——— Eukaryota-Alveolata-Dinophyceae-NA-Unranked-Alexandrium\_monilatum\_MMETSP0097\_c91149\_g1\_i1.p1 Eukaryota-Alveolata-Dinophyceae-NA-Unranked-Brandtodinium\_nutriculum\_MMETSP1462\_c10919\_g1\_i1.p1 ukaryota-Alveolata-Dinophyceae-NA-Unranked-Dinophysis\_acuminata\_MMETSP0797\_c7796\_g1\_i1.p1 — Eukaryota-Alveolata-Dinophyceae-Peridiniales-Kryptoperidiniaceae-Durinskia\_baltica\_MMETSP0116\_c9195\_g1\_i1.p1 - Eukaryota-Alveolata-Dinophyceae-NA-Unranked-Togula\_jolla\_MMETSP0224\_c39897\_g1\_i1.p1 Eukaryota-Palpitomonas-NA-NA-NA-Palpitomonas\_bilix\_MMETSP0780\_c12382\_g1\_i1.p1 ukaryota-Cryptophyta-NA-Goniomondales-NA-Goniomonas\_sp\_MMETSP0114\_c22035\_g1\_i1.p1 Archaea Eukaryota-Chlorophyta-NA-Pyramimonadales-NA-Pyramimonas\_parkeae\_MMETSP0058\_c1717\_g1\_i1.p1 Bacteria aryota-Stramenopiles-Bacillariophyceae-Bacillariales-Bacillariaceae-Cylindrotheca\_closterium\_MMETSP0017\_c10998\_g2\_i1.p1 aryota-Amoebozoa-NA-NA-Paramoebidae-Stygamoeba\_regulata\_MMETSP0447\_c6848\_g1\_i1.p1 Eukaryota-Mollusca-Gastropoda-NA-Lottiidae-Lottia\_gigantea\_jgi138753 karyota-Echinodermata-Echinoidea-Echinoida-Strongylocentrotidae-Strongylocentrotus\_purpuratus\_NP\_001091918.1 —— Eukaryota-Nematoda-Chromadorea-Rhabditida-Strongyloididae-Strongyloides\_ratti\_XP\_024504037.1 Eukaryota-Chordata-Mammalia-Cetacea-Delphinidae-Lagenorhynchus\_obliquidens\_XP\_026962349.1 Actiniaria-Aiptasiidae-Exaiptasia pallida XP 020917337.1 Eukaryota-Ciliophora-NA-Unranked-NA-Euplotes\_crassus\_MMETSP1380\_c5462\_g1\_i1.p1 — Eukaryota-Ciliophora-NA-Unranked-NA-Litonotus\_pictus\_MMETSP0209\_c2184\_g1\_i1.p1 ligohymenophorea-Hymenostomatida-Tetrahymenidae-Tetrahymena\_thermophila\_XP\_001019765.3 Eukaryota-Haptophyta-NA-Pavlovales-Pavlovaceae-Pavlova\_sp\_MMETSP1140\_c23937\_g1\_i1.p1 a-Haptophyta-NA-Prymnesiales-NA-Pleurochrysis\_carterae\_MMETSP1136\_c470\_g1\_i1.p1 ukaryota-Apicomplexa-NA-Unranked-NA-Alveolata\_sp\_MMETSP0288\_c24762\_g1\_i1.p1 a-Chromeraceae-NA-NA-NA-Vitrella\_brassicaformis\_MMETSP1451\_c267\_g1\_i1.p1 aryota-Palpitomonas-NA-NA-NA-Palpitomonas\_bilix\_MMETSP0780\_c15000\_g2\_i2.p1 ukaryota-Haptophyta-NA-Pavlovales-Pavlovaceae-Pavlova\_sp\_MMETSP1139\_c7294\_g1\_i1.p1 Ichthyosporea-Ichthyophonida-NA-Sphaeroforma arctica XP 014151570.1 ukaryota-Stramenopiles-Labyrinthista-NA-NA-Aplanochytrium\_sp\_MMETSP0954\_c4913\_g1\_i1.p1 Eukaryota-Stramenopiles-Labyrinthista-NA-NA-Aurantiochytrium\_limacinum\_MMETSP0958\_TR6004-c0\_g2\_i1.p1 ukaryota-Stramenopiles-Labyrinthista-NA-NA-Thraustochytrium\_sp\_MMETSP0198\_c484\_g1\_i1.p1 Ikaryota-Haptophyta-NA-Prymnesiales-NA-Chrysochromulina\_rotalis\_MMETSP0287\_c35535\_g1\_i1.p1 