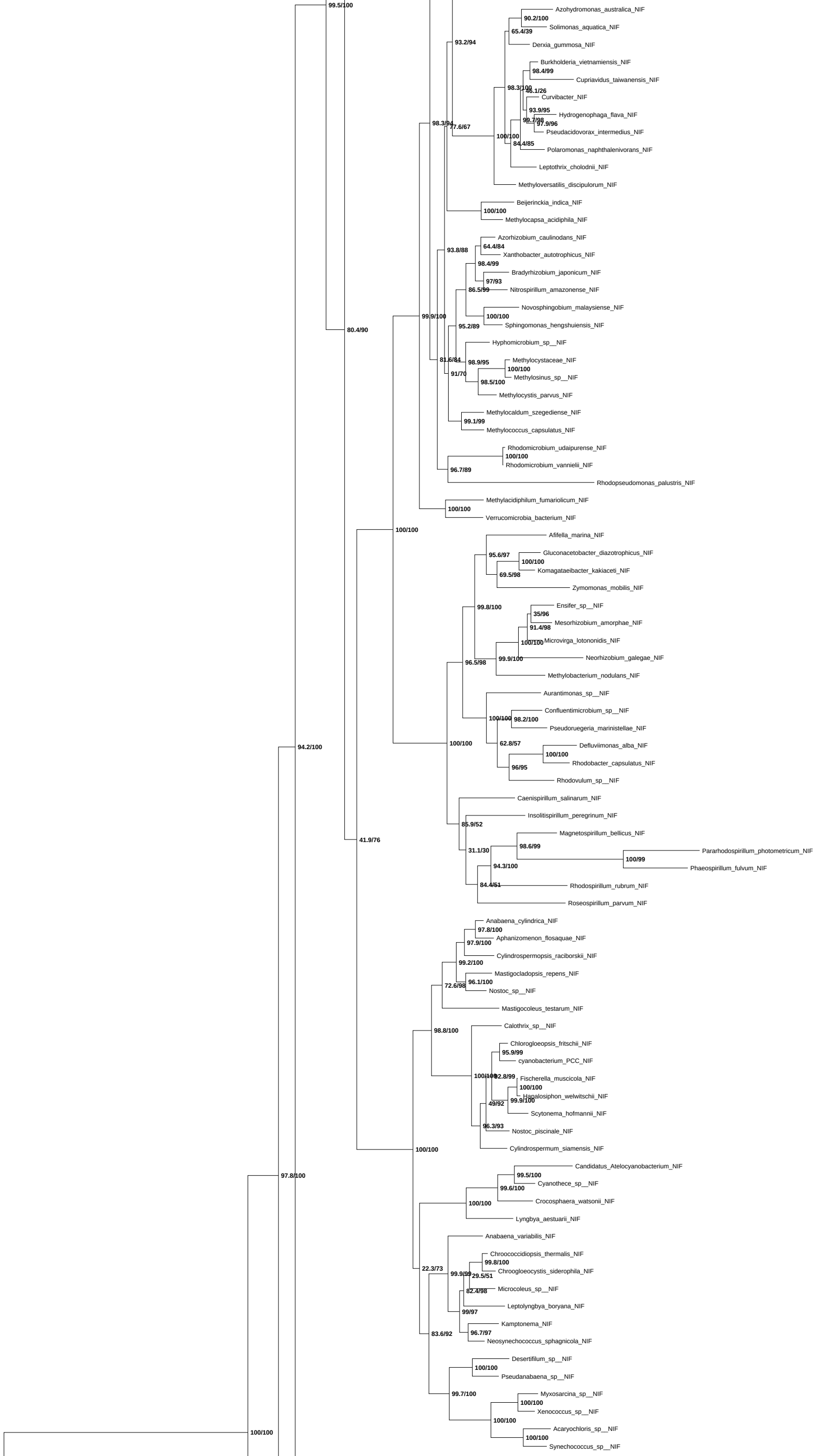
Amphritea_atlantica_NIF
93.9/89
Azomonas_agilis_NIF
98.6/100
Azotobacter_vinelandii_NIF
99.7/100
98/100
Pseudomonas_azotifigens_NIF
96.9/100
98.6/100
Teredinibacter_turnerae_NIF
Gynuella_sunshinyii_NIF
Allochromatium_vinosum_NIF
34/88
Thiorhodococcus_sp__NIF
99.3/100
Thiorhodococcus_drewsii_NIF
67.2/98
81.4/66
Marichromatium_gracile_NIF
93.8/97
Lamprocystis_purpurea_NIF
54.8/57
Thiohalocapsa_sp__NIF
99.7/100
83.3/84
Thiocapsa_marina_NIF
Thioflavicoccus_mobilis_NIF
34.3/52
Cohaesibacter_marisflavi_NIF
100/100
Martelella_endophytica_NIF
92.8/46
Magnetovibrio_blakemorei_NIF
49.9/65
87.1/80
Ectothiorhodospira_haloalkaliphila_NIF
51.8/38
Magnetococcus_marinus_NIF
95.1/84
Mariprofundus_ferrooxydans_NIF
100/100
Zetaproteobacteria_bacterium_NIF
94.2/83
Methylobacter_luteus_NIF
Aquaspirillum_sp__NIF
100/100
Candidatus_Propionivibrio_NIF
99.8/100
Dechlorobacter_hydrogenophilus_NIF
98/100
73.8/99
Dechloromonas_aromatica_NIF
Formivibrio_citricus_NIF
12.7/63
100/100
Propionivibrio_dicarboxylicus_NIF
23.7/94
Uliginosibacterium_gangwonense_NIF
97/93
Thioploca_ingrica_NIF
60.5/76
Beggiatoa_alba_NIF
91.8/97
Ferriphaselus_amnicola_NIF
100/100
Sideroxydans_lithotrophicus_NIF
Agarivorans_albus_NIF
100/100
Reinekea_marinisedimentorum_NIF
99.9/100
Shewanella_mangrovi_NIF
100/100
Vibrio_aerogenes_NIF
Brenneria_alni_NIF
100/100
Brenneria_goodwinii_NIF
Cedecea_sp__NIF
94.9/96
Dickeya_paradisiaca_NIF
99.5/99
100/100
96.9/86
Erwinia_carotovora_NIF
57.4/77
Mangrovibacter_sp__NIF
50.6/66
Rahnella_aquatilis_NIF
92/91
Serratia_sp__NIF
99.1/100
Delftia_tsuruhatensis_NIF
99.7/100
Enterobacter_aerogenes_NIF
0/49
100/100
Klebsiella_pneumoniae_NIF
100/100
Raoultella_ornithinolytica_NIF
99/100
99.2/100
Enterobacter_sp__NIF
28.3/72
Kosakonia_arachidis_NIF
51.2/94
Pantoea_sp__NIF
Tolumonas_auensis_NIF
