**Files (excel files attached):**

**Table\_S1.xlsx: Taxon source and code**

Taxa are listed by major clade, and information is given about the source of the data (e.g. OrthoMCL, Genbank, Moore Transcriptome Project). Codes used throughout the study are given. Taxa in red are in Phylobayes analysis but removed from other analyses.

**Table\_S2.xlsx: Presence/Absence of genes x taxa**

Genes present by taxon. 1 = present; 0 = absent. Genes are given by OG name (OrthoMCL) and are marked with an \* if a member of the 150 most even gene dataset and with a ^ if identified as a gene affected by EGT

**Data (below):**

**Table\_S3: Monophyly of subclades.**

Monophyly of eukaryotic sub-clades in trees from concatenated dataset analyses.

**Table\_S4: Subsampling results.**

Monophyly of major clades in trees from subsampled data by characters and by gene.

**Supplemental Tree Data**: **Final trees (see Table 1) as newick strings.**

These can be viewed in many tree viewers including SeaView (http://pbil.univ-lyon1.fr/software/seaview.html) and FigTree (<http://tree.bio.ed.ac.uk/software/figtree/>). Trees from Table 1 are 150\_euk\_raxml, 150\_euk-EGT\_raxml, 150\_euk\_examl, 150\_euk-EGT\_examl, 1554\_euks, 1554\_euks-EGT, 150\_all, 150\_all-EGT, 1554\_all, 1554\_all-EGT, 150\_Euk\_phylobayes. The tree from Figure 3 with leaf neames and support values is 207\_Mono\_Euks.

**Table S3: Monophyly of subclades is high across all analyses.**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Analysis** | **150** | **150-EGT** | **150** | **150-EGT** | **1554** | **1554-EGT** | **150** | **150-EGT** | **1554** | **1554-EGT** | **150** |
| **# taxa** | 232 | 232 | 232 | 232 | 232 | 232 | 800 | 800 | 800 | 800 | 235 |
| **Domain** | E | E | E | E | E | E | A,B,E | A,B,E | A,B,E | A,B,E | E |
| **# characters** | 36346 | 35302 | 36346 | 35302 | 64860 | 54939 | 36346 | 35302 | 64860 | 54939 | 34991 |
| **Software** | RAx | RAx | EXa | EXa | EXa | EXa | EXa | EXa | EXa | EXa | PB |
|  |  |  |  |  |  |  |  |  |  |  |  |
| **Apicomplexa** | 99 | 99 | x | x | x | x | x | x | x | x | o |
| **Ascomycetes** | 100 | 100 | x | x | x | x | x | x | x | x | 1 |
| **Basidiomycetes** | 100 | 100 | x | x | x | x | x | x | x | x | 1 |
| **Ciliates** | 100 | 100 | x | x | x | x | x | x | x | x | 0.73 |
| **Cryptophytes** | 99 | 100 | x | x | x | x | x | x | x | x | 1 |
| **Deuterostome** | 100 | 100 | x | x | x | x | x | x | x | x | 1 |
| **Dinoflagellate** | 100 | 100 | x | x | x | x | x | x | x | x | 0.91 |
| **Fornicata** | 100 | 100 | x | x | x | x | x | x | x | x | 1 |
| **Fungi** | 100 | 100 | x | x | x | x | x | x | x | x | 1 |
| **Glaucophytes** | 98 | 98 | x | x | x | x | x | x | x | x | 1 |
| **Green algae** | 100 | 100 | x | x | x | x | x | x | x | x | 0.91 |
| **Haptophytes** | 100 | 100 | x | x | x | x | x | x | x | x | 1 |
| **Heterolobosea** | 100 | 100 | x | x | x | x | x | x | x | x | 1 |
| **Jakobida** | 100 | 100 | x | x | x | x | x | x | x | x | 1 |
| **Metazoa** | 100 | 100 | x | x | x | x | x | x | x | x | 1 |
| **Protostomes** | 100 | 100 | x | x | x | x | x | x | x | x | 1 |
| **Red algae** | 99 | 94 | x | x | x | x | x | x | o | x | 1 |
| **Stramenopiles** | 98 | 98 | x | x | x | x | x | x | x | x | 0.73 |

Notes: See Table 1 for explanatory notes

**Table\_S4: Subsampling results**

Monophyly of major clades in trees from subsampled data by characters and by gene.

|  |
| --- |
| **Subsampling by Characters** |
|  | **Length of alignment (amino acids)** |  |  |  |  |  |
| **Clade** | **5000** | **10000** | **15000** | **20000** | **25000** | **30000** | **35000** | **40000** | **45000** |
| Amoebozoa | 0.20 | 0.45 | 0.70 | 0.45 | 0.60 | 0.80 | 1.00 | 1.00 | 0.95 |
| Excavata | 0.00 | 0.05 | 0.25 | 0.30 | 0.30 | 0.30 | 0.30 | 0.10 | 0.30 |
| Opisthokonts | 0.05 | 0.50 | 0.75 | 0.70 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |
| Plantae | 0.00 | 0.00 | 0.15 | 0.05 | 0.25 | 0.30 | 0.25 | 0.35 | 0.45 |
| SAR | 0.00 | 0.05 | 0.10 | 0.15 | 0.25 | 0.60 | 0.40 | 0.55 | 0.70 |
| Alveolates | 0.00 | 0.35 | 0.55 | 0.55 | 0.90 | 0.85 | 0.90 | 0.95 | 0.95 |
| Ap, Di, Ch, Pe | 0.30 | 0.50 | 0.45 | 0.50 | 0.65 | 0.60 | 0.60 | 0.75 | 0.80 |
| Discoba | 0.05 | 0.25 | 0.65 | 0.40 | 0.60 | 0.60 | 0.65 | 0.55 | 0.70 |
| Euglenozoa | 0.40 | 0.85 | 0.95 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |
| Green + Red Algae | 0.00 | 0.05 | 0.10 | 0.10 | 0.15 | 0.30 | 0.45 | 0.55 | 0.45 |
| Hacrobia | 0.05 | 0.05 | 0.10 | 0.10 | 0.15 | 0.15 | 0.30 | 0.40 | 0.50 |
| Rhizaria | 0.00 | 0.05 | 0.35 | 0.40 | 0.25 | 0.75 | 0.70 | 0.70 | 0.85 |
| (Sp+Ct)+Me | 0.45 | 0.25 | 0.45 | 0.70 | 0.55 | 0.85 | 0.75 | 0.85 | 0.95 |
| Apicomplexa | 0.30 | 0.60 | 0.70 | 0.45 | 0.65 | 0.45 | 0.95 | 1.00 | 1.00 |
| Ascomycetes | 0.70 | 0.65 | 0.80 | 0.90 | 0.95 | 0.85 | 1.00 | 0.95 | 1.00 |
| Basidiomycetes | 0.80 | 0.95 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ciliates | 0.05 | 0.40 | 0.50 | 0.65 | 0.60 | 0.55 | 0.50 | 0.70 | 0.75 |
| Cryptophytes | 0.50 | 0.55 | 0.80 | 0.85 | 0.85 | 0.90 | 0.95 | 0.95 | 1.00 |
| Deuterostomes | 0.45 | 0.75 | 0.85 | 0.80 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Dinoflagellates | 0.40 | 0.55 | 0.40 | 0.65 | 0.65 | 0.60 | 0.60 | 0.75 | 0.80 |
| Fornicata | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fungi | 0.45 | 0.85 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Glaucophytes | 0.70 | 0.85 | 0.70 | 0.85 | 0.90 | 0.90 | 0.70 | 0.85 | 0.80 |
| Green algae | 0.55 | 0.60 | 0.80 | 0.85 | 0.95 | 0.95 | 1.00 | 1.00 | 0.95 |
| Haptophytes | 0.80 | 0.80 | 0.80 | 0.85 | 0.90 | 0.85 | 1.00 | 0.95 | 1.00 |
| Heterolobosea | 0.90 | 0.85 | 1.00 | 1.00 | 1.00 | 0.90 | 1.00 | 1.00 | 1.00 |
| Jakobida | 0.90 | 0.85 | 1.00 | 1.00 | 1.00 | 0.90 | 1.00 | 1.00 | 1.00 |
| Metazoa | 0.40 | 0.70 | 0.85 | 0.80 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Protostomes | 0.45 | 0.80 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Red algae | 0.15 | 0.35 | 0.60 | 0.55 | 0.65 | 0.70 | 0.90 | 0.90 | 0.95 |
| Stramenopile | 0.10 | 0.10 | 0.40 | 0.50 | 0.65 | 0.75 | 0.45 | 0.80 |  |
|  |  |  |  |  |  |  |  |  |  |
| **Subsampling by Genes** |
|  | **Length of alignment (amino acids)** |  |  |  |  |  |
| **Clade** | **5000** | **10000** | **15000** | **20000** | **25000** | **30000** | **35000** | **40000** | **45000** |
| Amoebozoa | 0.55 | 0.85 | 0.85 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Excavata | 0.10 | 0.00 | 0.25 | 0.15 | 0.30 | 0.15 | 0.20 | 0.05 | 0.20 |
| Opisthokonts | 0.90 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Plantae | 0.15 | 0.20 | 0.35 | 0.50 | 0.55 | 0.75 | 0.70 | 0.85 | 0.90 |
| SAR | 0.05 | 0.45 | 0.60 | 0.85 | 0.85 | 0.95 | 0.95 | 1.00 | 1.00 |
| Alveolates | 0.55 | 0.80 | 0.90 | 0.80 | 0.90 | 1.00 | 0.95 | 1.00 | 0.75 |
| Ap, Di, Ch, Pe | 0.65 | 0.85 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Discoba | 0.20 | 0.35 | 0.55 | 0.70 | 0.65 | 0.60 | 0.70 | 0.65 | 0.80 |
| Euglenozoa | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |
| Green + Red Algae | 0.25 | 0.45 | 0.40 | 0.45 | 0.60 | 0.75 | 0.70 | 0.85 | 0.90 |
| Hacrobia | 0.05 | 0.20 | 0.25 | 0.35 | 0.50 | 0.80 | 0.75 | 0.85 | 0.90 |
| Rhizaria | 0.00 | 0.50 | 0.65 | 0.90 | 0.80 | 1.00 | 0.95 | 0.95 | 1.00 |
| (Sp+Ct)+Me | 0.60 | 0.60 | 0.55 | 0.70 | 0.85 | 0.95 | 0.95 | 1.00 | 1.00 |
| Apicomplexa | 0.50 | 1.00 | 0.90 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ascomycetes | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Basidiomycetes | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ciliates | 0.40 | 0.70 | 0.95 | 0.75 | 0.90 | 1.00 | 0.95 | 1.00 | 0.75 |
| Cryptophytes | 0.60 | 0.90 | 0.90 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |
| Deuterostomes | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Dinoflagellates | 0.70 | 0.85 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fornicata | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Fungi | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Glaucophytes | 0.80 | 0.85 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 |
| Green algae | 0.90 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Haptophytes | 0.85 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 |
| Heterolobosea | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Jakobida | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Metazoa | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Protostomes | 0.85 | 0.90 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Red algae | 0.70 | 0.85 | 0.85 | 0.90 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Stramenopile | 0.40 | 0.70 | 0.80 | 0.90 | 0.85 | 0.90 | 0.95 | 0.95 | 0.75 |

