Eukaryota-Cryptophyta-NA-Pyrenomonadales-Geminigeraceae-Guillardia\_theta\_MMETSP0046\_c20367\_g1\_i1.p1 Eukaryota-Euglenida-NA-Eutreptiales-NA-Eutreptiella\_gymnastica\_MMETSP0039\_c102047\_g1\_i1.p1 Paulinella\_ovalis\_nuclear\_SingleCell\_\_\_SAG2\_utg7180000008718.g4337.t1 Paulinella\_ovalis\_nuclear\_SingleCell\_\_\_SAG2\_utg7180000020575.g10005.t1 Paulinella\_chromatophora\_CCAC0185\_nuclear\_\_\_scaffold15846-m96498
Paulinella\_chromatophora\_CCAC0185\_nuclear\_\_\_scaffold17951-m103930 Bacteria-Acidobacteria-Acidobacteriia-Acidobacteriales-Acidobacteriaceae-Acidipila\_sp.\_4GK13\_WP\_117298535.1 Paulinella — Bacteria-Acidobacteria-Acidobacteriia-Acidobacteriales-Acidobacteriaceae-Candidatus\_Koribacter\_versatilis\_WP\_148210135.1 Archaea — Bacteria-Acidobacteria-Acidobacteriia-Acidobacteriales-Acidobacteriaceae-Occallatibacter\_savannae\_WP\_109484715.1 Bacteria Bacteria-Acidobacteria-Acidobacteriia-Acidobacteriales-Acidobacteriaceae-Acidobacteriaceae bacterium KBS 83 WP 020709084.1 —— Bacteria-Chloroflexi-Ktedonobacteria-Ktedonobacterales-Thermosporotrichaceae-Thermosporothrix\_hazakensis\_WP\_111325346.1 Eukaryota Bacteria-Chloroflexi-Ktedonobacteria-Thermogemmatisporales-Thermogemmatisporaceae-Thermogemmatispora\_onikobensis\_WP\_069805811.1 Viruses Bacteria-Proteobacteria-Deltaproteobacteria-Myxococcales-NA-Enhygromyxa\_salina\_WP\_052547406.1 — Bacteria-Abditibacteriota-Abditibacteria-Abditibacteriales-Abitibacteriaceae-Abditibacterium\_utsteinense\_WP\_106381310.1 Eukaryota-Chlorophyta-NA-NA-NA-Chlamydomonascf\_sp\_MMETSP1180\_c9188\_g1\_i1.p1 Bacteria-Armatimonadetes-Armatimonadia-Capsulimonadales-Capsulimonadaceae-Capsulimonas\_corticalis\_WP\_119319693.1 —— Bacteria-Chloroflexi-Anaerolineae-Anaerolineales-Anaerolineaceae-Anaerolinea\_thermophila\_WP\_013560229.1 Bacteria-Actinobacteria-Actinobacteria-Actinomycetales-Actinomycetaceae-Actinomyces\_marimammalium\_WP\_075361721.1 ———— Bacteria-NA-NA-NA-NA\_WP\_040318362.1 —— Bacteria-Actinobacteria-Actinobacteria-Actinomycetales-Actinomycetaceae-Flaviflexus\_massiliensis\_WP\_054952610.1 Bacteria-Actinobacteria-Actinobacteria-Micrococcales-Microbacteriaceae-Frondihabitans\_sp.\_762G35\_WP\_119867386.1 Eukaryota-Arthropoda-Insecta-Diptera-Culicidae-Aedes\_albopictus\_XP\_029720812.1 Bacteria-Proteobacteria-Alphaproteobacteria-Rhizobiales-Phyllobacteriaceae-Mesorhizobium\_sp.\_F7\_WP\_047560801.1 Bacteria-Proteobacteria-Alphaproteobacteria-Rhodospirillales-Rhodospirillaceae-Rhodospirillaceae\_bacterium\_SYSU\_D60006\_WP\_119284816.1 Bacteria-Proteobacteria-Betaproteobacteria-Burkholderiales-Burkholderiaceae-Burkholderia\_multivorans\_WP\_111459287.1 Bacteria-Actinobacteria-Actinobacteria-Micrococcales-Microbacteriaceae-Curtobacterium\_sp.