

Data S1 Sequence alignment used for phylogenetic tree construction in nexus file.

#NEXUS

[TITLE: Written by EMBOSS 03/11/21]

begin data;

dimensions ntax=32 nchar=498;

format interleave datatype=protein missing=X gap=-;

matrix

Olpidium	XXKFAKFARETK
Catenaria1	lyqifeyfamfgv---sriaasg-----sdtvlidsarlaklfrdln
Allomyces	-----mapv
Catenaria2	lrelfeqfasfgt---pranasgpn-----fqqetvmdsarflkffrdqn
Blabri126943	LHELFESFASFGA---SSSRPSVAA-----ATDGPLIDSARFVKFFRDTG
Chylag1491303	LEEAFIAFAAFG---SARKPRHGR-----SSGSRISKLAARESG
Clapoll_1869731	LRSAFEAFASFG---SSRNLAASAP-IP--NAAATTIDSARFAKLARDTG
Chytriomycetes2	saaafeefssfg---asrhpigspgvpvh-haqqiamdsskfaklcrdsg
Obemuc1859513	LRTAFEEFALFG---SPRTQAHS---T---TTAPVQMDNAKFAKLCDRSG
Rhizoclostridium2	lraafeefalfg---tpktiaprphl---pnppiqmdskcfaklcrdsg
Gorhay1188404	LYESFDAFCQFG---SSRNLA---GSSTN-L--APQMDGAKFAKFCRDNK
Enthell1467718	LYNCFSSFCQFG---SSRNLS--MGSMTDLA--GPTMDGARWAKFCRDSG
Batrachochytriumd3	lymtfgsfqfg---ssrnls---gsmdis--gptmdgskwakfcrdtg
Batrachochytriums1	lytifasfcqyg---ssrnls---gsasdis--gptmdgskwakfcrdsg
Parsed11082034	LYEVFTQFCAFGAS--RNSNPNLSGSLNNLS-SGPQIDNVRFSKFFRDLK
Glopoll1609812	LYGVYESFCQFGST--RTSNASLSSSLNNLK--GPTMDGSKWAKFCRDCK
Synchytriumm	lrvydsfcafg---ssrnlsnsmeslt--gaqldnakfaklskdtg
Synchytriume	lrdryeafcafg---ssrnлагаatsi-dig--ghqmdnakfakftkdtg
Chytriomycetes1	lharfekfcafg---rgsvgssldsl-----tagstmdgakwakfardcn
Obemuc1832726	LRNTFERFCAFG---RGSVGSSLDL-----TGGSTMDGAKWAKFARDSN
Rhizoclostridium1	LRSTFEKFCAFG---RGSVGSSLDL-----HGGSTMDGPKWAKFARDSN
Chylag1383254	LHDVFERFAAFG---SNRNLSLDSSLLSISGGGLTLDGPRFAKFARDTG
Clapoll_1821589	LHDVFERFCSFG---SNRNLASMDASF----GPGLTMDGAKFAKFARDSG
Blyttiomycetes	XX
Caulochytrium	lrvvfesyanfg---asrnvas-ngslnnla--gpqldnakfaklcretk
Clarep1_1774182	LRSVYETFCNASGSSSRMNLASPHSSLDLSGAGLTMDGARFAKFARDCK
Gaesem1531638	LRDIYEAFCAFG---SNRNLS--TGSLENIA--GPQMDGAKFAKFARDNK
Spizellomyces1	lreiyeafcafg---ssrnlsnphgsmesia--gptmdgakfakfardnr