Eukaryota-Haptophyta-NA-Prymnesiales-NA-Chrysochromulina\_rotalis\_MMETSP0287\_c36426\_g1\_i1.p1 aryota-Haptophyta-NA-Prymnesiales-NA-Imantonia\_sp\_MMETSP1474\_c4455\_g1\_i1.p1 A-Prymnesiales-NA-Prymnesium\_parvum\_MMETSP1083\_c24526\_g1\_i1.p1 ukaryota-Alveolata-Dinophyceae-NA-Unranked-Heterocapsa\_triquestra\_MMETSP0448\_c54432\_g1\_i1.p1 ukaryota-Alveolata-Dinophyceae-NA-Unranked-Lingulodinium\_polyedra\_MMETSP1034\_c7107\_g1\_i2.p1 Eukaryota-Perkinsozoa-NA-Perkinsida-Perkinsidae-Perkinsus\_marinus\_XP\_002771626.1 ukaryota-Cercozoa-Chlorarachniophyceae-NA-NA-Bigelowiella\_longifila\_MMETSP1359\_c3983\_g1\_i1.p1 karyota-Cercozoa-Chlorarachniophyceae-NA-NA-Bigelowiella\_natans\_MMETSP1054\_c3180\_g1\_i3.p1 ukaryota-Cercozoa-Chlorarachniophyceae-NA-NA-Chlorarachnion reptans MMETSP0109 c7193 g1 i1.p1 Eukaryota-Cercozoa-Chlorarachniophyceae-NA-NA-Lotharella\_globosa\_MMETSP0112\_c15066\_g1\_i1.p1 — Eukaryota-Cercozoa-NA-Euglyphida-Paulinellidae-Paulinella\_chromatophora\_scaffold2486-size2466\_m.28096 ----- MSTRG.7421.1.p1 — Eukaryota-Cercozoa-NA-Euglyphida-Paulinellidae-Paulinella\_chromatophora\_scaffold2232-size2579\_m.26050 —— MSTRG.23343.1.p1 ——— MSTRG.21654.2.p1 Eukaryota-Retaria-NA-NA-NA-Ammonia\_sp\_MMETSP1384\_c19095\_g1\_i1.p1 ——— Eukaryota-Retaria-NA-NA-NA-Rosalina\_sp\_MMETSP0190\_c19672\_g1\_i2.p1 Eukaryota-Retaria-NA-NA-NA-Sorites\_sp\_MMETSP0191\_c27637\_g1\_i1.p1 ——— Eukaryota-Retaria-NA-NA-NA-Elphidium\_margaritaceum\_MMETSP1385\_c14330\_g1\_i1.p1 Eukaryota-Retaria-NA-NA-Ammonia\_sp\_MMETSP1384\_c2213\_g1\_i1.p1 Eukaryota-Retaria-NA-NA-NA-Rosalina\_sp\_MMETSP0190\_c1877\_g1\_i1.p1 — Eukaryota-Retaria-NA-NA-NA-Elphidium\_margaritaceum\_MMETSP1385\_c15541\_g1\_i1.p1 Eukaryota-Annelida-Clitellata-Hirudinida-Glossiphoniidae-Helobdella\_robusta\_jgi107672 Eukaryota-Nematoda-Chromadorea-Rhabditida-Rhabditidae-Caenorhabditis\_elegans\_NP\_871945.1 —— Eukaryota-Chordata-Actinopteri-Salmoniformes-Salmonidae-Salmo\_salar\_XP\_013999681.1 100 NA-NA-NA-NA-NA\_XP\_003266006.1 Eukaryota-Cnidaria-Anthozoa-Scleractinia-Merulinidae-Orbicella\_faveolata\_XP\_020606548.1 Eukaryota-Cnidaria-Anthozoa-Scleractinia-Pocilloporidae-Pocillopora\_damicornis\_XP\_027042372.1 Eukaryota-Placozoa-NA-NA-Trichoplacidae-Trichoplax\_adhaerens\_XP\_002113928.1 anoflagellata-NA-Acanthoeca\_sp\_MMETSP0105\_c25001\_g1\_i1.p1 — Eukaryota-Choanoflagellata-Choanoflagellata-Choanoflagellata-Salpingoecidae-Salpingoeca\_rosetta\_XP\_004994431.1 Eukaryota-Glaucophyta-Glaucophyta-NA-Cyanophoraceae-Cyanophora\_paradoxa\_tig00001094\_g6997.t1 