**Supplemental Tree Data**: **Final trees (11 trees named as in Table 1 plus tree from Figure 3) as newick strings.**

These can be viewed in many tree viewers including SeaView (http://pbil.univ-lyon1.fr/software/seaview.html) and FigTree (http://tree.bio.ed.ac.uk/software/figtree/)

**150\_euk\_raxml** = (((Op\_fu\_Scom:0.20132645039553986877,(Op\_fu\_spom:0.26454293280956203693,(((Op\_fu\_mgri:0.15590641874853305993,(Op\_fu\_ncra:0.08759914809163099614,Op\_fu\_gzea:0.09797395971463356001)48:0.01737440618295656158)100:0.04381613655585629707,((Op\_fu\_aory:0.04845650763715036308,(Op\_fu\_anid:0.05108611366352917849,Op\_fu\_afum:0.03670590054145268788)72:0.00939136806688424704)100:0.04589967065213244879,(Op\_fu\_cpos:0.00764799853150900308,Op\_fu\_cimm:0.00072315733071590105)100:0.07428888856665362417)100:0.05908471098208659816)100:0.11704693190506856859,((((Op\_fu\_scer:0.06577082458178105939,Op\_fu\_cgla:0.06264595677270527740)100:0.03855889763838067641,(Op\_fu\_egos:0.08864104601669081651,Op\_fu\_klac:0.07318657446708207170)100:0.01998906287118037625)100:0.11225091535485326455,(Op\_fu\_calb:0.06457361160187936877,(Op\_fu\_dhan:0.07382786913271757734,Op\_fu\_psti:0.05066805454311731904)97:0.02171933693607731516)100:0.08677564093463904782)100:0.09370993428927133773,Op\_fu\_ylip:0.19437748591309175761)100:0.08683620351430401674)100:0.04847939446601824687)100:0.03184076975731364029)100:0.04224818105120308614,(Op\_fu\_Umey:0.24091064345561491455,((Op\_fu\_cneg:0.00944250881042478854,Op\_fu\_cneo:0.01811991547656038523)100:0.20063498202910254320,(Op\_fu\_pchr:0.07080380225312229991,Op\_fu\_lbic:0.09089357991926967639)100:0.08787389401972038605)100:0.04733708732348462095)100:0.06945720793255559522)100:0.05132753897985870006,((Op\_fu\_amac:0.30461358742023397772,((Op\_fu\_Spun:0.13905938513527579814,Op\_fu\_Bden:0.19713535337214568854)100:0.04223401016208650632,Op\_fu\_Npat:0.24709511049161045348)58:0.01516570284443871826)97:0.02878862445944170567,((((Op\_ch\_Mova:0.31588880544938796602,(Op\_ch\_Salp:0.28932931857489885275,Op\_ch\_mbre:0.20939997404186444507)100:0.07628185301050213751)100:0.07721274660929997036,(((Op\_me\_nvec:0.15664331637402903463,Op\_me\_tadh:0.23112696771331123213)99:0.02815379820695779883,((Op\_me\_cint:0.23010334015421127218,((Op\_me\_drer:0.04550622654129609507,(Op\_me\_tnig:0.03446733325876712856,Op\_me\_trub:0.02224157277953494119)100:0.03429413884539474211)100:0.02657496393127324608,((Op\_me\_ggal:0.05262569793012025765,Op\_me\_oana:0.06211809758505242030)100:0.02024019034855014873,(Op\_me\_mdom:0.02897758601146485299,((Op\_me\_clup:0.01598418699529511461,((Op\_me\_ptro:0.01046424056889690146,Op\_me\_hsap:0.00064998548284906971)100:0.00337332569028508467,Op\_me\_mmul:0.03572874514577720206)100:0.00496443169233287424)76:0.00104022632865378214,(Op\_me\_ecab:0.01596431903943427988,(Op\_me\_mmus:0.00304350762006539788,Op\_me\_rnor:0.00995067966061002722)100:0.00993760989340020280)100:0.00877950670247103562)100:0.01641272970520038510)100:0.00920688044370885326)100:0.03223317664010694195)100:0.08948823768865003803)100:0.03110468818810741345,((Op\_me\_sman:0.35724242322352894874,((Op\_me\_cbri:0.02615783679877640294,Op\_me\_cele:0.02225394147594534841)100:0.15664671375965408262,Op\_me\_bmaa:0.14306902368334672992)100:0.17070417269569304608)100:0.03791987799811720461,(Op\_me\_isca:0.20744483508210709299,((Op\_me\_dmel:0.11734912273893211010,((Op\_me\_cpip:0.05041980919834317121,Op\_me\_aaeg:0.02601152712238381792)100:0.01843966632346337453,Op\_me\_agam:0.05045179778146458710)100:0.06759438511276261163)100:0.05266549629825850037,((Op\_me\_phum:0.12284051259672358614,Op\_me\_apis:0.16101281921775567607)100:0.02288831282432370051,(Op\_me\_amel:0.09552774342635063365,Op\_me\_bmor:0.12785344869258113976)93:0.01872488768403939366)82:0.01460299433496409921)100:0.06796791335537931411)100:0.03122697047391551073)100:0.03225804224059951320)100:0.03701278327472970475)100:0.03095404905522291042,(Op\_me\_Mlei:0.25013773350119544725,Op\_me\_Ocar:0.26838002189046283874)99:0.06684103641823233022)100:0.06191500933941870843)100:0.03034523507307652912,(Op\_is\_Mvib:0.30355931063181162965,((Op\_ic\_Sarc:0.24619725384447230243,Op\_ic\_Apar:0.19180787721800554579)100:0.10153600693859091142,Op\_ic\_cowc:0.35635801589017135349)85:0.02100768136359192073)100:0.02626639514608012510)100:0.04517359898247558236,(((EE\_br\_Stet:0.37585868627379154239,EE\_br\_bant:0.25793978351386681602)100:0.16528974803615908984,EE\_ap\_Ttra:0.71425252462758870298)91:0.03825326679681981257,(((EE\_is\_Ctri:0.35155195022297480723,(Ex\_ma\_Mjak:0.17193835204730287258,Ex\_ma\_Mcal:0.18845301080324325382)100:0.19390538139029137032)66:0.04022240356690492263,(((((((Ex\_eu\_Pser:0.12393926695307926067,(Ex\_eu\_lbra:0.04000520688509158485,((Ex\_eu\_linf:0.00543124657985040622,Ex\_eu\_lmex:0.01958408615907703335)96:0.00493763997363651057,Ex\_eu\_lmaj:0.01423450860186763374)100:0.02094053350771446845)100:0.08231794502591678608)100:0.04735723806978539563,(Ex\_eu\_tcru:0.07089347443321586395,(Ex\_eu\_tviv:0.08240977495149001686,(Ex\_eu\_tcon:0.05102057326954655136,(Ex\_eu\_tbrg:0.00045922034878479416,Ex\_eu\_tbru:0.00022946271887496096)100:0.04235331108167347119)100:0.03059099246637372871)100:0.04118436763056414207)100:0.06775106662425837978)100:0.38609614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**150\_euk-EGT\_raxml** = 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**150\_all-EGT** = 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**1554\_all-EGT** = 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**150\_Euk\_phylobayes** = ((((((((Op\_fu\_pchr:0.07845,Op\_fu\_lbic:0.09528)1:0.10135,(Op\_fu\_cneo:0.02151,Op\_fu\_cneg:0.00726)1:0.24114)1:0.05357,Op\_fu\_Umey:0.27483)1:0.08311,((Op\_fu\_spom:0.32496,((Op\_fu\_ylip:0.21900,(((Op\_fu\_klac:0.07897,Op\_fu\_egos:0.09867)1:0.01968,(Op\_fu\_scer:0.07168,Op\_fu\_cgla:0.06736)1:0.04399)1:0.13502,((Op\_fu\_psti:0.05354,Op\_fu\_dhan:0.08058)1:0.02066,Op\_fu\_calb:0.07195)1:0.09666)1:0.11921)1:0.11617,((Op\_fu\_mgri:0.19720,(Op\_fu\_ncra:0.09645,Op\_fu\_gzea:0.10709)1:0.01428)1:0.05595,((Op\_fu\_cpos:0.00803,Op\_fu\_cimm:0.00075)1:0.08082,(Op\_fu\_aory:0.05096,(Op\_fu\_anid:0.05396,Op\_fu\_afum:0.04046)1:0.00987)1:0.05115)1:0.06460)1:0.14256)1:0.05884)1:0.03610,Op\_fu\_Scom:0.24839)1:0.06171)1:0.07346,Op\_fu\_Rory:0.30472)1:0.04906,(Op\_fu\_amac:0.38673,(Op\_fu\_Npat:0.31905,(Op\_fu\_Spun:0.16913,Op\_fu\_Bden:0.24289)1:0.05749)0.58:0.01421)1:0.03161)1:0.13512,((Op\_is\_Mvib:0.38892,(Op\_ic\_cowc:0.46440,(Op\_ic\_Sarc:0.33276,Op\_ic\_Apar:0.23896)1:0.14399)0.94:0.01528