\_S6\_WP\_030013729.1 100 Bacteria-Actinobacteria-Actinobacteria-Micrococcales-Micrococcaceae-NA\_WP\_129360426.1 Chromatophore (≥100aa) Bacteria-Actinobacteria-Actinobacteria-Micrococcales-Micrococcaceae-Kocuria\_halotolerans\_WP\_129660307.1 Chromatophore (<100aa)</p> Bacteria-Actinobacteria-Actinobacteria-Micrococcales-NA-NA\_WP\_006213604.1 Eukaryota-Arthropoda-Insecta-Hymenoptera-Formicidae-Cyphomyrmex costatus XP 018401608.1 ————— Bacteria-Actinobacteria-Actinobacteria-Micrococcales-Dermabacteraceae-Brachybacterium\_muris\_WP\_042342829.1 ─ Bacteria-Actinobacteria-Actinobacteria-Micrococcales-Dermabacteraceae-Dermabacter\_hominis\_WP\_101686813.1 Telagoreria-Actinobacteria-Actinobacteria-Micrococcales-Dermabacteraceae-Helcobacillus\_massiliensis\_WP\_055089755.1 Bacteria-Actinobacteria-Actinobacteria-Micrococcales-Dermabacteraceae-NA\_WP\_065248718.1 Bacteria-Chloroflexi-Chloroflexia-Chloroflexales-Chloroflexaceae-Chloroflexus aggregans WP 015941388.1 Bacteria-Chloroflexi-Chloroflexia-Chloroflexales-NA-Chloroflexales\_bacterium\_ZM163\_WP\_129686165.1 Bacteria-Chloroflexi-Chloroflexia-Chloroflexales-Oscillochloridaceae-Candidatus Oscillochloris fontis WP 129632437. ——— Bacteria-Chloroflexi-Chloroflexia-Chloroflexales-Oscillochloridaceae-Candidatus\_Chloroploca\_asiatica\_WP\_097654928.1 — Bacteria-NA-NA-NA-NA-bacterium\_1xD4267\_WP\_120395552.1 ukaryota-Amoebozoa-NA-NA-Paramoebidae-Mayorella\_sp\_MMETSP0417\_c13180\_g1\_i1.p1 — \$\int\_{00}\$ 100 Eukaryota-Amoebozoa-NA-NA-Paramoebidae-Stygamoeba\_regulata\_MMETSP0447\_c37368\_g1\_i1.p1 Eukaryota-Amoebozoa-NA-NA-Paramoebidae-Neoparamoeba\_aestuarina\_MMETSP0161\_c22481\_g1\_i1.p1 ——————— Eukaryota-Amoebozoa-NA-NA-Paramoebidae-Paramoeba atlantica MMETSP0151 c37611 g1 i1.p1 Eukaryota-Amoebozoa-NA-NA-Paramoebidae-Vexillifera\_sp\_MMETSP0173\_c4719\_g1\_i1.p1 Eukaryota-Amoebozoa-NA-NA-Paramoebidae-Stygamoeba\_regulata\_MMETSP0447\_c74\_g1\_i1.p1 Eukaryota-Glaucophyta-Glaucophyta-Gloeochaetales-Gloeochaetaceae-Gloeochaete\_wittrockiana\_MMETSP1089\_c7851\_g1\_i1.p1 Eukaryota-Ciliophora-NA-Unranked-NA-Tiarina\_fusus\_MMETSP0472\_c65154\_g1\_i1.p1 Eukaryota-Ciliophora-NA-Unranked-NA-Myrionecta\_rubra\_MMETSP0798\_c28858\_g1\_i1.p1 Eukaryota-Cryptophyta-NA-Pyrenomonadales-NA-Geminigera\_cryophila\_MMETSP0799\_c9812\_g1\_i2.p1 Eukaryota-Cryptophyta-NA-Cryptomonadales-Cryptomonadaceae-Cryptomonas\_paramecium\_MMETSP0038\_c15129\_g1\_i1.p2 —— Eukaryota-Cryptophyta-NA-Pyrenomonadales-Pyrenomonadaceae-Rhodomonas\_sp\_MMETSP1091\_c10400\_g1\_i1.p1 Eukaryota-Cryptophyta-NA-Cryptomonadales-Hemiselmidaceae-Hemiselmis\_andersenii\_MMETSP0043\_c15104\_g1\_i1.p1 Eukaryota-Cryptophyta-NA-Cryptomonadales-Hemiselmidaceae-Hemiselmis rufescens MMETSP1357 c11903 g1 i1.p1 Eukaryota-Cryptophyta-NA-Goniomondales-NA-Goniomonas sp MMETSP0114 c3340 g1 i1.p1 - Eukaryota-Cryptophyta-NA-Goniomondales-NA-Goniomonas pacifica MMETSP0107 c3529 g1 i1.p1 Eukaryota-Euglenida-NA-NA-Unranked-Neobodo\_designis\_MMETSP1114\_c17480\_g1\_i1.p1 Eukaryota-Kinetoplastida-Kinetoplastida-Kinetoplastida-Trypanosomatidae-Leishmania\_mexicana\_XP\_003875331.1 Eukaryota-Kinetoplastida-Kinetoplastida-Kinetoplastida-Trypanosomatidae-Trypanosoma\_cruzi\_XP\_813396.1 —— Bacteria-Bacteroidetes-Bacteroidia-Bacteroidales-Bacteroidaceae-Anaerorhabdus\_furcosa\_WP\_078711613.1 Bacteria-Firmicutes-Erysipelotrichia-Erysipelotrichales-Erysipelotrichaceae-Erysipelotrichaceae\_bacterium\_MTC7\_WP\_067422554.1 — Bacteria-Firmicutes-Erysipelotrichia-Erysipelotrichales-Erysipelotrichaceae-Faecalitalea\_cylindroides\_WP\_035401697.1 —— Bacteria-NA-NA-Haloplasmatales-Haloplasmataceae-Inordinaticella\_fortuita\_WP\_119569249.1 ———— Bacteria-Tenericutes-Mollicutes-Acholeplasmatales-Acholeplasmataceae-Acholeplasma\_hippikon\_WP\_035368241.1 —— Bacteria-Tenericutes-NA-NA-NA-Tenericutes\_bacterium\_MOXQ\_WP\_106720058.1 — Bacteria-Firmicutes-Bacilli-Lactobacillales-Aerococcaceae-Dolosicoccus\_paucivorans\_WP\_092085705.1 Bacteria-Bacteroidetes-Flavobacteriia-Flavobacteriales-Flavobacteriaceae-Muricauda\_sp.\_MT229\_WP\_144841535.1 Bacteria-Firmicutes-Bacilli-Lactobacillales-Enterococcaceae-Enterococcus\_rivorum\_WP\_069697315.1 Bacteria-Firmicutes-Bacilli-NA-NA-NA WP 002356260.1 Bacteria-CandidatusSaccharibacteria-NA-NA-NA-Candidatus\_Saccharibacteria\_bacterium\_WP\_129632457.1 Bacteria-CandidatusSaccharibacteria-NA-NA-NA-NA\_WP\_039327039.1 ——— Bacteria-CandidatusSaccharibacteria-NA-NA-NA-TM7\_phylum\_sp.\_oral\_taxon\_488\_WP\_138076433.1 ———— Bacteria-NA-NA-NA-NA-bacterium\_BCRC\_81129\_WP\_135368399.1 Eukaryota-Arthropoda-Insecta-Hymenoptera-Apidae-Apis\_florea\_XP\_003691695.1 Bacteria-Firmicutes-Bacilli-Lactobacillales-Aerococcaceae-Aerococcus\_sp.\_1KP2016\_WP\_094517772.1 Bacteria-Firmicutes-Bacilli-Lactobacillales-NA-NA\_WP\_069285397.1 Bacteria-Proteobacteria-Alphaproteobacteria-Rhizobiales-Phyllobacteriaceae-Mesorhizobium\_sp.