Eukaryota-Streptophyta-NA-Malpighiales-Salicaceae-Populus\_euphratica\_XP\_011015101.1 noebozoa-NA-NA-Paramoebidae-Filamoeba\_nolandi\_MMETSP0413\_c21\_g1\_i1.p1 Lukaryota-Amoebozoa-NA-NA-Paramoebidae-Mayorella sp MMETSP0417 c15850 g1 i1.p1 Feukaryota-Amoebozoa-NA-NA-Paramoebidae-Stygamoeba\_regulata\_MMETSP0447\_c16419\_g1\_i1.p1 Eukaryota-Amoebozoa-NA-NA-Paramoebidae-Neoparamoeba\_aestuarina\_MMETSP0161\_c28158\_g1\_i1.p1 karyota-Amoebozoa-NA-NA-Paramoebidae-Sexangularia\_sp\_MMETSP0437\_c8039\_g1\_i1.p1 karyota-Stramenopiles-NA-Bicosoecida-Cafeteriaceae-Cafeteria\_sp\_MMETSP1104\_c4563\_g1\_i1.p1 — Eukaryota-Cercozoa-Chlorarachniophyceae-NA-NA-Norrisiella sphaerica MMETSP0113 c2258 g1 i1.p1 domonadales-Chlamydomonadaceae-Chlamydomonas\_chlamydogama\_MMETSP1392\_c16539\_g1\_i1.p1 Eukaryota-Chlorophyta-NA-NA-NA-Tetraselmis\_astigmatica\_MMETSP0804\_c4296\_g1\_i3.p1 Eukaryota-Chlorophyta-NA-NA-NA-Tetraselmis\_chuii\_MMETSP0491\_c7305\_g1\_i1.p1 Eukaryota-Cryptophyta-NA-Cryptomonadales-Hemiselmidaceae-Hemiselmis\_rufescens\_MMETSP1357\_c20559\_g1\_i1.p1 Eukaryota-Cryptophyta-NA-Cryptomonadales-NA-Hanusia\_phi\_MMETSP1048\_c6571\_g1\_i1.p1 ptophyta-NA-Pyrenomonadales-Geminigeraceae-Guillardia\_theta\_MMETSP0046\_c12453\_g1\_i1.p1 phyta-NA-Pyrenomonadales-Pyrenomonadaceae-Rhodomonas\_lens\_MMETSP0484\_c44365\_g1\_i1.p1 Eukaryota-Cryptophyta-NA-Pyrenomonadales-Geminigeraceae-Proteomonas\_sulcata\_MMETSP1049\_c32202\_g1\_i1.p1 Eukaryota-Cryptophyta-NA-Pyrenomonadales-NA-Geminigera\_cryophila\_MMETSP0799\_c10809\_g1\_i1.p1 cota-Chytridiomycetes-Spizellomycetales-Spizellomycetaceae-Spizellomyces\_punctatus\_XP\_016607281.1 Nephroselmidophyceae-NA-NA-Nephroselmis\_pyriformis\_MMETSP0034\_c14543\_g1\_i1.p1 ukaryota-Ciliophora-NA-Unranked-NA-Strombidinopsis\_acuminatum\_MMETSP0126\_c63814\_g1\_i1.p1 -0.100" Fundamental Properties of the Control of th Eukaryota-Haptophyta-NA-Phaeocystales-Phaeocystaceae-Phaeocystis\_antarctica\_MMETSP1444\_c11061\_g1\_i1.p1 ryota-Glaucophyta-Glaucophyta-NA-Cyanophoraceae-Cyanophora paradoxa tig00021179 g19303.t1 ıkaryota-Chlorophyta-NA-NA-NA-Dolichomastix\_tenuilepis\_MMETSP0033\_c1508\_g1\_i1.p1 ukaryota-Ciliophora-NA-Unranked-NA-Platyophrya\_macrostoma\_MMETSP0127\_c16058\_g1\_i1.p1 -Kinetoplastida-Kinetoplastida-Trypanosomatidae-Leptomonas\_pyrrhocoris\_XP\_015657036.1 Eukaryota-Kinetoplastida-Kinetoplastida-Kinetoplastida-Trypanosomatidae-Trypanosoma\_conorhini\_XP\_029231004.1 —— Eukaryota-Kinetoplastida-Kinetoplastida-Kinetoplastida-Trypanosomatidae-Trypanosoma\_theileri\_XP\_028886770.1 Eukaryota-Euglenida-NA-Eutreptiales-NA-Eutreptiella\_gymnastica\_MMETSP0039\_c88981\_g1\_i1.p1 