)1:0.01764,((((((((Op\_me\_trub:0.02246,Op\_me\_tnig:0.03784)1:0.03823,Op\_me\_drer:0.04762)1:0.02801,((Op\_me\_oana:0.06683,Op\_me\_ggal:0.05809)1:0.02229,(Op\_me\_mdom:0.03107,(((Op\_me\_rnor:0.01066,Op\_me\_mmus:0.00317)1:0.01096,Op\_me\_ecab:0.01682)1:0.00947,((Op\_me\_mmul:0.03800,(Op\_me\_ptro:0.00775,Op\_me\_hsap:0.00077)1:0.00366)1:0.00513,Op\_me\_clup:0.01711)1:0.00121)1:0.01745)1:0.00823)1:0.03756)1:0.10735,Op\_me\_cint:0.27709)1:0.03195,((Op\_me\_sman:0.47226,((Op\_me\_cele:0.02330,Op\_me\_cbri:0.02799)1:0.18033,Op\_me\_bmaa:0.16194)1:0.23497)1:0.03444,(Op\_me\_isca:0.24858,(((Op\_me\_phum:0.13864,Op\_me\_apis:0.18692)1:0.02188,(Op\_me\_bmor:0.14318,Op\_me\_amel:0.10856)1:0.01769)1:0.01390,(Op\_me\_dmel:0.13242,(Op\_me\_agam:0.05413,(Op\_me\_cpip:0.05407,Op\_me\_aaeg:0.02762)1:0.01771)1:0.07143)1:0.05813)1:0.08401)1:0.03363)1:0.03822)1:0.04086,(Op\_me\_nvec:0.17882,(Op\_me\_tadh:0.27035,Op\_me\_Ocar:0.42681)0.61:0.02070)1:0.02446)1:0.02265,Op\_me\_Mlei:0.40181)1:0.10087,((Op\_ch\_mbre:0.25022,Op\_ch\_Salp:0.36670)1:0.10681,Op\_ch\_Mova:0.40831)1:0.10274)1:0.03781)1:0.05883):0.05066,(EE\_ap\_Ttra:1.09673,((((((Ex\_ma\_Mjak:0.20923,Ex\_ma\_Mcal:0.22888)1:0.26456,(Ex\_ox\_Mono:0.32337,Ex\_is\_Tpyr:0.39061)1:0.41719)1:0.03641,EE\_is\_Ctri:0.49563)0.61:0.01955,(((Ex\_ja\_Jbah:0.42326,((Ex\_ja\_Secu:0.30744,Ex\_ja\_Jlib:0.38964)1:0.03198,(Ex\_ja\_Rame:0.24190,Ex\_ja\_Haro:0.19075)1:0.14382)1:0.04201)1:0.27099,(((Ex\_he\_Smar:0.79150,Ex\_he\_Slip:0.49715)1:0.04598,Ex\_he\_Ngru:0.77938)1:0.20130,(((Ex\_eu\_tcru:0.07315,(Ex\_eu\_tviv:0.08905,(Ex\_eu\_tcon:0.05460,(Ex\_eu\_tbru:0.00027,Ex\_eu\_tbrg:0.00051)1:0.04514)1:0.03281)1:0.04834)1:0.07528,(((Ex\_eu\_lmaj:0.01482,(Ex\_eu\_lmex:0.02036,Ex\_eu\_linf:0.00575)1:0.00526)1:0.02093,Ex\_eu\_lbra:0.04312)1:0.09495,Ex\_eu\_Pser:0.14209)1:0.05713)1:0.61994,((Ex\_eu\_Elon:0.11311,Ex\_eu\_Egra:0.02369)1:0.37328,Ex\_eu\_Dpap:0.60599)0.65:0.04911)1:0.22692)1:0.04300)1:0.06848,(((((Sr\_st\_Schi:0.56540,Sr\_st\_Bhom:0.90538)0.51:0.02850,((Sr\_st\_Nocu:0.43907,((Sr\_st\_Pfar:0.52454,(Sr\_st\_tpse:0.17220,(Sr\_st\_Ptri:0.19276,Sr\_st\_Fcyl:0.20805)1:0.07209)1:0.13388)1:0.10391,(Sr\_st\_Odan:0.43880,((Sr\_st\_Vlit:0.58209,Sr\_st\_Sbin:0.00918)1:0.22281,(Sr\_st\_Ljap:0.17532,(Sr\_st\_Fser:0.10595,Sr\_st\_Esil:0.25223)1:0.07756)0.6:0.01934)1:0.11203)0.89:0.03321)0.8:0.02513)1:0.05829,(((Sr\_st\_Pvit:0.10297,(Sr\_st\_Pult:0.04730,Sr\_st\_Pins:0.06145)1:0.06864)0.56:0.04926,((Sr\_st\_pram:0.04230,((Sr\_st\_Pinf:0.03753,Sr\_st\_Pcac:0.09758)0.56:0.02913,Sr\_st\_Blac:0.10236)0.56:0.03418)0.56:0.06005,Sr\_st\_Alai:0.24121)0.56:0.04562)1:0.01956,(Sr\_st\_Spar:0.07800,(Sr\_st\_Acoc:0.14012,Sr\_di\_Aeut:0.16251)1:0.02635)1:0.08307)1:0.17598)1:0.06101)1:0.08581,(((Sr\_ci\_Shis:0.55335,(Sr\_ci\_Sspp:0.15540,Sr\_ci\_Mpul:0.08651)1:0.26992)1:0.20292,((Sr\_ci\_Ipro:0.35025,(((Sr\_ci\_Pmul:0.02977,Sr\_ci\_Emag:0.08862)0.82:0.02148,Sr\_ci\_Ecau:0.22437)1:0.20240,Sr\_ci\_Drum:0.28321)0.83:0.04631)1:0.80452,((Sr\_ci\_Nova:0.92417,Sr\_ci\_Cunc:0.82054)1:0.32016,((Sr\_ci\_tthe:0.17300,Sr\_ci\_Imul:0.29725)1:0.19871,(Sr\_ci\_Ptet:0.64062,Sr\_ci\_Ahae:0.38884)1:0.09517)1:0.14492)1:0.17320)1:0.10772)1:0.13963,((Sr\_pe\_Perk:0.49863,(Sr\_di\_Symb:0.38700,(Sr\_di\_Omar:0.47693,((((Sr\_di\_Kmic:0.30918,Sr\_di\_Kbre:0.37080):0.00000,(Sr\_di\_Lpol:0.22465,Sr\_di\_Atam:0.03064)0.56:0.04777):0.00000,Sr\_di\_Aost:0.20681):0.00000,(Sr\_di\_Htri:0.10804,Sr\_di\_Acar:0.24594)1:0.07942)1:0.11959)1:0.05181)1:0.07604)1:0.08672,((Sr\_st\_Atai:0.62410,(Sr\_ap\_cmur:0.10509,Sr\_ap\_chom:0.12000)1:0.36045)0.99:0.01946,(Sr\_ch\_Cvel:0.69641,(((((Sr\_ap\_pviv:0.01369,Sr\_ap\_pkno:0.01557)1:0.03489,Sr\_ap\_pfal:0.05038)1:0.01646,(Sr\_ap\_pcha:0.01310,(Sr\_ap\_pyoe:0.02056,Sr\_ap\_pber:0.00660)1:0.00649)1:0.04369)1:0.41122,((Sr\_ap\_tpar:0.07205,Sr\_ap\_tann:0.03049)1:0.19635,Sr\_ap\_bbov:0.22691)1:0.30442)1:0.10815,(((Sr\_ap\_tgon:0.02172,Sr\_ap\_ncan:0.01739)1:0.10391,Sr\_ap\_Sneu:0.30417)1:0.07005,(Sr\_ap\_Eten:0.15447,(Sr\_ap\_Emax:0.16608,Sr\_ap\_Eace:0.07461)0.67:0.02017)1:0.19940)1:0.08488)1:0.03264)1:0.02739)1:0.14057)1:0.11271)1:0.09299)1:0.02658,((Sr\_rh\_Cten:0.67623,(Sr\_rh\_Gsph:0.62404,(Sr\_rh\_Rfil:0.68698,(Sr\_rh\_Quin:0.49977,Sr\_rh\_Astr:0.72035)1:0.16350)1:0.28667)0.59:0.02953)0.98:0.04996,((Sr\_rh\_Gcom:0.27846,Sr\_rh\_Bnat:0.71780)0.67:0.12871,(Sr\_rh\_Pmar:0.33359,(Sr\_rh\_Gvul:0.80508,EE\_is\_Pfou:0.86891)1:0.17391)0.73:0.10332)0.98:0.05631)1:0.10778)1:0.03963,((((Pl\_rh\_cmer:0.61208,(Pl\_rh\_Pcru:0.52603,(((Pl\_rh\_Gten:0.34487,(Pl\_rh\_Kalv:0.14048,(Pl\_rh\_Goki:0.05531,Pl\_rh\_Furc:0.12297)0.53:0.04079)0.81:0.06705)0.81:0.09438,(Pl\_rh\_Eden:0.15142,Pl\_rh\_Ccho:0.10898)1:0.05887)0.81:0.17853,(Pl\_rh\_Pyez:0.04253,Pl\_rh\_Batr:0.15451)1:0.21887)0.82:0.06560)1:0.07634)1:0.15476,(((Pl\_gr\_ppat:0.12042,(Pl\_gr\_osat:0.10994,(Pl\_gr\_rcom:0.06509,Pl\_gr\_atha:0.09094)1:0.03312)1:0.08917)1:0.10863,Pl\_gr\_aace:0.52450)1:0.03555,(Pl\_gr\_Mver:0.37901,((Pl\_gr\_otau:0.20206,(Pl\_gr\_micr:0.07532,Pl\_gr\_Mpus:0.31633)1:0.08196)1:0.19204,((Pl\_gr\_Sobl:0.23880,((Pl\_gr\_vcar:0.05435,Pl\_gr\_crei:0.05965)1:0.11165,Pl\_gr\_Ppar:0.27028)1:0.03812)1:0.08719,(Pl\_gr\_Tchu:0.31811,(Pl\_gr\_Pwic:0.23758,Pl\_gr\_Heli:0.21372)1:0.19513)0.84:0.04480)0.84:0.05613)0.84:0.02892)0.8:0.03582)1:0.15374)0.83:0.03295,(Pl\_gl\_Gnos:0.17944,Pl\_gl\_Cpad:0.31159)1:0.13800)0.82:0.03744,(((EE\_ka\_Rtru:0.43209,EE\_is\_Tsub:0.58278):0.00000,(EE\_ha\_Plut:0.34616,(EE\_ha\_Ppar:0.23883,EE\_ha\_Igal:0.18974)1:0.11923)1:0.21939):0.00000,((EE\_cr\_Rlen:0.27926,(EE\_cr\_Rsal:0.25800,EE\_cr\_Gthe:0.29372)1:0.07028)1:0.26105,EE\_cr\_Gpac:0.30529)1:0.14602)0.58:0.02989)1:0.02303)1:0.02420)0.55:0.01422)1:0.01413,(((Am\_va\_Pess:0.44015,Am\_is\_Sexa:0.65546)1:0.19350,((Am\_my\_Hdac:0.49166,(Am\_di\_ddis:0.19195,(Am\_di\_Ppal:0.26993,Am\_di\_Dpur:0.13387)1:0.04908)1:0.31758)1:0.05336,(Am\_ar\_Mbal:0.50236,(Am\_ar\_einv:0.21343,(Am\_ar\_ehis:0.00646,(Am\_ar\_edis:0.01164,Am\_ar\_Enut:0.04327)1:0.00929)1:0.12323)1:0.97688)1:0.13175)1:0.02724)1:0.01659,(Am\_da\_Tric:0.73912,(Am\_is\_Mayo:0.76044,(Am\_fi\_Fnol:0.54175,(Am\_ac\_acas:0.34628,Am\_is\_Sram:0.52035)1:0.13392)0.79:0.01692)1:0.02095)0.95:0.00871)1:0.04478)1:0.01916,((EE\_br\_bant:0.33909,EE\_br\_Stet:0.53361)1:0.29470,((Ex\_pa\_tvag:1.50926,(((Ex\_fo\_glam:0.00935,Ex\_fo\_glae:0.01040)1:0.01623,Ex\_fo\_glab:0.02610)1:0.60943,(Ex\_fo\_Svor:0.63323,Ex\_fo\_Sbar:0.42921)1:0.40023)1:1.15110)1:0.10699,(((Op\_fu\_eint:0.08148,Op\_fu\_ecun:0.07839)1:0.54034,Op\_fu\_ebie:1.52929)1:0.39241,Op\_fu\_Aloc:0.80102)1:1.63446)1:0.09868)0.69:0.01667)1:0.01569):0.00267)1;