\_B2.3\_WP\_126700175.1 - 100 Bacteria-Proteobacteria-Alphaproteobacteria-Rhizobiales-Phyllobacteriaceae-Nitratireductor\_pacificus\_WP\_008598112.1 Eukaryota-Alveolata-Dinophyceae-NA-Unranked-Dinophysis\_acuminata\_MMETSP0797\_c5464\_g1\_i1.p2 Eukaryota-Alveolata-Dinophyceae-NA-Unranked-Karlodinium\_micrum\_MMETSP1015\_c6396\_g1\_i1.p1 L<u>Euk</u>aryota-Haptophyta-NA-Isochrysidales-Noelaerhabdaceae-Emiliania\_huxleyi\_jgi428604 Eukaryota-Haptophyta-NA-Isochrysidales-Noelaerhabdaceae-Emiliania\_huxleyi\_MMETSP1154\_c43306\_g1\_i1.p1 ———— Eukaryota-Stramenopiles-Pelagophyceae-Pelagomonadales-NA-Aureococcus\_anophagefferens\_jgi25241 Eukaryota-Euglenida-NA-Eutreptiales-NA-Eutreptiella\_gymnastica-like\_MMETSP0811\_c3183\_g1\_i1.p2 Eukaryota-Alveolata-Dinophyceae-NA-Unranked-Alexandrium\_tamarense\_MMETSP0384\_c137241\_g1\_i1.p1 ———— Eukaryota-Alveolata-Dinophyceae-NA-Unranked-Pyrodinium\_bahamense\_MMETSP0796\_c81453\_g1\_i1.p1 Eukaryota-Ciliophora-NA-Unranked-NA-Blepharisma\_japonicum\_MMETSP1395\_c20152\_g1\_i1.p1 ——————— Eukaryota-Ciliophora-NA-Unranked-NA-Euplotes focardii MMETSP0206 TR14924-c0 g1 i1.p1 Eukaryota-Haptophyta-NA-Prymnesiales-NA-Coccolithus\_pelagicussspbraarudi\_MMETSP0164\_c30179\_g1\_i1.p1 MSTRG.15480.1.p1 Paulinella\_chromatophora\_CCAC0185\_nuclear\_\_\_scaffold7547-m60233 Paulinella\_chromatophora\_CCAC0185\_nuclear\_\_\_scaffold1705-m21561 ----- MSTRG.17958.1.p1 Eukaryota-Cercozoa-Chlorarachniophyceae-NA-NA-Bigelowiella\_natans\_MMETSP1054\_c21650\_g1\_i1.p1 Eukaryota-Cercozoa-Chlorarachniophyceae-NA-NA-Lotharella\_globosa\_MMETSP0041\_c19569\_g1\_i1.p1 Eukaryota-Cercozoa-Chlorarachniophyceae-NA-NA-Lotharella\_oceanica\_MMETSP0040\_c825\_g1\_i1.p1 — 1<del>00</del> — Eukaryota-Cercozoa-Chlorarachniophyceae-NA-NA-Chlorarachnion\_reptans\_MMETSP0109\_c18058\_g1\_i1.p1 Eukaryota-Cercozoa-Chlorarachniophyceae-NA-NA-Gymnochlora sp MMETSP0110 c16041 g1 i1.p1 Eukaryota-Stramenopiles-Labyrinthista-NA-NA-Aplanochytrium\_sp\_MMETSP0954\_c6855\_g1\_i1.p1 Eukaryota-Stramenopiles-Labyrinthista-NA-NA-Aurantiochytrium\_limacinum\_MMETSP0958\_TR10999-c0\_g1\_i1.p1 Eukaryota-Stramenopiles-Labyrinthista-NA-NA-Schizochytrium aggregatum MMETSP0965 c5104 g1 i2.p1 Eukaryota-Stramenopiles-Labyrinthista-NA-NA-Thraustochytrium\_sp\_MMETSP0198\_c1853\_g1\_i1.p1 Eukaryota-Retaria-NA-NA-NA-Ammonia sp MMETSP1384 c16813 g1 i1.p1 Eukaryota-Retaria-NA-NA-NA-Elphidium\_margaritaceum\_MMETSP1385\_c15378\_g1\_i1.p1 —— 95 Eukaryota-Retaria-NA-NA-Rosalina\_sp\_MMETSP0190\_c3707\_g1\_i1.p1 Eukaryota-Streptophyta-Liliopsida-Poales-Poaceae-Brachypodium\_distachyon\_XP\_003568800.3 48 Eukaryota-Streptophyta-NA-Malpighiales-Euphorbiaceae-Ricinus\_communis\_XP\_002527093.1 