94.1/99
100/100
Tolumonas_lignilytica_NIF
Candidatus_Contendobacter_NIF
Candidatus_Lambdaproteobacteria_NIF
Chrysiogenes_arsenatis_NIF
Arcobacter_anaerophilus_NIF
100/100
Sulfurospirillum_arcachonense_NIF
97.2/100
Sulfurovum_sp__NIF
57.1/99
100/100
Sulfurospirillum_cavolei_NIF
Candidatus_Sulfuricurvum_NIF
100/100
Sulfuricurvum_kujiense_NIF
57.2/98
Lebetimonas_sp__NIF
Acidiferrobacter_thiooxydans_NIF
Acidithiobacillus_ferrivorans_NIF
94.5/100
Halothiobacillus_sp__NIF
60.4/92
Leptospirillum_ferriphilum_NIF
92.8/93
Ferrovum_myxofaciens_NIF
73.5/92
Immundisolibacter_cernigliae_NIF
78.9/93
Sulfuricella_sp__NIF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Solimonas_aquatica_NIF
65.4/39
Derxia_gummosa_NIF
93.2/94
Burkholderia_vietnamiensis_NIF
98.4/99
Cupriavidus_taiwanensis_NIF
98.3/100
46.1/26
Curvibacter_NIF
93.9/95
Hydrogenophaga_flava_NIF
99.7/98
97.9/96
Pseudacidovorax_intermedius_NIF
98.3/94
77.6/67
100/100
84.4/85
Polaromonas_naphthalenivorans_NIF
Leptothrix_cholodnii_NIF
Methyloversatilis_discipulorum_NIF
Beijerinckia_indica_NIF
100/100
Methylocapsa_acidiphila_NIF
Azorhizobium_caulinodans_NIF
64.4/84
Xanthobacter_autotrophicus_NIF
93.8/88
98.4/99
Bradyrhizobium_japonicum_NIF
97/93
86.5/99
Nitrospirillum_amazonense_NIF
Novosphingobium_malaysiense_NIF
100/100
Sphingomonas_hengshuiensis_NIF
99.9/100
95.2/89
80.4/90
Hyphomicrobium_sp__NIF
81.6/84
98.9/95
Methylocystaceae_NIF
100/100
Methylosinus_sp__NIF
91/70
98.5/100
Methylocystis_parvus_NIF
Methylocaldum_szegediense_NIF
99.1/99
Methylococcus_capsulatus_NIF
Rhodomicrobium_udaipurense_NIF
100/100
Rhodomicrobium_vannielii_NIF
96.7/89
Rhodopseudomonas_palustris_NIF
Methylacidiphilum_fumariolicum_NIF
100/100
Verrucomicrobia_bacterium_NIF
100/100
Afifella_marina_NIF
95.6/97
Gluconacetobacter_diazotrophicus_NIF
100/100
Komagataeibacter_kakiaceti_NIF