**207\_Mono\_Euks** = (((((((((((((Ba\_fi\_Listeria monocytogenes EGD-e:2.92469,Ba\_fi\_Streptococcus pneumoniae TIGR4:0.21340)25:0.19173,Ba\_fi\_Enterococcus faecalis 62 uid159663:0.24843)25:0.17959,Ba\_fi\_Clostridium perfringens str. 13:0.12914)25:0.07294,(Ba\_fi\_Clostridium botulinum A2 Kyoto uid59229:0.03023,Ba\_fi\_Clostridium botulinum A3 str. Loch Maree:0.01490)100:0.19416)28:0.14143,Ba\_fi\_Clostridium thermocellum DSM 1313 uid161989:0.31118)24:0.01279,Ba\_fi\_Exiguobacterium antarcticum B7 uid176125:0.35040)35:0.14449,Ba\_sy\_Anaerobaculum mobile DSM 13181 uid168323:0.52578)17:0.05285,((Ba\_fi\_Staphylococcus aureus subsp. aureus Mu50:0.76775,(Ba\_fi\_Anoxybacillus flavithermus WK1 uid59135:0.16073,((Ba\_fi\_Bacillus anthracis Ames uid57909:0.00000,Ba\_fi\_Bacillus anthracis str. 'Ames Ancestor':0.00000)99:0.00000,Ba\_fi\_Bacillus thuringiensis serovar konkukian 97 27 uid58089:0.00592)86:0.16977)39:0.10226)23:0.08716,(Ba\_fi\_Alkaliphilus metalliredigens QYMF uid58171:0.33204,Ba\_fi\_Brevibacillus brevis NBRC 100599 uid59175:0.03487)35:0.21721)22:0.08838)63:0.10440,(((Ba\_ba\_Runella slithyformis DSM 19594 uid68317:0.25749,(Ba\_ba\_Belliella baltica DSM 15883 uid168182:0.11957,Ba\_ba\_Cyclobacterium marinum DSM 745 uid71485:0.27525)97:0.28481)82:0.22228,((Ba\_fi\_Acetobacterium woodii DSM 1030 uid88073:0.00000,Ba\_ba\_Dyadobacter fermentans DSM 18053 uid59049:0.12139)56:0.23614,(Ba\_ba\_Cellulophaga algicola DSM 14237 uid62159:0.39627,Ba\_ba\_Haliscomenobacter hydrossis DSM 1100 uid66777:0.39268)41:0.17767)21:0.12026)46:0.22705,(Ba\_ba\_Niastella koreensis GR20 10 uid83125:0.37167,Ba\_ba\_Cytophaga hutchinsonii ATCC 33406 uid57651:0.26485)91:0.21756)71:0.24698)73:0.31780,((Ba\_pr\_Haliangium ochraceum DSM 14365 uid41425:0.47974,(Ba\_ac\_Acidothermus cellulolyticus 11B uid58501:0.30100,((Ba\_ac\_Nsp.:0.20310,Ba\_ac\_Cellulomonas fimi ATCC 484 uid66779:0.42194)63:0.09102,(((((Ba\_ac\_Rhodococcus erythropolis PR4 uid59019:0.15416,Ba\_ac\_Nocardia cyriacigeorgica GUH 2 uid89395:0.14862)97:0.16390,((Ba\_ac\_Pseudonocardia dioxanivorans CB1190 uid65087:0.19815,(Ba\_ac\_Actinosynnema mirum DSM 43827 uid58951:0.13782,Ba\_ac\_Amycolatopsis mediterranei U32 uid50565:0.17135)97:0.04952)93:0.08644,(Ba\_ac\_Nakamurella multipartita DSM 44233 uid59221:0.30017,(Ba\_ac\_Modestobacter marinus uid167487:0.09363,Ba\_ac\_Blastococcus saxobsidens DD2 uid89391:0.07888)100:0.25131)35:0.04119)17:0.03769)30:0.06333,(Ba\_ac\_Micromonospora aurantiaca ATCC 27029 uid42501:0.08484,(Ba\_ac\_Micromonospora L5 uid45895:0.02487,(Ba\_ac\_Mycobacterium smegmatis MC2 155 uid57701:0.07294,(Ba\_ac\_Mycobacterium leprae Br4923:0.14596,(Ba\_ac\_Mycobacterium tuberculosis H37Rv:0.00000,Ba\_ac\_Mycobacterium tuberculosis CCDC5079 uid161943:0.00000)100:0.08479)99:0.07642)100:0.12345)94:0.05055)71:0.13538)6:0.04019,Ba\_ac\_Corynebacterium ulcerans BR AD22 uid68291:0.45610)47:0.01966,(Ba\_ac\_Kitasatospora setae KM 6054 uid77027:0.31898,Ba\_ac\_Streptosporangium roseum DSM 43021 uid42521:0.19760)36:0.04292)37:0.10013)19:0.04279)89:0.32138)72:0.21219,(Ba\_pr\_Anaeromyxobacter Fw109 5 uid58755:1.15962,(Ba\_ba\_Rhodothermus marinus DSM 4252 uid41729:0.28821,(Ba\_de\_Marinithermus hydrothermalis DSM 14884 uid65783:0.15384,((Ba\_de\_Deinococcus geothermalis DSM 11300 uid58275:0.05402,Ba\_de\_Deinococcus radiodurans R1:0.09814)99:0.22945,Ba\_de\_Meiothermus ruber DSM 1279 uid46661:0.32481)48:0.07509)40:0.07583)76:0.35659)58:0.13129)10:0.06761)13:0.10774,((Ba\_pr\_Pelobacter propionicus DSM 2379 uid58255:0.05517,Ba\_pr\_Pelobacter carbinolicus DSM 2380 uid58241:0.35304)59:0.11517,(Ba\_fi\_Desulfotomaculum reducens MI 1 uid58277:1.10746,Ba\_pr\_Geobacter sulfurreducens PCA:0.14987)31:0.05384)89:0.49110)5:0.06744,(((Ba\_ch\_Herpetosiphon aurantiacus DSM 785 uid58599:3.64053,((Ba\_pr\_Magnetococcus MC 1 uid57833:0.33241,(Ba\_cl\_Chlorobium tepidum TLS:0.74130,(Ba\_ba\_Chitinophaga pinensis DSM 2588 uid59113:0.36643,(Ba\_ch\_Roseiflexus RS 1 uid58523:0.01619,Ba\_ch\_Roseiflexus castenholzii DSM 13941 uid58287:0.10828)98:0.71672)12:0.03001)45:0.18695)32:0.07584,((((Ba\_pr\_Beijerinckia indica ATCC 9039 uid59057:0.18689,Ba\_pr\_Methylocella silvestris BL2 uid59433:0.24686)100:0.27684,(((Ba\_pr\_Polymorphum gilvum SL003B 26A1 uid65447:0.10692,Ba\_pr\_Nitrobacter hamburgensis X14 uid58293:0.34220)27:0.07144,(((Ba\_pr\_Csp.:0.07722,Ba\_pr\_Mesorhizobium loti MAFF303099 uid57601:0.17325)97:0.10550,((Ba\_pr\_Bartonella tribocorum CIP 105476 uid59129:0.41678,(Ba\_pr\_Brucella suis VBI22 uid83617:0.00000,Ba\_pr\_Brucella suis 1330:0.00000)100:0.11145)65:0.03963,Ba\_pr\_Agrobacterium tumefaciens str. C58:0.09869)53:0.03034)86:0.14341,(Ba\_pr\_Pelagibacterium halotolerans B2 uid74393:0.28729,(Ba\_pr\_Ruegeria TM1040 uid58193:0.24404,Ba\_pr\_Roseobacter litoralis Och 149 uid54719:0.40043)71:0.12964)29:0.03908)47:0.04131)31:0.07933,Ba\_pr\_Azorhizobium caulinodans ORS 571 uid58905:0.41907)40:0.08219)42:0.10796,(Ba\_pr\_Bradyrhizobium japonicum USDA 6 uid158851:0.06895,(Ba\_pr\_Rhodopseudomonas palustris BisA53 uid58445:0.24475,Ba\_pr\_Bsp.:0.08625)43:0.06178)100:0.32718)39:0.17013,(Ba\_pr\_Rhodospirillum photometricum uid159003:0.45755,(((Ba\_pr\_Hirschia