Eukaryota-Streptophyta-NA-Malpighiales-Salicaceae-Populus\_euphratica\_XP\_011044833.1 Eukaryota-Streptophyta-NA-Malpighiales-Salicaceae-Populus\_trichocarpa\_XP\_002307524.3 61 Luman Eukaryota-Streptophyta-NA-Rosales-Cannabaceae-Cannabis\_sativa\_XP\_030496707.1 Eukaryota-Streptophyta-NA-Caryophyllales-Chenopodiaceae-Chenopodium\_quinoa\_XP\_021737652.1 — 100 — L31 — Eukaryota-Streptophyta-NA-Fabales-Fabaceae-Glycine max XP 003536401.2 a-Streptophyta-NA-Solanales-Solanaceae-Solanum lycopersicum XP 004253262.1 a-Streptophyta-NA-Solanales-Solanaceae-Solanum\_pennellii\_XP\_015072047.1 nydomonadaceae-Chlamydomonas\_chlamydogama\_MMETSP1392\_c27083\_g1\_i1.p1 - Eukaryota-Chlorophyta-NA-NA-NA-Chlamydomonascf sp MMETSP1180 c10341 g1 i1.p1 Eukaryota-Chlorophyta-NA-NA-NA-Crustomastix stigmata MMETSP0803\_c6919\_g1\_i1.p2 —— Eukaryota-Rhodophyta-Bangiophyceae-Bangiales-Bangiaceae-Porphyra\_umbilicalis\_Poumb2535s0001.1 ukaryota-Chlorophyta-NA-Pyramimonadales-NA-Pyramimonas\_amylifera\_MMETSP1081\_c27466\_g1\_i1.p1 — Eukaryota-Alveolata-Dinophyceae-NA-Unranked-Alexandrium\_tamarense\_MMETSP0384\_c149204\_g1\_i1.p1 Eukaryota-Alveolata-Dinophyceae-NA-Unranked-Glenodinium foliaceum MMETSP0119 c16213 g1 i1.p1 — Eukaryota-Alveolata-Dinophyceae-NA-Unranked-Noctiluca\_scintillans\_MMETSP0253\_c41493\_g1\_i1.p1 Eukaryota-Apicomplexa-NA-Unranked-NA-Alveolata\_sp\_MMETSP0288\_c18211\_g1\_i1.p1 

Eukaryota-Chromeraceae-NA-NA-NA-Vitrella\_brassicaformis\_MMETSP1451\_c23085\_g1\_i1.p1 Eukaryota-Alveolata-Dinophyceae-NA-Unranked-Amphidinium\_carterae\_MMETSP0259\_c25540\_g1\_i1.p1 ———— Eukaryota-Alveolata-Dinophyceae-NA-Unranked-Symbiodinium\_sp\_MMETSP1122\_c35987\_g1\_i1.p2 Eukaryota-Ciliophora-NA-Unranked-NA-Mesodinium\_pulex\_MMETSP0467\_c30808\_g1\_i1.p2 Eukaryota-Ciliophora-NA-Unranked-NA-Strombidinopsis acuminatum MMETSP0126 c14085 q1 i1.p2 ——————————————————————Eukaryota-Palpitomonas-NA-NA-NA-Palpitomonas\_bilix\_MMETSP0780\_c10112\_g1\_i2.p1 — Bacteria-Firmicutes-Clostridia-Clostridiales-Peptostreptococcaceae-NA\_WP\_018589158.1 Bacteria-Proteobacteria-Betaproteobacteria-Burkholderiales-Burkholderiaceae-Hydromonas sp. F02 WP\_114563333.1 — Bacteria-Firmicutes-Clostridia-Clostridiales-Ruminococcaceae-Caproiciproducens\_galactitolivorans\_WP\_135657024.1 Eukaryota-Amoebozoa-NA-NA-Paramoebidae-Trichosphaerium\_sp\_MMETSP0405\_c4655\_g1\_i1.p1 ——— Bacteria-Aquificae-Aquificae-Aquificales-Aquificaceae-Hydrogenobacter\_hydrogenophilus\_WP\_096603452.1 - Bacteria-Caldiserica-Caldisericia-Caldisericales-Caldisericaceae-Caldisericum\_exile\_WP\_014453393.1 