Triarc1169044	LREIYDAFCAFG---SNRNLSNPHGSLESIA--GPTMDGAKFAKFARDNK
Fimjon1566472	LREIFDAFCAFG---SNRNLATG-----EAG--GNTMDGAKFAKFARDNK
Gervar1417039	LKEVYVAFCAFG---SNRNLAASS---SDVQ--GPTMDGAKFAKFARDNK
Powellomyces	lreiyeafcafg---snrnlats----tdvs--gptmdgakfakfardnk
Olpidium	LISAPKVTAVDVDNAFMRVK---PRASRKIDFEGFQQALRILAEKRYP-Q
Catenaria1	lfdk-sfnsialdinfskakatfqrprklpwaafiyalqlsaankypkl
Allomyces	lrpp-tftttldldlfnkakvhfrrqdrklhydafllyalklsafakfggk
Catenaria2	lldt-nltptslldhftkakaskrtdrklpwnaflyalqlaattkygsa
Blabril126943	LLDS-HLTQTTLDIHFAKAKSQFKRADRKLPFADFALYALQLAAVSKYGA
Chylag1491303	MIGG-NLTVTDVDIVFGRCKV-----GRKLDFKAFKKALEMIAERRGC--
Clapol1_1869731	LIAPPSLTIVDVLIFEKCKI--AKGTRKLDKFGFKKALQMVAEKRC--
Chytriomycetes2	lidnetftlidcdivfskckk---vgkrkleyddfralaeiadirqc--
Obemuc1859513	LVDNISLSLIDVDIIFAKCKQ---VGKRKLFYADFQALREIADTRQC--
Rhizoclosmatium2	liddislsldvdiifakvkq---pgkrklgyadfqralreiawtrqc--
Gorhay1188404	LIGG-KVTPTEVDIVFNKVK---GKTARKIDFKEFQEGRLRLAACKYEG-
Enthel1467718	LLDK-DISATDIDIMFNKVK---AKTARRIDFDQFQAALRLIAAKRFGNS
Batrachochytriumd3	iidk-hitttdidiwfnkvk---aktvrkidfeqfqaalhlvaakrygss
Batrachochytriums1	figk-sitatdfdiwfnkvk---aktarkidfdqfqaalhlvaekrygan
Parsed11082034	VLNK-ELTPTDIDIIFNKVKK--TKTDRKLDKDFCNALVLCSEKKYRPK
Glopol1609812	VIDK-VITPTEVDIVFNKVK---SKTERKIDYDQFIEGLKMISAKKYS-N
Synchytriumm	vvdgkkitnadiditfnkvk---akgarkldwesfqdalallaekkyat
Synchytriume	ivdk-rvtiidvdiifnkvk---akgarkldwetfqdalahlaekky-s
Chytriomycetes1	lidnkrvtstddiifnkvk---akstridweefqvavklvagkky-pk
Obemuc1832726	LIDNKKITSTEIDIIFNKVK---AKNSRRIDWEEFQAALKMVAEKKYA-E
Rhizoclosmatium1	LIDNKKITSTDIDIIFNKVK---SKNSRRIDWDEFCAVKMVAEKKYV-G
Chylag1383254	LVDGKKVTATDIDIIFNKTK---SKGNRRIDWPVFLEAVQLIAEKRYP-E
Clapol1_1821589	LIDGRKVTTEIDIIFNKVK---AKTARRIDWNEFVKAVQMLAEKRYP-N
Blyttiomycetes	XX
Caulochytrium	vvdgkrittteidisfskvl---kggrkmdfgqfgevlrllaekkgf-g
Clarep1_1774182	LIDGKRVTTTDVIDIIFNKA---AKGSRRLDWTTFQAAVRALAQQKYP-E
Gaesem1531638	IIDGKKVTTTDVIDITFNKVK---PKGARKLDWNTFLDALQLAEKKYA-G
Spizellomyces1	lidnkrvtttvdvdiifnkvk---tkgarkldwntfidglteiavkky-pg
Triarc1169044	LIDNKRVTSTDVDITFNKVK---PKGSRKLDWNTFLDGLTDIAEKKNP-G
Fimjon1566472	LIDNKKVTSTDVDIVFNKVK---PKGARKIDWNGFIEGLTLVAEK-KT-G
Gervar1417039	LIDNKKVTSTDVDIIFNKVK---PKGARKLDWNTFLEGLTQIAEKKNP-G
Powellomyces	lidnkkvtstdvdiifnkvk---pkgarkldwntflegltqiaekks-g