baltica ATCC 49814 uid59365:0.28366,Ba\_pr\_Hyphomonas neptunium ATCC 15444 uid58433:0.25405)100:0.31447,(Ba\_pr\_Acidiphilium multivorum AIU301 uid63345:0.55836,Ba\_pr\_Methylobacterium extorquens DM4 uid61617:0.37496)97:0.16578)42:0.17470,(((Ba\_pr\_Parvularcula bermudensis HTCC2503 uid51641:0.62629,Ba\_pr\_Novosphingobium PP1Y uid67383:0.51666)58:0.07032,(Ba\_pr\_Ruegeria pomeroyi DSS 3 uid57863:0.22586,((Ba\_pr\_Roseobacter denitrificans OCh 114 uid58597:0.15488,Ba\_pr\_Phaeobacter gallaeciensis 2 10 uid54715:0.14216)86:0.07294,Ba\_pr\_Rhodobacter sphaeroides 2 4 1 uid57653:0.27657)39:0.03627)98:0.21645)38:0.07867,(Ba\_pr\_Azospirillum lipoferum 4B uid82343:0.09236,Ba\_pr\_Azospirillum brasilense Sp245 uid162161:0.04522)93:0.24805)27:0.07480)21:0.17353)13:0.08751)42:0.14600)33:0.02717)6:0.08212,(((((Ba\_cy\_Cyanothece ATCC 51142 uid59013 :0.16401,Ba\_pr\_Coxiella burnetii RSA 493:0.29775)24:0.07564,Ba\_pr\_Nitrosococcus oceani ATCC 19707 uid58403:0.43028)12:0.10656,((Ba\_aq\_Hydrogenobacter thermophilus TK 6 uid159875:0.34164,(Ba\_aq\_Aaeo:0.00000,Ba\_aq\_Aquifex aeolicus VF5:0.00000)99:0.33806)98:1.02346,Ba\_pr\_Acidithiobacillus ferrooxidans ATCC 53993 uid58613:0.34520)69:0.24579)3:0.04395,((Ba\_pr\_Alkalilimnicola ehrlichii MLHE 1 uid58467:0.21166,Ba\_pr\_Halorhodospira halophila SL1 uid58473:0.30093)100:0.22106,(Ba\_pr\_Allochromatium vinosum DSM 180 uid46083:0.37413,Ba\_pr\_Pseudoxanthomonas suwonensis 11 1 uid62105:0.52192)19:0.07416)8:0.03232)7:0.18358,((((Ba\_pr\_Nitrosospira multiformis ATCC 25196 uid58361:0.30100,(((Ba\_pr\_Methylovorus glucosetrophus SIP3 4 uid59367:0.00000,Ba\_pr\_Methylovorus MP688 uid60723:0.00248)100:0.11663,(Ba\_pr\_Methylotenera 301 uid49469:0.06752,Ba\_pr\_Methylotenera mobilis JLW8 uid59373:0.04184)99:0.12445)98:0.15445,((Ba\_pr\_Pseudomonas syringae tomato DC3000 uid57967:0.21451,Ba\_pr\_Chromobacterium violaceum ATCC 12472 uid58001:0.15005)68:0.07828,Ba\_pr\_Psychrobacter cryohalolentis K5 uid58373:0.44042)26:0.05809)24:0.05647)15:0.04763,((Ba\_pr\_Bordetella pertussis Tohama I uid57617:0.30007,(((Ba\_pr\_Herbaspirillum seropedicae SmR1 uid50427:0.12702,((Ba\_pr\_Acidovorax citrulli AAC00 1 uid58429:0.15674,Ba\_pr\_Rubrivivax gelatinosus IL144 uid158163:0.13059)91:0.21578,(Ba\_pr\_Collimonas fungivorans Ter331 uid70793:0.05260,Ba\_pr\_Herminiimonas arsenicoxydans uid58291:0.08248)100:0.05641)40:0.10269)36:0.07800,(((Ba\_pr\_Ralstonia solanacearum Po82 uid162133:0.00859,Ba\_pr\_Ralstonia solanacearum GMI1000:0.01888)100:0.11002,(Ba\_pr\_Cupriavidus necator N 1 uid68689:0.01163,Ba\_pr\_Ralstonia eutropha H16 uid62925:0.19469)69:0.02479)99:0.13045,((Ba\_pr\_Burkholderia mallei ATCC 23344:0.02693,Ba\_pr\_Burkholderia pseudomallei 1710b:0.01881)100:0.05213,Ba\_pr\_Burkholderia vietnamiensis G4 uid58075:0.09511)100:0.18490)65:0.08030)14:0.04467,(Ba\_pr\_Polynucleobacter necessarius STIR1 uid58967:0.27481,(Ba\_pr\_Comamonas testosteroni CNB 2 uid62961:0.07617,(Ba\_pr\_Acidovorax ebreus TPSY uid59233:0.07017,(Ba\_pr\_Dsp.:0.00000,Ba\_pr\_Delftia acidovorans SPH 1 uid58703:0.08022)99:0.09072)68:0.06869)95:0.16995)54:0.08943)31:0.03169)85:0.07078,((Ba\_pr\_Aromatoleum aromaticum EbN1 uid58231:0.10656,Ba\_pr\_Pseudogulbenkiania NH8B uid73423:0.14113)61:0.08307,Ba\_pr\_Dechlorosoma suillum PS uid81439:0.22866)24:0.03062)34:0.08794)26:0.07115,(((Ba\_pr\_Halomonas elongata DSM 2581 uid52781:0.37663,Ba\_pr\_Marinobacter aquaeolei VT8 uid59419:0.23409)59:0.05210,(Ba\_pr\_Pseudoxanthomonas spadix BD a59 uid75113:0.31224,(Ba\_pr\_Pseudomonas aeruginosa DK2 uid168996:0.21513,Ba\_pr\_Azotobacter vinelandii DJ uid57597:0.19611)63:0.06500)75:0.10789)59:0.07944,(((((Ba\_pr\_Alteromonas SN2 uid67349:0.18073,Ba\_pr\_Pseudoalteromonas atlantica T6c uid58283:0.18723)100:0.12891,(Ba\_pr\_Colwellia psychrerythraea 34H uid57855:0.26556,Ba\_pr\_Pseudoalteromonas haloplanktis TAC125 uid58431:0.20276)76:0.04782)82:0.07497,Ba\_pr\_Marinomonas posidonica IVIA Po 181 uid67323:0.41496)49:0.04383,(Ba\_pr\_Rhodopirellula baltica SH 1:0.55790,(Ba\_pr\_Psychromonas ingrahamii 37 uid58521:0.33562,(Ba\_pr\_Aeromonas hydrophila ATCC 7966 uid58617:0.24080,(((Ba\_pr\_Mannheimia succiniciproducens MBEL55E uid58197:0.12140,((Ba\_pr\_Aggregatibacter actinomycetemcomitans D7S 1 uid46989:0.04225,Ba\_pr\_Aggregatibacter aphrophilus NJ8700 uid59407:0.02530)91:0.02162,Ba\_pr\_Haemophilus somnus 2336 uid57979:0.10174)91:0.03291)99:0.13396,(((Ba\_pr\_Providencia stuartii MRSN 2154 uid162193:0.17421,Ba\_pr\_Photorhabdus luminescens laumondii TTO1 uid61593:0.08553)99:0.06631,(((((Ba\_pr\_Cronobacter turicensis z3032 uid40821:0.02094,Ba\_pr\_Cronobacter sakazakii ES15 uid167045:0.00811)100:0.02925,(Ba\_pr\_Enterobacter cloacae ATCC 13047 uid48363:0.04924,(Ba\_pr\_Citrobacter koseri ATCC BAA 895 uid58143:0.01716,((Ba\_pr\_Escherichia coli K 12 substr DH10B uid58979:0.00259,Ba\_pr\_Escherichia coli O157 H7 EC4115 uid59091:0.00211)94:0.00335,Ba\_pr\_Escherichia fergusonii ATCC 35469 uid59375:0.02112)97:0.03539)95:0.02860)79:0.03562)79:0.04723,(Ba\_pr\_Erwinia tasmaniensis Et1 99 uid59029:0.01535,Ba\_pr\_Erwinia pyrifoliae Ep1 96 uid40659:0.01311)97:0.07732)60:0.03219,(Ba\_pr\_Pectobacterium carotovorum PC1 