Bacteria-Coprothermobacterota-Coprothermobacteria-Coprothermobacterales-Coprothermobacteraceae-Coprothermobacter\_platensis\_WP\_018963214.1 ——— Bacteria-Coprothermobacterota-Coprothermobacteria-Coprothermobacterales-Coprothermobacteraceae-Coprothermobacter\_proteolyticus\_WP\_107690196.1 Bacteria-Actinobacteria-Actinobacteria-Actinomycetales-Actinomycetaceae-Varibaculum timonense WP 080912523.1 Eukaryota-Trichomonadida-Trichomonadida-Trichomonadida-Trichomonadida-Trichomonadidae-Trichomonadidae-Trichomonas vaginalis XP 001307954.1 ——— Bacteria-Firmicutes-Clostridia-Clostridiales-Christensenellaceae-Christensenella\_massiliensis\_WP\_079546708.1 Bacteria-Synergistetes-Synergistia-Synergistales-Synergistaceae-Aminobacterium\_colombiense\_WP\_013048177.1 Bacteria-Fusobacteria-Fusobacteriia-Fusobacteriales-Fusobacteriaceae-Fusobacterium\_equinum\_WP\_060793758.1 Bacteria-Fusobacteria-Fusobacteriia-Fusobacteriales-Fusobacteriaceae-Fusobacterium\_necrophorum\_WP\_129491303.1 Bacteria-Fusobacteria-Fusobacteriia-Fusobacteriales-Fusobacteriaceae-Fusobacterium\_varium\_WP\_096402407.1 Bacteria-Fusobacteria-Fusobacteriia-Fusobacteriales-Fusobacteriaceae-NA\_WP\_005951554.1 ——— Bacteria-Fusobacteria-Fusobacteriia-Fusobacteriales-Leptotrichiaceae-Leptotrichia\_massiliensis\_WP\_071124900.1 —— Bacteria-Fusobacteria-Fusobacteriia-Fusobacteriales-Leptotrichiaceae-Sneathia sanguinegens WP 066729911.1 ——— Bacteria-Fusobacteria-Fusobacteriia-Fusobacteriales-Leptotrichiaceae-Leptotrichia\_sp.\_OH3620\_COT345\_WP\_125237101.1 Bacteria-Fusobacteria-Fusobacteriia-Fusobacteriales-Leptotrichiaceae-Sebaldella\_termitidis\_WP\_012861596.1 Eukaryota-Nematoda-Chromadorea-Rhabditida-Rhabditidae-Caenorhabditis remanei XP 003087028.1 Eukaryota-Heterolobosea-NA-NA-Vahlkampfiidae-Naegleria\_gruberi\_jgi80810 —— Bacteria-Firmicutes-Negativicutes-Veillonellales-Veillonellaceae-Dialister\_sp.\_MarseilleP5638\_WP\_022383016.1 — Bacteria-Firmicutes-Clostridia-Thermoanaerobacterales-Thermoanaerobacteraceae-Carboxydothermus\_hydrogenoformans\_WP\_011343989.1 — Bacteria-NA-NA-NA-NA-Thermobaculum\_terrenum\_WP\_012873991.1 Bacteria-CandidatusMarinimicrobia-NA-NA-NA-Candidatus Marinimicrobia bacterium WP 129510991.1 Bacteria-Proteobacteria-Oligoflexia-Bacteriovoracales-Bacteriovoracaceae-Bacteriovorax sp. BSW11 IV WP 021271548.1 Eukaryota-Ciliophora-Oligohymenophorea-Hymenostomatida-Tetrahymenidae-Tetrahymena\_thermophila\_XP\_001470981.1 — Bacteria-Proteobacteria-Deltaproteobacteria-Desulfobacterales-Desulfobulbaceae-Desulfobulbus\_mediterraneus\_WP\_028585933.1 