Olpidium	KDPE-----EAY----LTLVNHVCQSKGPKVHSI---Q-----
Catenaria1	see-----eafsklvheirhpgpdfapdypgga-----
Allomyces	pasdpadplaaiaeqailenlvseicatg--ilapvvrtaa-----
Catenaria2	msda-----daleqlineavksq---gpiaratv-----
Blabrie126943	MSEN-----EALQIIIEACNGS---GPIARGTV-----
Chylag1491303	-----TIEHVKALVI-GS---EPQLKGTV-----
Clapoll_1869731	-----DYSHVVAIVV-AG---SPALTGTI-----
Chytriomycetes2	-----hvshvvamvv-sa---apeingtl-----
Obemuc1859513	-----DIDHVAMVV-TA---APELNGTI-----
Rhizoclostridium2	-----deehvvalvv-sa---pvlngti-----
Gorhay1188404	KNPI-----EQFNAIVRHITSGDN---KPIAYATL-----
Enthel1467718	KSPT-----EAFAAIIRTIVNGNV---RPVLQGTVRRSAGCGTA
Batrachochytriumd3	kppt-----eaynllvrsilnsga---rpvatgti-----
Batrachochytriums1	kspt-----eaymliirditnggt---rpvtiats-----
Parsed11082034	MDGY-----QAYEKIVTDIVSKDN--AGPLLHGT---R-----
Glopoll1609812	TTTT-----ESFVILVQFVLSTRG---APVVQTNLKNS-----
Synchytriumm	lpae-----qafsrldtdilsngs---phlnt--av-----
Synchytriume	lqpe-----qgfnklvsdvlassg---psltgt--av-----
Chytriomycetes1	mheq-----daytktiydacilsn---gpvarat---t-----
Obemuc1832726	KHAQ-----DAFTQVMYDVCVRAH---GPVSKAT---A-----
Rhizoclostridium1	MHEQ-----DAFTQVMYDVCVRSG---GPAVKAT---A-----
Chylag1383254	KSDQ-----QALHCTLYDVCIRSP--GGPAKKGT---T-----
Clapoll_1821589	KRPQ-----DALDSTLYDVCIKAK---GPVSSGT---A-----
Blyttiomycetes	kkgn-----qafdalikdlrksv---gpvssgt---v-----
Caulochytrium	avd-----aqqkliaqic-qsk---gpkasgt---t-----
Clarepl_1774182	RAEM-----EAFNTVMLEVTQARG---PLINKAT---T-----
Gaesem1531638	KKGR-----EALAVTGDIVKRGS---GPIASGTVRDT-----
Spizellomyces1	kqgr-----qaldavistimkkgg---gpiatgt---t-----
Triarc1169044	KKGR-----DALDIVIGTIMKKGG---GPIATGT---T-----
Fimjon1566472	KQGR-----DALDAVIGLILKKGG---GPIATGT---A-----
Gervar1417039	KQGR-----DALDSLIGLIIKKGG---GPIATGT---A-----
Powellomyces	kqgr-----ealdsligliikkgg---gpiatgt---a-----
Olpidium	-----PEATGIFEKLTDTKL--
Catenaria1	-----raqdgaaapvsrasrrs
Allomyces	-----adsvapfsaaatap---

Catenaria2	-----pvadgvygkltDasq--
Blabri126943	-----TATGGIYSKLTDP TL--
Chylag1491303	-----PDMIPIVEKLT DASL--
Clapol1_1869731	-----PDYDPVIEKLT DTSL--
Chytriomyces2	-----phadelidklt dtsl--
Obemuc1859513	-----PQVTELIEKLT DTSL--
Rhizoclosmatium2	-----pqvdeiteklt dsvl--
Gorhay1188404	-----PANDSITQRLT DTTA--
Enthell1467718	RVLTDGCLIVAGSWLLADRGCVLVARGCWMAQAASNDAVTQRMTDHTL--
Batrachochytriumd3	-----ttsdsvtqr ltdhth--
Batrachochytriums1	-----ttndavtqr ltdhtq--
Parsed11082034	-----PEASGVYSKLT DHTL--
Glopol11609812	-----VQ-MDVTNRLTDPQK--
Synchytriumm	-----pknsaivdr ltdtst--
Synchytriume	-----sknaaivdr ltdast--
Chytriomyces1	-----vkndavldr ltdvsg--
Obemuc1832726	-----VQKDAVLDRLT DVNG--
Rhizoclosmatium1	-----VKNDAVLDRLT DVNG--
Chylag1383254	-----VQADAVLDRLT DTTA--
Clapol1_1821589	-----VKNDAVLDRLT DTHA--
Blyttiomyces	-----aqtdavldr ltdtqa--
Caulochytrium	-----pdakgahnrlt dtsq--
Clarepl_1774182	-----AKTDGVYDKLTNTQL--
Gaesem1531638	-----PQSDAIVDRLT DTSK--
Spizellomyces1	-----pksgdivdr ltdtsk--
Triarc1169044	-----PKNDAITDRLT DTSK--
Fimjon1566472	-----PKSDAIVDRLT DTSK--
Gervar1417039	-----PKSDAIVDRLT DTSK--
Powellomyces	-----pkldaivdr ltdtsk--
Olpidium	Ytgahkarfdd-ngvgrgaagqvdaedatrnlstivsr dpaskqk-ravs
Catenaria1	stmprtsaes-ndsgigesages-sg-----sfgsgsg--
Allomyces	cdaprr-----sksthqlhdss-tkiasss-----sk--
Catenaria2	ytgqhk-----dkpsggsegkg-ytiesplaksr-a-----tgsr--
Blabri126943	YTGQHK-----DKPTGSSGGAS-REVTIEESRTS-RSKSRSRPGSR--
Chylag1491303	YTGSHRERFDSVTGVGRGAAGRDT-VAKTGSLSDIVSRHNPNTTLGSPKV
Clapol1_1869731	YTGTHKNRFPETGVGRGLEGREP-VNTTSNLANLVSRHNPNTLGAFTP