uid59295:0.09146,Ba\_pr\_Dickeya dadantii Ech703 uid59363:0.07606)93:0.02178)35:0.03277,Ba\_pr\_Rsp.:0.09169)40:0.02124)75:0.23109,(((Ba\_pr\_Escherichia coli str. K-12 substr. W3110:0.00000,Ba\_pr\_Shigella flexneri 2a str. 301:0.00554)100:0.02666,Ba\_pr\_Salmonella enterica subsp. enterica serovar Typhi str. CT18:0.02627)83:0.04716,(Ba\_pr\_Yersinia pestis CO92:0.04109,Ba\_pr\_Yersinia enterocolitica subsp. enterocolitica 8081:0.02391)100:0.09811)77:0.05814)46:0.08706)56:0.09512,(Ba\_pr\_Vibrio cholerae O1 biovar El Tor str. N16961:0.10534,Ba\_pr\_Aliivibrio salmonicida LFI1238 uid59251:0.12170)85:0.15168)32:0.06014)11:0.01645)13:0.02642)6:0.02581)11:0.06208,Ba\_pr\_Francisella tularensis subsp. tularensis SCHU S4:0.74659)5:0.05737)5:0.06578)9:0.28926,((Ba\_pr\_Methylomonas methanica MC09 uid67363:0.29734,Ba\_ch\_Parachlamydia acanthamoebae UV7 uid68335:0.83325)77:0.14247,Ba\_pr\_Methylococcus capsulatus Bath uid57607:0.25005)98:0.27271)2:0.11116)9:0.18428)3:0.07662,Ba\_pr\_Desulfobacterium autotrophicum HRM2 uid59061:0.94410)3:0.11047):0.30131,(((Ar\_eu\_Pyrococcus horikoshii OT3 uid57753:0.05109,Ar\_eu\_Pyrococcus furiosus DSM 3638 uid57873:0.04394)90:0.39670,(Ar\_eu\_Methanopyrus kandleri AV19 uid57883:0.48441,(((Ar\_eu\_Methanothermus fervidus DSM 2088 uid60167:0.23797,((Ar\_eu\_Methanothermobacter marburgensis Marburg uid51637:0.02677,Ar\_eu\_Methanothermobacter thermautotrophicus Delta H uid57877:0.03095)100:0.14785,(((Ar\_eu\_Methanobrevibacter smithii ATCC 35061:0.00000,Ar\_eu\_Msmi:0.00000)100:0.17932,Ar\_eu\_Methanobrevibacter ruminantium M1 uid45857:0.19120)100:0.14851,(Ar\_eu\_Methanosphaera stadtmanae DSM 3091 uid58407:0.36082,(Ar\_eu\_Methanobacterium SWAN 1 uid67359:0.12144,Ar\_eu\_Methanobacterium AL 21 uid63623:0.14385)100:0.08310)99:0.05610)100:0.05412)100:0.10695)99:0.20651,((Ar\_eu\_Methanocaldococcus infernus ME uid48803:0.11658,(Ar\_eu\_Methanocaldococcus fervens AG86 uid59347:0.02921,Ar\_eu\_Methanocaldococcus jannaschii DSM 2661:0.01937)100:0.03909)99:0.11414,((Ar\_eu\_Methanococcus aeolicus Nankai 3 uid58823:0.20036,(Ar\_eu\_Mmar:0.01972,Ar\_eu\_Methanococcus maripaludis S2:0.01785)100:0.17453)100:0.14486,Ar\_eu\_Methanotorris igneus Kol 5 uid67321:0.07326)100:0.06024)99:0.29067)92:0.05887,((Ar\_eu\_Aciduliprofundum boonei T469 uid43333:0.31289,Ar\_eu\_Thermoplasma volcanium GSS1 uid57751:0.67882)97:0.25883,(((Ar\_eu\_Aful:0.00005,Ar\_eu\_Archaeoglobus fulgidus DSM 4304:0.00035)100:0.16769,Ar\_eu\_Archaeoglobus veneficus SNP6 uid65269:0.15819)99:0.33432,(((((Ar\_eu\_Methanoculleus bourgensis MS2 uid171377:0.17858,Ar\_eu\_Methanoplanus petrolearius DSM 11571 uid52695:0.25711)80:0.04141,(Ar\_eu\_Methanocorpusculum labreanum Z uid58785:0.39058,(Ar\_eu\_Methanosphaerula palustris E1 9c uid59193:0.16968,Ar\_eu\_Methanoregula boonei 6A8 uid58815:0.19507)99:0.05401)79:0.04265)99:0.07065,Ar\_eu\_Methanospirillum hungatei JF 1 uid58181:0.34868)98:0.27817,((Ar\_eu\_Methanocella arvoryzae MRE50 uid61623:0.17827,Ar\_eu\_Methanocella conradii HZ254 uid157911:0.21505)100:0.28678,((Ar\_eu\_Methanosarcina mazei Go1 uid57893:0.23511,((Ar\_eu\_Methanococcoides burtonii DSM 6242 uid58023:0.15798,Ar\_eu\_Methanohalophilus mahii DSM 5219 uid47313:0.18830)100:0.04652,Ar\_eu\_Methanosalsum zhilinae DSM 4017 uid68249:0.20909)100:0.05154)100:0.13331,(Ar\_eu\_Methanosaeta harundinacea 6Ac uid81199:0.19744,Ar\_eu\_Methanosaeta concilii GP6 uid66207:0.22782)100:0.18984)100:0.06000)61:0.04964)75:0.05204,(((Ar\_eu\_Halorubrum lacusprofundi ATCC 49239 uid58807:0.21573,((Ar\_eu\_Haloferax volcanii DS2 uid46845:0.08766,Ar\_eu\_Haloferax mediterranei ATCC 33500 uid167315:0.03626)100:0.09308,(Ar\_eu\_Halogeometricum borinquense DSM 11551 uid54919:0.09538,(Ar\_eu\_Haloquadratum walsbyi DSM 16790:0.00755,Ar\_eu\_Hwal:0.01838)100:0.16345)94:0.03282)100:0.03600)100:0.06193,((Ar\_eu\_Natronomonas pharaonis DSM 2160 uid58435:0.17798,(Ar\_eu\_Halorhabdus utahensis DSM 12940 uid59189:0.20742,(Ar\_eu\_Halomicrobium mukohataei DSM 12286 uid59107:0.10829,(Ar\_eu\_Haloarcula hispanica ATCC 33960 uid72475:0.00783,Ar\_eu\_Haloarcula marismortui ATCC 43049 uid57719:0.00828)100:0.10892)100:0.04391)100:0.05065)99:0.03908,((Ar\_eu\_Haloterrigena turkmenica DSM 5511 uid43501:0.05670,Ar\_eu\_Halopiger xanaduensis SH 6 uid68105:0.07649)100:0.10625,Ar\_eu\_Halalkalicoccus jeotgali B3 uid50305:0.17449)91:0.03432)61:0.02753)83:0.04157,(Ar\_eu\_Halobacterium salinarum R1 uid61571:0.00000,(Ar\_eu\_Halobacterium sp. NRC-1:0.00000,Ar\_eu\_Halobacterium NRC 1 uid57769:0.00000)100:0.00495)100:0.22314)100:0.57065)95:0.09810)91:0.11042)74:0.08427)66:0.05950)62:0.08038)54:0.05776,((Ar\_na\_Nanoarchaeum equitans Kin4-M:0.00000,Ar\_na\_Nequ:0.00000)100:1.04981,(((((Ar\_cr\_Sulfolobus solfataricus P2:0.21414,(Ar\_cr\_Acidianus hospitalis W1 uid66875:0.16213,(Ar\_cr\_Msed:0.00425,Ar\_cr\_Metallosphaera sedula DSM 5348:0.01117)100:0.21015)100:0.08426)100:0.40371,(Ar\_cr\_Ignicoccus hospitalis KIN4 I uid58365:0.45575,((Ar\_cr\_Staphylothermus marinus F1 uid58719:0.19778,(Ar\_cr\_Desulfurococcus mucosus DSM 2162 uid62227:0.07459,Ar\_cr\_Desulfurococcus kamchatkensis 1221n uid59133:0.10270)100:0.23532)99:0.23599,((Ar\_cr\_hbut:0.19371,Ar\_cr\_Pyrolobus