Eukaryota-Rhodophyta-Bangiophyceae-NA-NA-Rhodosorus\_marinus\_MMETSP0011\_c2800\_g1\_i1.p2 Rhodophyta-Bangiophyceae-NA-NA-Rhodosorus\_marinus\_MMETSP0315 c3014 g1 i1.p1 Eukaryota-Rhodophyta-Florideophyceae-Gigartinales-Gigartinaceae-Chondrus crispus XP 005715825.1 Eukaryota-Rhodophyta-Bangiophyceae-Porphyridiales-Porphyridiaceae-Porphyridium\_purpureum\_527.4 ——— Eukaryota-Chlorophyta-NA-NA-NA-Tetraselmis\_astigmatica\_MMETSP0804\_c2842\_g1\_i1.p1 —— Archaea-Euryarchaeota-Halobacteria-Halobacteriales-Halobacteriaceae-Haloarchaeobius\_iranensis\_WP\_089735733.1 -— 100 Archaea-NA-NA-NA-NA-archaeon\_AArcSI\_WP\_119821046.1 Eukaryota-Apicomplexa-Conoidasida-Eucoccidiorida-Eimeriidae-Eimeria necatrix XP 013432759.1 Eukaryota-Apicomplexa-Conoidasida-Eucoccidiorida-Sarcocystidae-Besnoitia besnoiti XP 029218432.1 Eukaryota-Apicomplexa-Conoidasida-Eucoccidiorida-Sarcocystidae-Neospora caninum XP 003884067.1 Eukaryota-Perkinsozoa-NA-Perkinsida-Perkinsidae-Perkinsus\_marinus\_XP\_002780416.1 Eukaryota-Chromeraceae-NA-NA-NA-Chromera velia MMETSP0290 c1594 g1 i1.p1 Eukaryota-Nematoda-Chromadorea-Rhabditida-Strongyloididae-Strongyloides\_ratti\_XP\_024503902.1 Eukaryota-Nematoda-Chromadorea-Strongylida-Ancylostomatidae-Necator americanus XP 013301148.1 ——— Eukaryota-Apusomonadidae-NA-NA-NA-Thecamonas trahens XP 013761677.1 Eukaryota-Brachiopoda-Lingulata-Lingulida-Lingulidae-Lingula\_anatina\_XP\_013410329.1 Eukaryota-Porifera-Demospongiae-Haplosclerida-Niphatidae-Amphimedon queenslandica jgiAqu1227531 Eukaryota-Chordata-Actinopteri-Beloniformes-Adrianichthyidae-Oryzias\_melastigma\_XP\_024139611.1 Eukaryota-Chordata-Actinopteri-Semionotiformes-Lepisosteidae-Lepisosteus oculatus XP 006633050.2 8 Eukaryota-Chordata-Actinopteri-Clupeiformes-Denticipitidae-Denticeps\_clupeoides\_XP\_028815365.1 —— 100 Eukaryota-Chordata-Aves-Passeriformes-Tyrannidae-Empidonax\_traillii\_XP\_027751637.1 81 Eukaryota-Chordata-Mammalia-Rodentia-Cricetidae-Microtus ochrogaster XP 005358519.1 Eukaryota-Priapulida-Priapulimorpha-Priapulimorphida-Priapulidae-Priapulus\_caudatus\_XP\_014676675.1 Eukaryota-Cnidaria-Anthozoa-Actiniaria-Edwardsiidae-Nematostella vectensis XP 001625038.1 Eukaryota-Cnidaria-Anthozoa-Scleractinia-Acroporidae-Acropora millepora XP 029207842.1 Eukaryota-Cnidaria-Anthozoa-Scleractinia-Merulinidae-Orbicella\_faveolata\_XP\_020611549.1 Eukaryota-Echinodermata-Asteroidea-Valvatida-Acanthasteridae-Acanthaster planci XP 022080007.1 Eukaryota-Echinodermata-Echinoidea-Echinoida-Strongylocentrotidae-Strongylocentrotus purpuratus XP 011684206.1 Eukaryota-Hemichordata-Enteropneusta-NA-Harrimaniidae-Saccoglossus