Eukaryota-Euglenida-NA-Eutreptiales-NA-Eutreptiella gymnastica-like MMETSP0809 c2789 g1 i1.p1 Eukaryota-Euglenida-NA-Eutreptiales-NA-Eutreptiella\_gymnastica\_MMETSP0039\_c22605\_g1\_i1.p1 Eukaryota-Euglenida-NA-NA-Unranked-Neobodo\_designis\_MMETSP1114\_c9629\_g1\_i1.p1 Eukaryota-Kinetoplastida-Kinetoplastida-Kinetoplastida-Trypanosomatidae-Leishmania\_panamensis\_XP\_010700850.1 Eukaryota-Kinetoplastida-Kinetoplastida-Kinetoplastida-Trypanosomatidae-Leptomonas\_pyrrhocoris\_XP\_015659092.1 — Eukaryota-Heterolobosea-NA-NA-Vahlkampfiidae-Naegleria\_gruberi\_jgi1662 Eukaryota-Heterolobosea-NA-NA-NA-Percolomonas\_cosmopolitus\_MMETSP0759\_c760\_g1\_i1.p1 -Heterolobosea-NA-NA-Vahlkampfiidae-Naegleria\_gruberi\_XP\_002680808.1 Eukaryota-Mesomycetozoea-Ichthyosporea-NA-NA-Capsaspora\_owczarzaki\_XP\_004349912.2 ıkaryota-Glaucophyta-Glaucophyta-Gloeochaetales-Gloeochaetaceae-Gloeochaete\_witrockiana\_MMETSP0308\_c19541\_g1\_i1.p1 Eukaryota-Apicomplexa-Aconoidasida-Haemosporida-Plasmodiidae-Plasmodium\_chabaudi\_XP\_016654891.1 - Eukaryota-Apicomplexa-Aconoidasida-Haemosporida-Plasmodiidae-Plasmodium\_coatneyi\_XP\_019916514.1 yota-Apicomplexa-Aconoidasida-Piroplasmida-Babesiidae-Babesia\_microti\_XP\_021338597.1 karyota-Apicomplexa-Aconoidasida-Piroplasmida-Theileriidae-Theileria\_equi\_XP\_004833829.1 Eukaryota-Chromeraceae-NA-NA-NA-Chromera\_velia\_MMETSP0290\_c29045\_g1\_i1.p1 Eukaryota-Ciliophora-NA-Unranked-NA-Climacostomum\_virens\_MMETSP1397\_c6900\_g1\_i3.p1 Eukaryota-Ciliophora-NA-Unranked-NA-Fabrea\_salina\_MMETSP1345\_c3050\_g1\_i1.p1 Eukaryota-Diplomonadida-Diplomonadida-Diplomonadida-Hexamitidae-Giardia\_intestinalis\_XP\_001706344.1 rotiomycetes-Eurotiales-Aspergillaceae-Aspergillus\_japonicus\_XP\_025524611.1 Eukaryota-Ascomycota-Eurotiomycetes-Onygenales-Ajellomycetaceae-Blastomyces\_gilchristii\_XP\_002620622.1 a-Ascomycota-Eurotiomycetes-Eurotiales-Trichocomaceae-Talaromyces\_marneffei\_XP\_002150161.1 Eukaryota-Streptophyta-NA-Fagales-Fagaceae-Quercus\_suber\_XP\_023878964.1 Eukaryota-Streptophyta-NA-Fagales-Fagaceae-Quercus\_suber\_XP\_023888888.1 Eukaryota-Ascomycota-Leotiomycetes-Helotiales-Sclerotiniaceae-Sclerotinia\_sclerotiorum\_XP\_001586607.1 a-Ascomycota-Sordariomycetes-Hypocreales-Nectriaceae-Fusarium\_oxysporum\_XP\_018235015.1 Eukaryota-Ascomycota-Sordariomycetes-Magnaporthales-Magnaporthaceae-Gaeumannomyces\_tritici\_XP\_009217386.1 cota-Orbiliomycetes-Orbiliales-Orbiliaceae-Arthrobotrys\_oligospora\_XP\_011123641.1 Eukaryota-Basidiomycota-Tremellomycetes-Tremellales-Cryptococcaceae-Cryptococcus\_neoformans\_XP\_012047746.1 Eukaryota-Basidiomycota-Tremellomycetes-Tremellales-Cryptococcaceae-Kwoniella\_mangrovensis\_XP\_019002336.1