fumarii 1A uid73415:0.19332)99:0.13399,(Ar\_cr\_Aeropyrum pernix K1 uid57757:0.27003,Ar\_cr\_Acidilobus saccharovorans 345 15 uid51395:0.38250)100:0.16501)99:0.06773)98:0.07934)98:0.08255)95:0.11515,((Ar\_cr\_Pyrobaculum oguniense TE7 uid84411:0.09642,Ar\_cr\_Pyrobaculum islandicum DSM 4184 uid58635:0.09593)100:0.31269,(Ar\_cr\_Caldivirga maquilingensis IC-167:0.00240,Ar\_cr\_Cmaq:0.01076)100:0.42990)100:0.40430)93:0.11686,(Ar\_ko\_CKor:0.00000,Ar\_ko\_Candidatus Korarchaeum cryptofilum OPF8:0.00000)100:0.87330)27:0.06235,((Ar\_th\_Cenarchaeum symbiosum A uid61411:0.21698,(Ar\_th\_Nitrosopumilus maritimus SCM1:0.00000,Ar\_th\_Nmar:0.00233)100:0.19261)97:0.75678,((Ex\_fo\_Spironucleus vortens:0.58024,((Ex\_fo\_Giardia lamblia P15:0.00950,Ex\_fo\_Giardia lamblia ATCC 50803:0.00816)100:0.01505,Ex\_fo\_Giardia intestinalis ATCC 50581:0.01720)100:0.38438)100:0.32065,(Ex\_pa\_Trichomonas vaginalis G3:0.70371,((Am\_ar\_Mastigamoeba balamuthi:0.39796,(((((((Op\_fu\_Rhizopus oryzae:0.21127,((Op\_fu\_Ustilago maydis :0.21359,((Op\_fu\_Phanerochaete chrysosporium RP-78:0.06174,Op\_fu\_Laccaria bicolor S238N-H82:0.07075)100:0.07918,(Op\_fu\_Cryptococcus neoformans var. neoformans JEC21:0.00730,Op\_fu\_Cryptococcus neoformans var. grubii H99:0.00534)100:0.18597)100:0.03705)100:0.06192,((Op\_fu\_Saitoella complicata:0.13276,Op\_fu\_Schizosaccharomyces pombe:0.20374)99:0.02594,(((((Op\_fu\_Saccharomyces cerevisiae S288c:0.04863,Op\_fu\_Candida glabrata CBS 138:0.04632)100:0.02527,(Op\_fu\_Eremothecium gossypii:0.06894,Op\_fu\_Kluyveromyces lactis NRRL Y-1140:0.05720)76:0.01205)100:0.07807,(Op\_fu\_Debaryomyces hansenii CBS767:0.05397,(Op\_fu\_Candida albicans:0.05287,Op\_fu\_Pichia stipitis CBS 6054:0.03855)87:0.01634)100:0.06171)100:0.08044,Op\_fu\_Yarrowia lipolytica CLIB122:0.14905)100:0.07802,((Op\_fu\_Neurospora crassa OR74A:0.08294,Op\_fu\_Gibberella zeae PH-1:0.08353)100:0.05713,((Op\_fu\_Coccidioides immitis RS:0.00033,Op\_fu\_Coccidioides posadasii RMSCC 3488:0.00532)100:0.06558,(Op\_fu\_Aspergillus fumigatus Af293:0.04060,(Op\_fu\_Aspergillus oryzae RIB40:0.04876,Op\_fu\_Emericella nidulans:0.03737)95:0.01048)100:0.03972)100:0.05115)100:0.09510)100:0.05044)100:0.04936)100:0.03087)100:0.03519,(Op\_fu\_Neocallimastix patriciarum:0.24395,((Op\_fu\_Allomyces macrogynus:0.23070,Op\_fu\_Spizellomyces punctatus isolate AFTOL-ID 182:0.07698)62:0.05981,Op\_fu\_Batrachochytrium dendrobatidis:0.15664)62:0.03441)85:0.02921)100:0.08961,(((Op\_ic\_Sphaeroforma arctica:0.23741,Op\_ic\_Amoebidium parasiticum:0.14753)100:0.08410,(Op\_is\_Ministeria vibrans:0.25852,Op\_ic\_Capsaspora owczarzaki:0.26029)99:0.03189)100:0.03266,((((Op\_me\_Trichoplax adhaerens:0.18315,Op\_me\_Nematostella vectensis:0.12813)88:0.02489,((Op\_me\_Ciona intestinalis:0.18180,(((Op\_me\_Tetraodon nigroviridis:0.02343,Op\_me\_Takifugu rubripes:0.01505)100:0.02569,Op\_me\_Danio rerio:0.03329)100:0.02214,(Op\_me\_Gallus gallus:0.03251,(Op\_me\_Ornithorhynchus anatinus:0.02915,(Op\_me\_Monodelphis domestica:0.02063,((Op\_me\_Canis lupus familiaris:0.00632,Op\_me\_Equus caballus:0.00508)99:0.00110,(((Op\_me\_Pan troglodytes:0.00470,Op\_me\_Homo sapiens:0.00074)100:0.00114,Op\_me\_Macaca mulatta:0.01109)100:0.00252,(Op\_me\_Mus musculus:0.00333,Op\_me\_Rattus norvegicus:0.00324)100:0.00662)55:0.00088)100:0.01316)67:0.00385)100:0.01056)100:0.02440)100:0.08087)100:0.02991,((Op\_me\_Schistosoma mansoni:0.32854,(Op\_me\_Brugia malayi:0.12281,(Op\_me\_Caenorhabditis elegans:0.01941,Op\_me\_Caenorhabditis briggsae AF16:0.01935)100:0.15191)100:0.13788)100:0.04473,(Op\_me\_Ixodes scapularis:0.16089,(((Op\_me\_Drosophila melanogaster:0.09058,(Op\_me\_Anopheles gambiae str. PEST:0.04538,(Op\_me\_Aedes aegypti:0.02216,Op\_me\_Culex pipiens:0.03208)100:0.01867)100:0.06504)100:0.04691,Op\_me\_Bombyx mori:0.10439)89:0.01520,(Op\_me\_Apis mellifera:0.08502,(Op\_me\_Acyrthosiphon pisum:0.14012,Op\_me\_Pediculus humanus:0.10685)88:0.01764)56:0.01192)100:0.06686)100:0.02886)100:0.02597)100:0.02981)90:0.02399,Op\_me\_Oscarella carmela:0.26460)100:0.03608,((Op\_ch\_Salpingoeca sp.:0.20242,Op\_ch\_Monosiga brevicollis MX1:0.16979)100:0.09697,Op\_ch\_Monosiga ovata:0.25996)100:0.06085)100:0.03155)100:0.04203)100:0.04955,(((Am\_my\_Hyperamoeba dachnaya:0.33574,(Am\_di\_Dictyostelium discoideum AX4:0.11987,Am\_di\_Polysphondylium pallidum:0.16631)100:0.18285)100:0.05965,(Am\_fi\_Filamoeb nolandi ATCC50430:0.31777,(Am\_is\_Eukaryota JRG2011:0.36739,Am\_va\_Pessonella sp. PRA-29:0.25208)100:0.09475)46:0.02531)41:0.02757,(Am\_is\_Stereomyxa ramosa:0.29000,Am\_ac\_Acanthamoeba castellanii:0.19446)100:0.12225)51:0.02882)24:0.01833,((Ex\_is\_Trimastix pyriformis ATCC 50562:0.48577,((Ex\_ja\_Jakoba bahamiensis:0.29187,((Ex\_ja\_Reclinomonas americana :0.17734,Ex\_ja\_Histiona aroides :0.12864)100:0.07598,(Ex\_ja\_Jakoba libera:0.24101,Ex\_ja\_Seculamonas ecuadoriensis:0.17335)66:0.02539)94:0.03872)100:0.13944,((Ex\_eu\_Euglena gracilis:0.25476,((((Ex\_eu\_Trypanosoma vivax:0.06570,(Ex\_eu\_Trypanosoma congolense:0.04134,(Ex\_eu\_Trypanosoma brucei gambiense:0.00041,Ex\_eu\_Trypanosoma brucei TREU927:0.00016)100:0.03196)100:0.02276)100:0.02970,Ex\_eu\_Trypanosoma cruzi strain