Chytriomycetes2	ytgmhrarfdpvtgqgrglagret-isptadlsaivsrhnsattlgskas
Obemuc1859513	YTGTHKARFDPVTGQGLDGREP-VNPTANLSSIVSRHNTARTLGSKAL
Rhizoclosmatium2	ytgthkerfdpvtgqgrglagrdr-inttanlstivsrhntartlgskgp
Gorhay1188404	YTGTHKNRFDE-NGRGLGMQGRDP-K--TISLSNLANREPADIRG-VNFS
Enthell1467718	YTGTHKNRFDA-SGNGLGMSGRDQ-PSRTNDLAKITNREESNVRG-VPLS
Batrachochytriumd3	ytgthknrfde-agqglglagrdr-hsrtnelskiivrkeading-vpla
Batrachochytriums1	ytgthkgrfgs-ngnglgmagrdr-nsktnelskiivrkeanvrg-vsld
Parsed11082034	YTGSHKERFDE-EGRGKGVSGRNDSSIGVKRLDKLVSRDPAVQNR-AASM
Glopoll1609812	YTGIHKEKSHG-T----MGSVYDLSDSGRESISTIKTTNG-----
Synchytriumm	fpvthknrfed-kglgsqgalna-----ksstg-----ttpt
Synchytriume	fpvthknrfed-hgvlksspgas----reglgksng-----ttpt
Chytriomycetes1	ytgthknrfds-agrglglngrvt-gkstdtlskiivrndapsqqp-laqt
Obemuc1832726	YTGSHKNRFDS-AGRGLGLQGRDT-ISRTDTLGKIVSRDIAVQRP-SVPQ
Rhizoclosmatium1	YTGSSKNRFDS-AGRGLGLQGRDT-INRTDTLSKIVNRDAPLQRS-TTVG
Chylag1383254	YTGTHKSRFDE-NGNGRGLAGRDT-GSKTDRLDKLVSRNDSTT-----
Clapoll_1821589	YTGTHKLRFDA-DGHGRGMEGRDQ-PSKTDRLDKLVNRDGAGT-----
Blyttiomyces	ytgthklrfdde-eghglmagrdr-psktndlakianreatslrg-lpvs
Caulochytrium	ytgthklrfde-egrgrglagrda-paptadlsqildrsgatvrg-vplk
Clarepl_1774182	YTGAHKLRFDE-QGNGRGMGLKE-RE-----
Gaesem1531638	YTGTHKLRFDE-QGHGRGLAGRDR-PAKTDDLSKLVNREPTTVRG-LPVS
Spizellomyces1	ytgthklrfde-agrgrgaegrdr-psatdqlskitnreetsvrg-lpvs
Triarc1169044	YTGTHKLRFDE-AGRGRGAAGRDR-ASATDQLSKITNREETSVRG-LPMS
Fimjon1566472	YTGTHKLRFDD-AGHGRGAAGRDR-PTATADLSQITNREETSVRG-LPVS
Gervar1417039	YTGTHKLRFDE-AGQGRGAAGRDR-PSPTSLSKITNREETSRLG-LPVS
Powellomyces	ytgthklrfde-agqgrgaagrdr-psatsdlskitnreetslrg-lpvs
Olpidium	n-----
Catenaria1	-----slsrsltrsr-----ss
Allomyces	-----sasran-----l
Catenaria2	-----snstsnlld-----as
Blabril26943	-----SASRSGSVSDLTS-----AL
Chylag1491303	M-----
Clapoll_1869731	P-----
Chytriomycetes2	a-----
Obemuc1859513	P-----
Rhizoclosmatium2	l-----
Gorhay1188404	LKPSSSNSSLSNHGSKSNLTTGSKSNLTTGSKSNLTTGSKSNLATKIVQQ