Eukaryota-Basidiomycota-Tremellomycetes-Tremellales-Cryptococcaceae-Kwoniella\_pini\_XP\_019013308.1 Eukaryota-Basidiomycota-Tremellomycetes-Trichosporonales-Trichosporonaceae-Apiotrichum\_porosum\_XP\_028477184.1 Eukaryota-Basidiomycota-Tremellomycetes-Tremellales-Tremellaceae-Tremella\_mesenterica\_jgi68552 Eukaryota-Mucoromycota-Mortierellomycetes-Mortierellales-Mortierellaceae-Lobosporangium\_transversale\_XP\_021886304.1 Eukaryota-Mucoromycota-Glomeromycetes-Glomerales-Glomeraceae-Rhizophagus\_irregularis\_XP\_025182850.1 Eukaryota-Mucorales-Mucoraceae-Undefined-Undefined-Mucor\_circinelloides\_jgi32396 Eukaryota-Mucoromycota-Mucoromycetes-Mucorales-Rhizopodaceae-Rhizopus\_microsporus\_XP\_023464160.1 Eukaryota-Mucoromycota-Mucoromycetes-Mucorales-Phycomycetaceae-Phycomyces\_blakesleeanus\_XP\_018294250.1 Eukaryota-Streptophyta-Bryopsida-Funariales-Funariaceae-Physcomitrella\_patens\_XP\_024382794.1 \_\_\_\_\_\_Eukaryota-Streptophyta-Bryopsida-Funariales-Funariaceae-Physcomitrella\_patens\_XP\_024382815.1 Eukaryota-Streptophyta-Bryopsida-Funariales-Funariaceae-Physcomitrella\_patens\_XP\_024382802.1 Eukaryota-Trichomonadida-Trichomonadida-Trichomonadidae-Trichomonadidae-Trichomonas\_vaginalis\_XP\_001301520.1 Eukaryota-Trichomonadida-Trichomonadida-Trichomonadida-Trichomonadida-Trichomonadidae-Trichomonas\_vaginalis\_XP\_001302578.1 — Eukaryota-Trichomonadida-Trichomonadida-Trichomonadida-Trichomonadidae-Trichomonas\_vaginalis\_XP\_001581986.1 - Eukaryota-Acytosteliales-Acytosteliales-Acytosteliales-Acytosteliaceae-Acytostelium subglobosum XP 012753966.1 —— Eukaryota-Acytosteliales-Acytosteliales-Acytosteliales-Acytosteliaceae-Heterostelium album XP 020435988.1 Eukaryota-Acytosteliales-Acytosteliales-Acytosteliales-Cavenderiaceae-Cavenderia\_fasciculata\_XP\_004355730.1 Eukaryota-Fonticulida-Fonticulida-Fonticulida-Fonticulaceae-Fonticula\_alba\_XP\_009497122.1 Eukaryota-Mucorales-Mucoraceae-Undefined-Undefined-Mucor\_circinelloides\_jgi47512 Eukaryota-Mucoromycota-Mucoromycetes-Mucorales-Phycomycetaceae-Phycomyces\_blakesleeanus\_XP\_018285986.1 Eukaryota-Mucorales-Mucoraceae-Undefined-Undefined-Mucor\_circinelloides\_jgi80480 Eukaryota-Mucoromycota-Glomeromycetes-Glomerales-Glomeraceae-Rhizophagus\_irregularis\_XP\_025176894.1 Eukaryota-Longamoebia-Longamoebia-Longamoebia-Acanthamoebidae-Acanthamoeba\_castellanii\_XP\_004336120.1 — Bacteria-Chlamydiae-Chlamydia-Chlamydiales-NA-Chlamydiales\_bacterium\_SCGC\_AG110M15\_WP\_088244702.1 Eukaryota-Apusomonadidae-NA-NA-Thecamonas\_trahens\_XP\_013758706.1