CL Brener:0.06668)100:0.05716,(Ex\_eu\_Phytomonas serpens:0.08959,(Ex\_eu\_Leishmania braziliensis MHOM/BR/75/M2904:0.02089,(Ex\_eu\_Leishmania mexicana:0.00750,(Ex\_eu\_Leishmania major strain Friedlin:0.01349,Ex\_eu\_Leishmania infantum JPCM5:0.00326)100:0.00290)100:0.01330)100:0.07032)100:0.04227)100:0.34841,Ex\_eu\_Diplonema papillatum:0.41922)77:0.05562)100:0.09039,(Ex\_he\_Sawyeria marylandensis:0.44217,(Ex\_he\_Stachyamoeba lipophora:0.33015,Ex\_he\_Naegleria gruberi:0.42697)75:0.04026)100:0.10531)97:0.04409)79:0.03851)16:0.02688,((((Sr\_st\_Schizochytrium sp.:0.33734,Sr\_st\_Blastocystis hominis:0.39682)95:0.04877,((((Sr\_st\_Thalassiosira pseudonana CCMP1335:0.11494,(Sr\_st\_Fragilariopsis cylindrus:0.12580,Sr\_st\_Phaeodactylum tricornutum:0.10837)100:0.04635)100:0.11811,Sr\_st\_Pseudochattonella farcimen:0.25897)100:0.05349,(Sr\_st\_Ochromonas danica:0.29184,(Sr\_st\_Fucus serratus:0.06087,Sr\_st\_Ectocarpus siliculosus:0.10765)100:0.11394)67:0.02165)100:0.05287,(((Sr\_di\_Aphanomyces euteiches:0.12984,Sr\_st\_Aphanomyces cochlioides:0.10400)29:0.01180,Sr\_st\_Saprolegnia parasitica:0.06528)66:0.04663,((Sr\_st\_Pythium ultimum:0.10252,Sr\_st\_Albugo laibachii:0.13617)67:0.03248,(Sr\_st\_Phytophthora ramorum:0.02052,(Sr\_st\_Phytophthora infestans:0.01087,Sr\_st\_Bremia lactucae:0.04425)100:0.03277)100:0.04892)66:0.03556)100:0.11644)100:0.06303)99:0.06371,(((Sr\_rh\_Astrolonche sp.:0.63000,(Sr\_rh\_Corallomyxa tenera:0.32266,Sr\_rh\_Gromia sphaerica:0.29079)100:0.05352)93:0.04820,Sr\_rh\_Guttulinopsis vulgaris:0.58892)96:0.07347,((((((((Sr\_ap\_Plasmodium berghei:0.00542,Sr\_ap\_Plasmodium yoelii yoelii str. 17XNL:0.01166)100:0.00362,Sr\_ap\_Plasmodium chabaudi:0.00902)100:0.03411,(Sr\_ap\_Plasmodium falciparum 3D7:0.03948,(Sr\_ap\_Plasmodium vivax SaI-1:0.01121,Sr\_ap\_Plasmodium knowlesi strain H:0.01247)100:0.02985)74:0.01599)100:0.28549,((Sr\_ap\_Theileria annulata strain Ankara:0.00945,Sr\_ap\_Theileria parva strain Muguga:0.02473)100:0.15219,Sr\_ap\_Babesia bovis:0.16225)100:0.17031)100:0.06421,((Sr\_ap\_Eimeria acervulina:0.00817,Sr\_ap\_Eimeria maxima:0.04340)100:0.22259,(Sr\_ap\_Sarcocystis neurona:0.23759,(Sr\_ap\_Toxoplasma gondii:0.01067,Sr\_ap\_Neospora caninum:0.01202)100:0.09283)89:0.03410)100:0.07417)100:0.03960,(Sr\_st\_Ascogregarina taiwanensis:0.42388,(Sr\_ap\_Cryptosporidium hominis TU502:0.09477,Sr\_ap\_Cryptosporidium muris RN66:0.07480)100:0.18913)99:0.04326)100:0.07709,(Sr\_pe\_Perkinsus marinus:0.27564,(Sr\_di\_Symbiodinium sp.:0.22857,(Sr\_di\_Oxyrrhis marinia:0.32956,((Sr\_di\_Karenia brevis:0.11894,Sr\_di\_Karlodinium micrum:0.08513)92:0.04268,Sr\_di\_Lingulodinium polyedrum:0.10952)100:0.10717)100:0.06436)81:0.01864)100:0.06903)100:0.07475,((Sr\_ci\_Strombidinopsis sp.:0.30492,Sr\_ci\_Sterkiella histriomuscorum:0.23800)100:0.10072,(Sr\_ci\_Chilodonella uncinata:0.55196,(Sr\_ci\_Anophryoides haemophila:0.30801,(Sr\_ci\_Ichthyophthirius multifiliis:0.19945,Sr\_ci\_Tetrahymena thermophila SB210:0.12274)100:0.14941)100:0.09403)100:0.11331)100:0.08335)99:0.04124)72:0.02690)83:0.03415,(((Pl\_gl\_Glaucocystis nostochinearum:0.12173,Pl\_gl\_Cyanophora paradoxa :0.16382)100:0.09988,(Pl\_rh\_Cyanidioschyzon merolae strain 10D:0.35318,(Pl\_rh\_Porphyridium cruentum:0.27997,(Pl\_rh\_Porphyra yezoensis:0.18002,(Pl\_rh\_Eucheuma denticulatum:0.11407,(Pl\_rh\_Chondrus crispus:0.11335,Pl\_rh\_Gracilaria tenuistipitata:0.17998)51:0.04998)100:0.13377)96:0.03390)100:0.05627)100:0.10362)11:0.01873,(((EE\_ha\_Pavlova lutheri:0.17296,(EE\_ha\_Isochrysis galbana:0.11570,EE\_ha\_Prymnesium parvum:0.10168)100:0.09592)100:0.13368,(EE\_is\_Telonema subtile:0.35217,(EE\_cr\_Goniomonas pacifica:0.25668,((EE\_cr\_Guillardia theta:0.15089,EE\_cr\_Rhodomonas salina:0.20295)100:0.08739,EE\_cr\_Rhodomonas lens:0.21709)100:0.12979)100:0.05097)44:0.02641)39:0.02643,((Pl\_gr\_Physcomitrella patens subsp. patens:0.09701,(Pl\_gr\_Oryza sativa Japonica Group:0.07802,(Pl\_gr\_Ricinus communis:0.04557,Pl\_gr\_Arabidopsis thaliana:0.07903)100:0.02387)100:0.06388)100:0.08530,(Pl\_gr\_Mesostigma viride:0.24713,((Pl\_gr\_Tetraselmis chuii:0.20325,(((Pl\_gr\_Volvox carteri f. nagariensis:0.03197,Pl\_gr\_Chlamydomonas reinhardtii:0.04337)100:0.10129,Pl\_gr\_Scenedesmus obliquus:0.17672)100:0.04361,(Pl\_gr\_Helicosporidium sp.:0.15668,Pl\_gr\_Prototheca wickerhamii:0.15636)100:0.09991)89:0.01603)100:0.04198,(Pl\_gr\_Micromonas sp. RCC299:0.10764,Pl\_gr\_Ostreococcus tauri:0.14374)100:0.13478)100:0.02851)100:0.03652)100:0.09631)65:0.02497)35:0.02104)23:0.01646)11:0.01644)10:0.02548,(EE\_is\_Collodictyon triciliatum:0.29825,(Ex\_ma\_Malawimonas californiana:0.16286,Ex\_ma\_Malawimonas jakobiformis:0.15837)100:0.15591)45:0.03894)31:0.02322,(((EE\_br\_Subulatomonas tetraspora:0.34666,EE\_br\_Breviata anathema:0.22544)100:0.11700,EE\_ap\_Thecamonas trahens:0.56340)31:0.02330,Am\_is\_Mayorella sp.:0.44463)26:0.02722)55:0.04417)62:0.06739,(Am\_ar\_Entamoeba invadens IP1:0.14963,(Am\_ar\_Entamoeba nuttalli:0.00437,(Am\_ar\_Entamoeba histolytica HM-1:0.00437,Am\_ar\_Entamoeba dispar SAW760:0.00996)100:0.01457)100:0.08712)100:0.42479)100:0.08924)89:0.08145)100:0.81898)79:0.13251)48:0.06868)41:0.02908):0.01586)40;