Enthell1467718	AAYGNSNSNMADGRYSTSSITPSIHNS----S-----N-SSHVGNNGTS
Batrachochytriumd3	aspigsprg----sv-----tmsysp
Batrachochytriums1	atdssqskg---yt-----a---at
Parsed11082034	NQTN-----
Glopoll1609812	--RRYSN-----FGQET
Synchytriumm	kspggg-----v
Synchytriume	kspat-----v
Chytriomycetes1	nrqsvsnrrqesqst-----mraptaas
Obemuc1832726	NSRPIT-----TTEKNRTS
Rhizoclosmatium1	GTRRPTTVA-----QADSKQGT
Chylag1383254	-----
Clapoll1_1821589	-----
Blyttiomycetes	adpaaga-----ssasrnat
Caulochytrium	taertan-----ttata--a
Clarepl1_1774182	-----RSN-AG
Gaesem1531638	VDPDAQE-----QS-KP-SS
Spizellomyces1	idpeegd-----kqelt-ss
Triarc1169044	IDPQEKD-----KT-----
Fimjon1566472	IDPQERG-----AS-----
Gervar1417039	IDPNEKS-----SP-----
Powellomyces	idpnekg-----sp-----
Olpidium	-----saealdnkppvk-----kysavrs--snksln
Catenaria1	sgtsfsaara-----psvp
Allomyces	ggaggs-----astrgsqs-nlm
Catenaria2	tgtrg-----stgaln-----kstssprgsk-snly
Blabril126943	AGASISTPRAAAATASFSTLSSTSAGPSA-----TTGHSPRASRTSLAY
Chylag1491303	-----RVATITPPKSPP-----TT-----
Clapoll1_1869731	-----KSPAMSRTASTP-----NRSGS-----
Chytriomycetes2	-----anralspp-----
Obemuc1859513	-----TPHASHPSSPT-----
Rhizoclosmatium2	-----spsssfsasapi-----ia-----
Gorhay1188404	PKKREHDN---IVTASSETLDKQMAKP-----KR-----
Enthell1467718	SGKRGHQS---VVTASSERLDLQSSKP-----KKVGSPVKRSTSNLA
Batrachochytriumd3	kskrahaa---vttmstealdaeanrp-----kkavtsqapr--tvk
Batrachochytriums1	ipkrthqs---vstvsealdakaskp-----kkglpapiagr--ses
Parsed11082034	-----K--RGISASMEAMDAQGPTKSIKNLELPNDASLSH--SRSNSG