69.5/98
Zymomonas_mobilis_NIF
99.8/100
Ensifer_sp__NIF
35/96
Mesorhizobium_amorphae_NIF
91.4/98
100/100
Microvirga_lotononidis_NIF
99.9/100
Neorhizobium_galegae_NIF
96.5/98
Methylobacterium_nodulans_NIF
Aurantimonas_sp__NIF
Confluentimicrobium_sp__NIF
100/100
98.2/100
Pseudoruegeria_marinistellae_NIF
100/100
62.8/57
Defluviimonas_alba_NIF
100/100
Rhodobacter_capsulatus_NIF
96/95
Rhodovulum_sp__NIF
Caenispirillum_salinarum_NIF
Insolitispirillum_peregrinum_NIF
85.9/52
Magnetospirillum_bellicus_NIF
41.9/76
98.6/99
31.1/30
Pararhodospirillum_photometricum_NIF
100/99
94.3/100
Phaeospirillum_fulvum_NIF
84.4/51
Rhodospirillum_rubrum_NIF
Roseospirillum_parvum_NIF
94.2/100
Anabaena_cylindrica_NIF
97.8/100
Aphanizomenon_flosaquae_NIF
97.9/100
Cylindrospermopsis_raciborskii_NIF
99.2/100
Mastigocladopsis_repens_NIF
96.1/100
72.6/98
Nostoc_sp__NIF
Mastigocoleus_testarum_NIF
98.8/100
Calothrix_sp__NIF
Chlorogloeopsis_fritschii_NIF
95.9/99
cyanobacterium_PCC_NIF
100/100
92.8/99
Fischerella_muscicola_NIF
100/100
Hapalosiphon_welwitschii_NIF
99.9/100
49/92
Scytonema_hofmannii_NIF
96.3/93
Nostoc_piscinale_NIF
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100/100
Candidatus_Atelocyanobacterium_NIF
97.8/100
99.5/100
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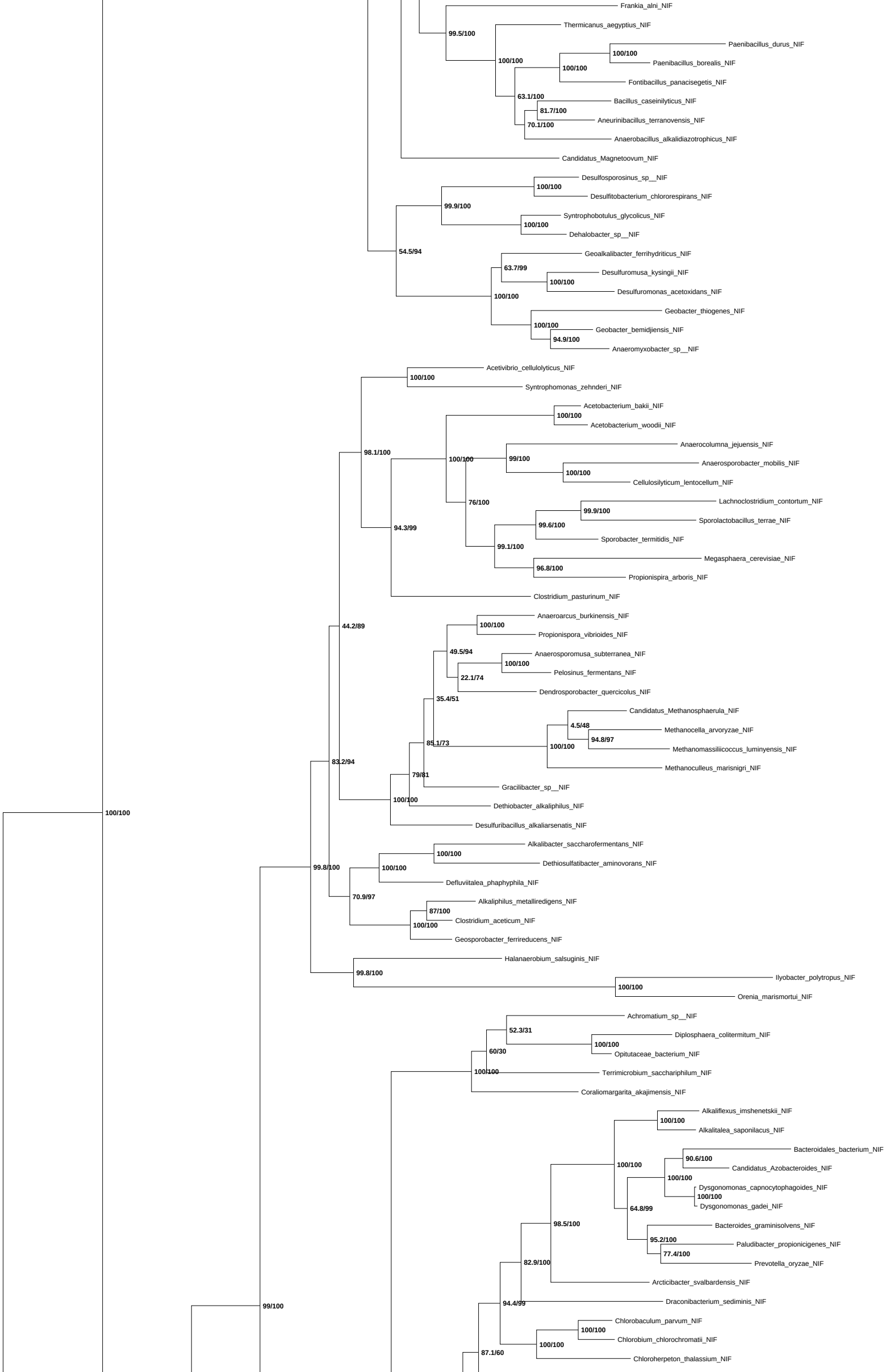
99.6/100
Crocosphaera_watsonii_NIF
100/100
Lyngbya_aestuarii_NIF
Anabaena_variabilis_NIF
Chroococcidiopsis_thermalis_NIF
99.8/100
22.3/73
Chroogloeocystis_siderophila_NIF
99.9/99
29.5/51
Microcoleus_sp__NIF
82.4/98
Leptolyngbya_boryana_NIF
99/97
Kamptonema_NIF
96.7/97
83.6/92
Neosynechococcus_sphagnicola_NIF
Desertifilum_sp__NIF
100/100
Pseudanabaena_sp__NIF
99.7/100
Myxosarcina_sp__NIF
100/100
Xenococcus_sp__NIF
100/100
Acaryochloris_sp__NIF
100/100
Synechococcus_sp__NIF
100/100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100/100