kowalevskii XP 006814065.1 —————————————————————Eukaryota-Cnidaria-Hydrozoa-Anthoathecata-Hydridae-Hydra\_vulgaris\_XP\_002170830.2 Eukaryota-Mollusca-Bivalvia-Pectinoida-Pectinidae-Mizuhopecten yessoensis XP 021363882.1 ▲Eukaryota-Mollusca-Gastropoda-Architaenioglossa-Ampullariidae-Pomacea\_canaliculata\_XP\_025094266.1 Eukaryota-Mollusca-Gastropoda-Architaenioglossa-Ampullariidae-Pomacea\_canaliculata\_XP\_025094267.1 Eukaryota-Mollusca-Gastropoda-NA-Planorbidae-Biomphalaria glabrata XP 013073815.1 Eukaryota-Mollusca-Gastropoda-NA-Planorbidae-Biomphalaria\_glabrata\_XP\_013073817.1 Eukaryota-Mollusca-Gastropoda-NA-Lottiidae-Lottia\_gigantea\_jgi225737 ——— Eukaryota-Choanoflagellata-Choanoflagellata-Choanoflagellata-Salpingoecidae-Monosiga\_brevicollis\_XP\_001745597.1 — Eukaryota-Choanoflagellata-Choanoflagellata-Choanoflagellata-Salpingoecidae-Salpingoeca\_rosetta\_XP\_004990017.1 Eukaryota-Chytridiomycota-Chytridiomycetes-Rhizophydiales-NA-Batrachochytrium\_dendrobatidis\_jgi91122

Eukaryota-Chytridiomycota-Chytridiomycetes-Spizellomycetales-Spizellomycetaceae-Spizellomyces\_punctatus\_XP\_016607965.1 <u>Eukaryota-Mucorales-Mucoraceae-Undefined-Undefined-Mucor\_circinelloides\_igi81243</u> Eukaryota-Mucoromycota-Mucoromycetes-Mucorales-Rhizopodaceae-Rhizopus microsporus XP 023465546.1 Eukaryota-Mucoromycota-Mucoromycetes-Mucorales-Phycomycetaceae-Phycomyces blakesleeanus jgi76652 — Eukarvota-Mucoromycota-Mortierellomycetes-Mortierellales-Mortierellaceae-Lobosporangium\_transversale\_XP\_021882837.1 Eukaryota-Glaucophyta-Glaucophyta-NA-Cyanophoraceae-Cyanophora\_paradoxa\_tig00000889\_g5293.t1 Eukaryota-Mesomycetozoea-Ichthyosporea-Ichthyophonida-NA-Sphaeroforma arctica XP 014150316.1 Eukaryota-Mesomycetozoea-Ichthyosporea-NA-NA-Capsaspora\_owczarzaki\_XP\_004344302.2 Eukaryota-Platyhelminthes-Cestoda-Cyclophyllidea-Taeniidae-Echinococcus\_granulosus\_XP\_024350349.1 Eukaryota-Platyhelminthes-Trematoda-Opisthorchiida-Opisthorchiidae-Opisthorchis viverrini XP 009177093.1 Eukaryota-Platyhelminthes-Trematoda-Strigeidida-Schistosomatidae-Schistosoma\_mansoni\_XP\_018645692.1 Eukaryota-Platyhelminthes-Trematoda-Opisthorchiida-Opisthorchiidae-Opisthorchis\_viverrini\_XP\_009177198.1 Eukaryota-Fonticulida-Fonticulida-Fonticulida-Fonticulaceae-Fonticula\_alba\_XP\_009492577.1 - Archaea-Euryarchaeota-Archaeoglobi-Archaeoglobales-Archaeoglobaceae-Archaeoglobus\_veneficus\_WP\_013683771.1 — Archaea-Euryarchaeota-Methanonatronarchaeia-Methanonatronarchaeales-Methanonatronarchaeaceae-Methanonatronarchaeum\_thermophilum\_WP\_086637782.1