Glopol11609812	STKRGF-N--NVVTASTEYLDMNSNKT-----KKQEMYS--SNTQLP
Synchytriumm	kgspvgnk--rsvtesmdklelaanpp-----ksnkalg--smdnms
Synchytriume	klgvsgnk--rgvtestekldmsknpv-----ksnknmg--smd-ma
Chytriomyces1	sisqnkra--svltqseeklenivnap-----kkapvag--rrsqap
Obemuc1832726	TVASGKRQ--SVLTQSEERLENITNAP-----KKTVPVAG--RRATQ-
Rhizoclosmatium1	VVGSSKRP--SMLTNSEERLENQINAP-----KKTPIAG--RRATT-
Chylag1383254	-PTIP-----PISARLEIIATTP-----KK-P-----
Clapol1_1821589	-AASTKRQ--QVLTQSEEQDLAIAQAP-----KK-AIAG--RRAANP
Blyttiomyces	pgkrshas---vvtasseklldtaskp-----kkadarr--sntnla
Caulochytrium	gtrrtatq--rtplgsqgslsastppp-----krvtptp--ststrp
Clarep1_1774182	GQKRQTH---IVTASSERLDLVAHAP-----KRSADSA--SK----
Gaesem1531638	GSKRGHAS---VVTASSEKLDVNAHKP-----KATKPAE--KTKKA-
Spizellomyces1	agkrghss---vvtasserldlasskp-----kssklgs--ntnla-
Triarc1169044	-SKRSHSN---LATASSDRLDQSSSKP-----KSTKKGS--NTNLA-
Fimjon1566472	-AKRSHSN---LVTASSERLDREASKP-----KNTKVGS--NTNLA-
Gervar1417039	-AKRGHSS---VVTASSERLDQAASKP-----KAGRIGG--SNSNL-
Powellomyces	-akrqhsn---vvtasserldnaasqp-----kssklgs--nsnla-
Olpidium	r----aggsrdrpas-----kseaap-
Catenaria1	vpp-----iprsksptrarmslfgaq-----
Allomyces	aat-----aasaahattstrsrpasr-----
Catenaria2	apt-----tssna----kiagskgs-----
Blabri126943	KPT-----ASSTS----RMSLAASG-----
Chylag1491303	-----
Clapol1_1869731	-----
Chytriomyces2	-----
Obemuc1859513	-----
Rhizoclosmatium2	-----
Gorhay1188404	-----
Enthel1467718	N-----IKPSEPTP-----
Batrachochytriumd3	p-----ivkssetl-----
Batrachochytriums1	n-----nklsdptp-----
Parsed11082034	A--SSNGLNKSNSNL-----TRSKSSGL-----
Glopol11609812	KVNFG--SK-----
Synchytriumm	p-----
Synchytriume	s-----
Chytriomyces1	htttkggnytasssl-----assq-----

Obemuc1832726	----QSANYTTSSSL-----ASSQ-----
Rhizoclosmatium1	----HDSSSGNYSTI-----QPKL-----
Chylag1383254	TNRSIHGSSTSI-----
Clapol1_1821589	VPSSKFGSSTSIKS-----STP-----
Blyttiomycetes	akaattparrpnpslagpaassssttrrsnqdlstpastrasradrapa
Caulochytrium	aaaktaaaskaaatk-----
Clarep1_1774182	--P-----
Gaesem1531638	EPK-----P-Y-----
Spizellomyces1	nkpktpqak-----
Triarc1169044	SKSSPA-----
Fimjon1566472	GKPKTAGG----GNA-----
Gervar1417039	NKGSSSNLSKQSSSV-----
Powellomyces	g-----kpkpps-----
Olpidium	-----ksagaprsaaasadknvfdrltdpkgyrg
Catenaria1	---psgdaqatpatgarkhqlgsadfvptvpviprgsvfdrltnprgytg
Allomyces	---tgsrt-nlaagagskhelgsveftptvpsipkgsvfdrltnpskytg
Catenaria2	---lagrt-kgaagtgshttlgsseyvptqpsipkgsvydrlnpkgyta
Blabrie126943	---ATGGS-R-GNLTGSNAKLGSPDYVPTVPSIPKGSVFDRLTNTKGYTG
Chylag1491303	-----PRMQSPRTTNGQSVFDRLSSPTTFTG
Clapol1_1869731	-----EGSLGSAPSSPSARPSVFDRLTSVSTFTG
Chytriomycetes2	-----phertaasssagpsvfdrlnnvksftg
Obemuc1859513	-----SPVRYSEDQGGRESVFDRLNNVSTFTG
Rhizoclosmatium2	-----wgenrsmgsedgkpsvfdrlndvstftg
Gorhay1188404	-----PEGNSVFDRLTDTAKYTG
Enthel1467718	-----LSSLNKRSTSGSMGSSVFERLTDTKAYTG
Batrachochytriumd3	-----lntttkktvgas-sgnvfdrlntnkgytg
Batrachochytriums1	-----ltasakkaavgs-sgnvydrldtdkgytg
Parsed11082034	-----SG-----SSSQLKTTVPQVPAGSVFDRLTDVKKYHG
Glopol1609812	-----Q-NLTSSNSNLNQNGNVFDRLTNTQGYTG
Synchytriumm	-----l-gasksksgsvgsvydrldtdkqytg
Synchytriume	-----l-sasksksgsvgsvydrldthksytg
Chytriomycetes1	-----qslaks--sttasklsvfdrltdssgytg
Obemuc1832726	-----QSLATKNSSVSSSKASVFDRLTNTKDYTG
Rhizoclosmatium1	-----LGTT-----QKLIHDIVQGKRI--
Chylag1383254	-----ASVGKSTGSSVFDRLTNSNGYTG
Clapol1_1821589	-----GSITTLNKSVTGSRTAVFDRLTDTSGYTG