Paenibacillus_durus_NIF
100/100
Paenibacillus_borealis_NIF
100/100
Fontibacillus_panacisegetis_NIF
63.1/100
Bacillus_caseinilyticus_NIF
81.7/100
Aneurinibacillus_terranovensis_NIF
70.1/100
Anaerobacillus_alkalidiazotrophicus_NIF
Candidatus_Magnetoovum_NIF
Desulfosporosinus_sp__NIF
100/100
Desulfitobacterium_chlororespirans_NIF
99.9/100
Syntrophobotulus_glycolicus_NIF
100/100
Dehalobacter_sp__NIF
54.5/94
Geoalkalibacter_ferrihydriticus_NIF
63.7/99
Desulfuromusa_kysingii_NIF
100/100
Desulfuromonas_acetoxidans_NIF
100/100
Geobacter_thiogenes_NIF
100/100
Geobacter_bemidjiensis_NIF
94.9/100
Anaeromyxobacter_sp__NIF
Acetivibrio_cellulolyticus_NIF
100/100
Syntrophomonas_zehnderi_NIF
Acetobacterium_bakii_NIF
100/100
Acetobacterium_woodii_NIF
98.1/100
Anaerocolumna_jejuensis_NIF
100/100
99/100
Anaerosporobacter_mobilis_NIF
100/100
Cellulosilyticum_lentocellum_NIF
76/100
Lachnoclostridium_contortum_NIF
99.9/100
Sporolactobacillus_terrae_NIF
99.6/100
94.3/99
Sporobacter_termitidis_NIF
99.1/100
Megasphaera_cerevisiae_NIF
96.8/100
Propionispira_arboris_NIF
Clostridium_pasturinum_NIF
Anaeroarcus_burkinensis_NIF
44.2/89
100/100
Propionispora_vibrioides_NIF
49.5/94
Anaerosporomusa_subterranea_NIF
100/100
Pelosinus_fermentans_NIF
22.1/74
Dendrosporobacter_quercicolus_NIF
35.4/51
Candidatus_Methanosphaerula_NIF
4.5/48
Methanocella_arvoryzae_NIF
94.8/97
85.1/73
100/100
Methanomassiliicoccus_luminyensis_NIF
83.2/94
Methanoculleus_marisnigri_NIF
79/81
Gracilibacter_sp__NIF
100/100
Dethiobacter_alkaliphilus_NIF
100/100
Desulfuribacillus_alkaliarsenatis_NIF
Alkalibacter_saccharofermentans_NIF
100/100
Dethiosulfatibacter_aminovorans_NIF
99.8/100
100/100
Defluviitalea_phaphyphila_NIF
70.9/97
Alkaliphilus_metalliredigens_NIF
87/100
Clostridium_aceticum_NIF
100/100
Geosporobacter_ferrireducens_NIF
Halanaerobium_salsuginis_NIF
99.8/100
Ilyobacter_polytropus_NIF
100/100
Orenia_marismortui_NIF
Achromatium_sp__NIF
52.3/31
Diplosphaera_colitermitum_NIF
100/100
60/30
Opitutaceae_bacterium_NIF
100/100
Terrimicrobium_sacchariphilum_NIF
Coraliomargarita_akajimensis_NIF
Alkaliflexus_imshenetskii_NIF
100/100
Alkalitalea_saponilacus_NIF
Bacteroidales_bacterium_NIF
90.6/100
100/100
Candidatus_Azobacteroides_NIF
100/100
Dysgonomonas_capnocytophagoides_NIF
100/100
Dysgonomonas_gadei_NIF
64.8/99
98.5/100
Bacteroides_graminisolvens_NIF
95.2/100
Paludibacter_propionicigenes_NIF
77.4/100
82.9/100
Prevotella_oryzae_NIF
Arcticibacter_svalbardensis_NIF
99/100
94.4/99
Draconibacterium_sediminis_NIF
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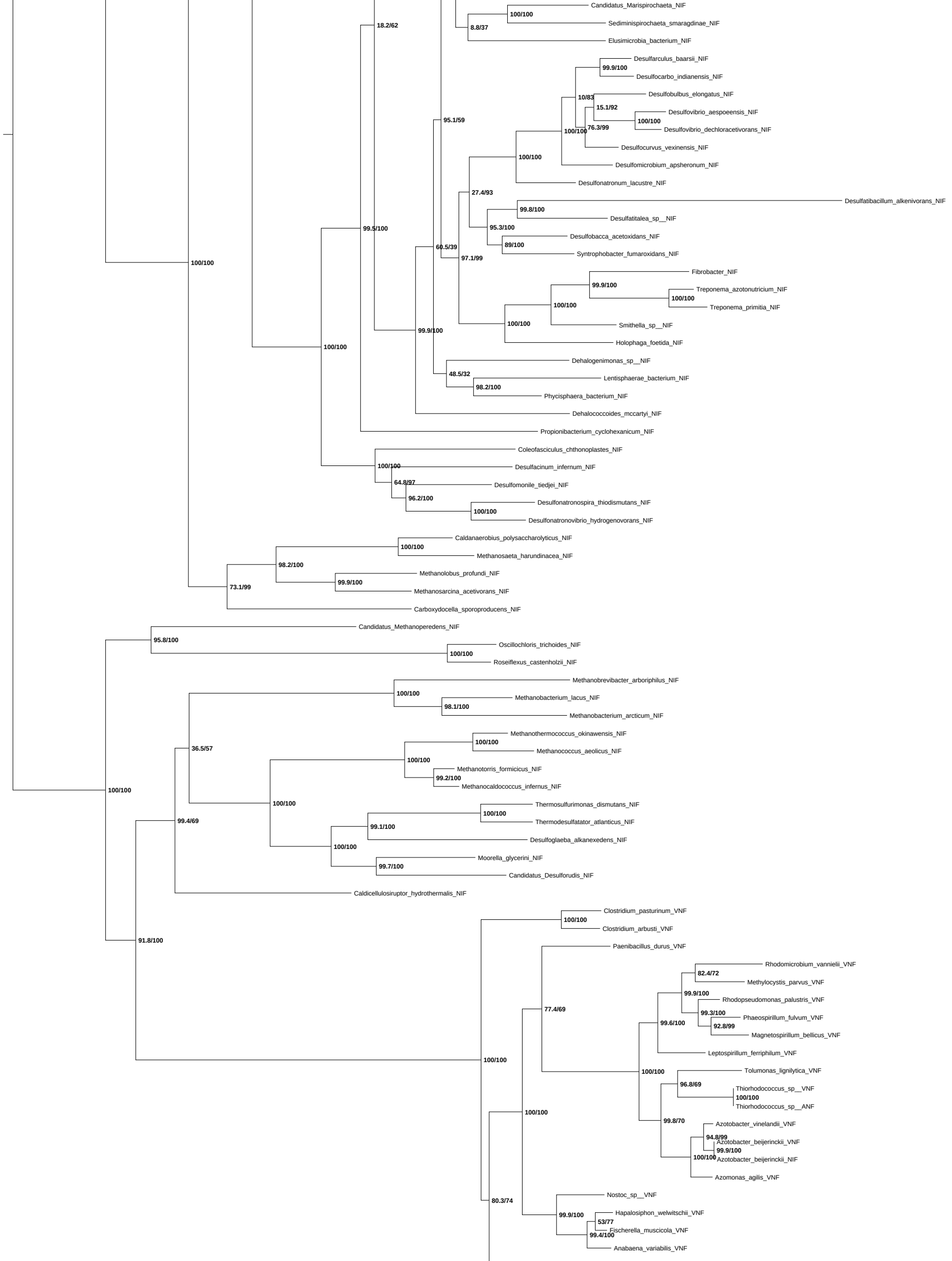
100/100
Chlorobium_chlorochromatii_NIF
100/100
87.1/60
Chloroherpeton_thalassium_NIF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Elusimicrobia_bacterium_NIF
18.2/62
Desulfarculus_baarsii_NIF
99.9/100
Desulfocarbo_indianensis_NIF
Desulfobulbus_elongatus_NIF
10/83
15.1/92
Desulfovibrio_aespoeensis_NIF
100/100
Desulfovibrio_dechloracetivorans_NIF
76.3/99
100/100
Desulfocurvus_vexinensis_NIF
95.1/59
100/100
Desulfomicrobium_apsheronum_NIF
Desulfonatronum_lacustre_NIF
27.4/93
Desulfatibacillum_alkenivorans_NIF
99.8/100
Desulfatitalea_sp__NIF
95.3/100
Desulfobacca_acetoxidans_NIF
89/100
Syntrophobacter_fumaroxidans_NIF
99.5/100
60.5/39
97.1/99
100/100
Fibrobacter_NIF
99.9/100
Treponema_azotonutricium_NIF
100/100
Treponema_primitia_NIF
100/100
Smithella_sp__NIF
99.9/100
100/100
Holophaga_foetida_NIF
Dehalogenimonas_sp__NIF
48.5/32
Lentisphaerae_bacterium_NIF
98.2/100
Phycisphaera_bacterium_NIF
Dehalococcoides_mccartyi_NIF
Propionibacterium_cyclohexanicum_NIF
Coleofasciculus_chthonoplastes_NIF
100/100
Desulfacinum_infernum_NIF
64.8/97