Blyttiomycetes	aasttrrsntdlasgarrtvatpaskgtynasgtnssvfdrltttagytg
Caulochytrium	-----tagkay-aasspaggsvfdrltntagytg
Clarepl_1774182	-----TTAKTGAQKGGTNVYDRLTNTGAYTG
Gaesem1531638	-----TAVTKTSCGQSSKGGSVFDRLTDSSGYTG
Spizellomyces1	-----idksyg--anakggsvfdrltnsgqytg
Triarc1169044	-----AKSEE--YTAKGGSVFDRLTDSNQYTG
Fimjon1566472	-----AAASSYGAS-SSKGGSVFDRLTDSSGYTG
Gervar1417039	-----EAKQSYGTANAKAGGSVFDRLTDTTGYTG
Powellomyces	-----asaqsygtnnpkaggsvfdrltdssgytg
Olpidium	thaqrfd-qgkgrglagrdstskga-gpgayhggdvkdisqilrs--
Catenaria1	thkerfda-dgrgkgkagrvetesvq-----mtlsemvkrf-
Allomyces	thkerfdpatgkgrglagrsqenlgt-----kpldklvhrs-
Catenaria2	thkerfdd-qgkgkgkagrvgddlgt-----kslehlvark-
Blabri126943	SHRERFDE-DGRGRGKAGRVQENVGT-----QSLEKLVSRLN-
Chylag1491303	THKHRFNP-DGTGRGLEGRTGEGAGE-----TVNSLSQITRK--
Clapol1_1869731	SHKHRFNA-DGTGRGKEGRVGDGAGD-----VVSDLSQITRR--
Chytriomycetes2	thkhrrfns-dgtgrgkagrd-----
Obemuc1859513	THKHRFNE-DGTGRGKAGRED-----
Rhizoclostridium2	thkhrrfnp-dgtgrgkegrdpssta-----d---lsqivsark
Gorhay1188404	THKERFNA-DGSGRGIAGRDTVGPY----LYRT---GSSSSITRA--
Enthel1467718	THKHRFND-DGSGRGIDGRDPNAGTS----GKT-----LASILRT--
Batrachochytriumd3	thkerfhg-ssn--sihg-----
Batrachochytriums1	tqkerfgg-sks--sirg-----
Parsed11082034	THKHRFNE-DGSGKGKAGRVQDVGP-----KKLESFLRN--
Glopoll1609812	THKQRFDE-HGNRGLEGREAIKSGTQSIYRGGNVNSLSQILRS--
Synchytriumm	thklrfnd-dgtgrgiagrdspskgg-vgpvrddgqnvndlsqilrr--
Synchytriume	thklrfnd-dgsgrgiagrdspskgg-tgvvrddgqnvndlsqilrr--
Chytriomycetes1	thqhrfna-dgsgrglagrdsaplgkggvtqyrngnvnsqilrs--
Obemuc1832726	AHKHRFNA-DGTGRGLAGRDSAPLGSGGESKYRGGDVKDLKQILRT--
Rhizoclostridium1	-----
Chylag1383254	THKLRFNA-SGTGRGLAGRDSIPK-N-GVGVRGGDVKELSQILRPGF
Clapol1_1821589	SHKHRFNA-DGTGRGAAGREIVSKGH-SVGTYRGGDVKDLSQILRN--
Blyttiomycetes	thklrfna-dgtgrgmagrdapakga-apgayrggdvkdlsqilrs--
Caulochytrium	shkerfna-dgtgrglagreapnksq-apgyrngnvdsqilrt--
Clarepl_1774182	THKLRFDA-SGQGRGLAGRDSAPKGQ-SAGQYRGGDVKDLSQILRN--
Gaesem1531638	SHKERFNS-DGTGRGLSGRDSPSKSG-AAGKYRGGDVKDLSQILRS--

```

Spizellomyces1      thkhrfna-dgsgrgiagrdspakgt-spgsyrggdvkdlsqilrs--
Triarc1169044      AHKHRFNA-DGSGKGIVGRDSPSKGG-GPGTYRGGDVKDLSQILRS--
Fimjon1566472      AHKQRFNA-DGTGKGLAGRDSPAKGG-APGKYRGGDVKDLAQILRS--
Gervar1417039      AHKQRFNA-DGTGRGIAGRDAPAKGG-SPGKYRGGDVKDLSQILRN--
Powellomyces       ahkqrfna-dgtgkglagrdapakgn-spgkyrggdvkdlsqilrn--

```

```
;
```

```
end;
```

```
begin assumptions;
```

```
options deftype=unord;
```

```
end;
```

```
Phylogenetic tree in con file.
```

```
#NEXUS
```

```
[ID: 1928394251]
```

```
begin trees;
```

```

[Note: This tree contains information on the topology,
      branch lengths (if present), and the probability
      of the partition indicated by the branch.]

```

```

tree con_50_majrule =
(Olpidium:0.491849,((Catenaria1:0.636440,(Allomyces:0.616783,(Catenaria2:0.319621,B
labri126943:0.297141):0.71:0.075056):0.51:0.099658):1.00:0.365325,Parsed11082034:0.420
645):1.00:0.220331,(Chylag1491303:0.463140,Clapol1_1869731:0.209358):1.00:0.160893,(
Chytriomycetes2:0.229313,(Obemuc1859513:0.133213,Rhizoclosmatium2:0.249109):1.00:0.121
602):1.00:0.153875):1.00:0.363354,((((Gorhay1188404:0.370528,(Enthel1467718:0.231303
,(Batrachochytriumd3:0.244778,Batrachochytriums1:0.211146):1.00:0.155674):1.00:0.1571
77):0.54:0.072211,Glopoll1609812:0.609138):0.98:0.136199,((((Chytriomycetes1:0.207280,(
Obemuc1832726:0.090743,Rhizoclosmatium1:0.303189):1.00:0.088831):1.00:0.252477,Clapol
1_1821589:0.190135):0.62:0.074434,Chylag1383254:0.286597):1.00:0.172461,Clarep1_17741
82:0.369318):1.00:0.138789,Blyttiomycetes:0.287482,(Gaesem1531638:0.161047,((Spizellom
ycetes1:0.101310,Triarc1169044:0.100769):1.00:0.080855,(Fimjon1566472:0.130326,(Gervar
1417039:0.118654,Powellomyces:0.041193):1.00:0.067198):0.99:0.040848):1.00:0.129354):1.
00:0.127557):0.70:0.072532):0.54:0.066087,(Synchytriumm:0.183318,Synchytriume:0.18148
6):1.00:0.459595):0.73:0.070564,Caulochytrium:0.447358):0.77:0.088088);

```

```

[Note: This tree contains information only on the topology
      and branch lengths (mean of the posterior probability density).]

```

```

tree con_50_majrule =
(Olpidium:0.491849,((Catenaria1:0.636440,(Allomyces:0.616783,(Catenaria2:0.319621,B
labri126943:0.297141):0.075056):0.099658):0.365325,Parsed11082034:0.420645):0.22033
1,((Chylag1491303:0.463140,Clapol1_1869731:0.209358):0.160893,(Chytriomycetes2:0.2293
13,(Obemuc1859513:0.133213,Rhizoclosmatium2:0.249109):0.121602):0.153875):0.363354,
((((Gorhay1188404:0.370528,(Enthel1467718:0.231303,(Batrachochytriumd3:0.244778,Ba
trachochytriums1:0.211146):0.155674):0.157177):0.072211,Glopoll1609812:0.609138):0.1
36199,((((Chytriomycetes1:0.207280,(Obemuc1832726:0.090743,Rhizoclosmatium1:0.303189
):0.088831):0.252477,Clapol1_1821589:0.190135):0.074434,Chylag1383254:0.286597):0.1

```

72461,Clarep1_1774182:0.369318):0.138789,Blyttomyces:0.287482,(Gaesem1531638:0.161
047,((Spizellomyces1:0.101310,Triarc1169044:0.100769):0.080855,(Fimjon1566472:0.130
326,(Gervar1417039:0.118654,Powellomyces:0.041193):0.067198):0.040848):0.129354):0.
127557):0.072532):0.066087,(Synchytriumm:0.183318,Synchytriume:0.181486):0.459595):
0.070564,Caulochytrium:0.447358):0.088088);

end;