Desulfomonile_tiedjei_NIF
96.2/100
Desulfonatronospira_thiodismutans_NIF
100/100
Desulfonatronovibrio_hydrogenovorans_NIF
Caldanaerobius_polysaccharolyticus_NIF
100/100
Methanosaeta_harundinacea_NIF
98.2/100
Methanolobus_profundi_NIF
99.9/100
73.1/99
Methanosarcina_acetivorans_NIF
Carboxydocella_sporoproducens_NIF
Candidatus_Methanoperedens_NIF
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Oscillochloris_trichoides_NIF
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Roseiflexus_castenholzii_NIF
Methanobrevibacter_arboriphilus_NIF
100/100
Methanobacterium_lacus_NIF
98.1/100
Methanobacterium_arcticum_NIF
Methanothermococcus_okinawensis_NIF
100/100
36.5/57
Methanococcus_aeolicus_NIF
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Methanotorris_formicicus_NIF
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Methanocaldococcus_infernus_NIF
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100/100
Thermosulfurimonas_dismutans_NIF
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Thermodesulfatator_atlanticus_NIF
99.1/100
Desulfoglaeba_alkanexedens_NIF
100/100
Moorella_glycerini_NIF
99.7/100
Candidatus_Desulforudis_NIF
Caldicellulosiruptor_hydrothermalis_NIF
Clostridium_pasturinum_VNF
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Clostridium_arbusti_VNF
91.8/100
Paenibacillus_durus_VNF
Rhodomicrobium_vannielii_VNF
82.4/72
Methylocystis_parvus_VNF
99.9/100
Rhodopseudomonas_palustris_VNF
77.4/69
99.3/100
Phaeospirillum_fulvum_VNF
99.6/100
92.8/99
Magnetospirillum_bellicus_VNF
Leptospirillum_ferriphilum_VNF
100/100
100/100
Tolumonas_lignilytica_VNF
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Azomonas_agilis_VNF
Nostoc_sp__VNF
80.3/74
99.9/100
Hapalosiphon_welwitschii_VNF
53/77
Fischerella_muscicola_VNF
99.4/100
Anabaena_variabilis_VNF

Methanosarcina_acetivorans_VNF
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Sulfurospirillum_cavolei_ANF
100/100
Propionispira_arboris_ANF
99.4/100
Desulfosporosinus_sp__ANF
92/100
Methanobacterium_lacus_ANF
95.1/89
Adiutrix_intracellularis_ANF
84.8/86
Paenibacillus_borealis_ANF
99.9/100
Fontibacillus_panacisegetis_ANF
94.5/86
Pelosinus_fermentans_ANF
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Syntrophobotulus_glycolicus_ANF
66.4/99
Propionispora_vibrioides_ANF
91.8/99
Dendrosporobacter_quercicolus_ANF
98.7/95
Geobacter_thiogenes_ANF
100/98
Megasphaera_cerevisiae_ANF
98.9/100
Clostridium_akagii_ANF
90.9/64
Clostridium_pasturinum_ANF
Paludibacter_propionicigenes_ANF
97.7/73
89.5/100
Parabacteroides_sp__ANF
93.9/91
94/100
100/100
Dysgonomonas_capnocytophagoides_ANF
Bacteroidales_bacterium_ANF
Desulfovibrio_dechloracetivorans_ANF
98.5/98
Desulfobulbus_elongatus_ANF
Chloroherpeton_thalassium_ANF
91.8/78
Raoultella_ornithinolytica_ANF
76.8/100
Kosakonia_arachidis_ANF
100/100
Enterobacter_sp__ANF
0.9/56
69.5/92
30.5/82
100/100
Dickeya_paradisiaca_ANF
Mangrovibacter_sp__ANF
26.7/43
Brenneria_goodwinii_ANF
Thiorhodococcus_drewsii_ANF
89.4/68
Rhodomicrobium_vannielii_ANF
100/100
Rhodomicrobium_udaipurense_ANF
99.4/100
Rhodovulum_sp__ANF
100/100
Rhodobacter_capsulatus_ANF
5.5/64
90/70
Blastochloris_viridis_NIF
100/100
98.9/62
97.1/57
Blastochloris_viridis_ANF
Zymomonas_mobilis_ANF
53.6/56
Azotobacter_vinelandii_ANF
99.6/100
100/100
Azomonas_agilis_ANF
Rhodospirillum_rubrum_ANF
70.2/41
Phaeospirillum_fulvum_ANF
95.5/100
Pararhodospirillum_photometricum_ANF
73.7/99
Rhodopseudomonas_palustris_ANF
100/100
Afipia_sp__NIF
unclassified_Opitutaceae_ANF
100/100
Diplosphaera_colitermitum_ANF
8.2/22
Treponema_primitia_ANF
76.3/99
Desulfitobacterium_chlororespirans_ANF
95.1/99
Anaerocolumna_jejuensis_ANF
70.8/97
Acetobacterium_woodii_ANF
0.4