

 ATR

(Mucor ambiguus_GAN03386.1:0.2075334290,((((((((((((Schizosaccharomyces pombe_CAB40165.1:0.7034549391,Schizosaccharomyces japonicus yFS275_EEB05355.1:0.5792658717)/1:1.0340565306,Pneumocystis carinii B80_KTW27047.1:0.9455747016)/1:0.2596668923,((((Blumeria graminis f. sp. triticales_CAD6502046.1:0.5125333670,Sclerotinia sclerotiorum 1980 UF-70_EDN95718.1:0.5444890849)/1:0.2196580132,(Neurospora crassa OR74A_EDO65367.2:0.7748023740,(Trichoderma reesei QM6a_EGR46540.1:0.5171162141,Verticillium dahliae VdLs.17_EGY19868.1:0.5387432924)/1:0.1973094812)/1:0.3344395117)/1:0.3548377976,(((Aspergillus nidulans FGSC A4_EAA61621.1:0.5751699168,Coccidioides immitis RS_EAS29766.2:0.5228499701)/1:0.2499452399,Exophiala dermatitidis NIH/UT8656_EHY59053.1:0.8877860016)/1:0.1921737198,(Zymoseptoria tritici IPO323_EGP89591.1:1.1189184035,Bacidia gigantensis_KAG8530063.1:0.7813846432)/1:0.1191853734)/1:0.1396239871)/1:0.2900711187,Tuber melanosporum_CAZ80117.1:0.8730803282)/1:0.1308626779,(Orbilia oligospora ATCC 24927_EGX52537.1:0.2639619628,Arthrobotrys entomopaga_KAF3927530.1:0.2545737028)/1:0.9697723192)/1:0.3110839289)/1:0.2027266280,(Candida albicans SC5314_AOW29815.1:1.5661693015,Saccharomyces cerevisiae S288C_NP_009694.3:2.0229713865)/1:1.2021996932)/1:0.4114423286,((Cryptococcus neoformans var. grubii H99_AFR95585.2:1.2294874963,((((Coprinospora cinerea okayama7#130_EAU84196.2:1.0055133758,(Serpula lacrymans var. lacrymans S7.9_EGO27933.1:0.4994518452,Amanita muscaria Koide BX008_KIL70329.1:0.5071540806)/1:0.1575479562)/1:0.2304338825,Ramaria rubella_KAF8592595.1:0.8908178702)/1:0.2389886923,Rhizoctonia solani_QRW15803.1:1.2446815368)/1:0.1273369560,Dacryopinax primogenitus_EJU06214.1:0.9980790165)/1:0.2270029358,Wallemia ichthyophaga EXF-994_EOR00774.1:1.3512836518)/0.984:0.0976772760)/1:0.1527579742,(((Malassezia globosa CBS 7966_EDP44639.1:1.0494310079,Ustilago maydis 521_KIS71202.1:0.8839445260)/1:0.2123459256,Tilletiaria anomala UBC 951_KDN44907.1:1.1793939909)/1:0.4268356168,((Puccinia graminis f. sp. tritici CRL 75-36-700-3_EFP86122.1:0.6440062988,Melampsora larici-populina 98AG31_EGG02755.1:0.6297727162)/1:0.8828123746,Mixia osmundae IAM 14324_KEI39694.1:1.2504867143)/1:0.2110166476)/0.581:0.0852740122)/1:0.4783105338)/0.998:0.0969673766,((((Batrachochytrium dendrobatidis JAM81_EGF84391.1:1.6239111175,Dimargaris cristalligena_RKP36998.1:1.5662776416)/0.986:0.1164397536,((((Neocallimastix sp. JGI-2020a_KAG4101513.1:0.0046821164,Neocallimastix californiae_ORY26196.1:0.0011695231)/1:0.1205433196,Anaeromyces robustus_ORX81535.1:0.1010521000)/0.958:0.0293410721,Piromyces finnis_ORX56486.1:0.1115289017)/1:0.9082829184,Basidiobolus meristosporus CBS 931.73_ORX89906.1:0.6840630102)/1:0.1308380333,((((Spizellomyces punctatus DAOM BR117_KND02053.1:0.0399580224,Spizellomyces sp. 'palustris'_TPX68250.1:0.0432274854)/1:0.5126898093,Powellomyces hirtus_TPX55724.1:1.2377238463)/1:0.3971453754,(Rhizoclostridium globosum_ORY51967.1:0.4432212634,Chytridiomyces confervae_TPX75625.1:0.5166400309)/1:0.7487184186)/0.688:0.1091491060,(Synchytrium microbalum_TPX33900.1:0.4065807118,Synchytrium endobioticum_TPX39347.1:0.3991600926)/1:1.1819322736)/1:0.1807135185)/1:0.0934242336)/0.928:0.0560592209,Gonapodya prolifera JEL478_KXS21067.1:1.4588959157)/1:0.1330178979,((((((((Dissophora ornata_KAF8940517.1:0.2007154857,Dissophora globulifera_KAG0312109.1:0.2262034393)/1:0.1426534636,((Mortierella sp. NVP85_KAF9364890.1:0.2650403676,Mortierella sp. GBA43_KAG0246449.1:0.2510551237)/1:0.1929525260,Gamsiella multivariata_KAG0364892.1:0.3036381802)/1:0.0463833117)/0.991:0.0363864730,((((Entomortierella lignicola_KAF8984393.1:0.0040594931,Haplosporangium sp. Z 27_KAF9205154.1:0.0055522547)/1:0.1336554238,((Mortierella sp. AD010_KAF9175721.1:0.0000020792,Mortierella sp. AD011_KAF9403696.1:0.0000025009)/1:0.0177350357,Entomortierella

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 AD094_KAF9354246.1:0.0392489156)/1:0.0799411121)/1:0.0367166089,Mortierella sp.
 AM989_KAF9115524.1:0.1454686319)/1:0.0364241587,Entomortierella
 beljakovae_KAF9435330.1:0.1962849758)/1:0.1199106781,Lobosporangium
 transversale_ORZ11293.1:0.3813184239)/1:0.0799883040)/1:0.1367144314,
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 11_KAF9192364.1:0.0000023085)/1:0.0282109278,Mortierella
 polycephala_KAG0263666.1:0.0376946860)/1:0.4080070303,(Mortierella
 antarctica_KAF9988600.1:0.2265124437,Mortierella sp.
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 schmuckeri_KAF9155074.1:0.0180156480)/1:0.0351081652,((Mortierella sp.
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 hygrophila_KAF9550394.1:0.0146520191,Linnemannia
 hyalina_KAG9067389.1:0.0161617121)/1:0.0047999721)/1:0.0377802514,Linnemannia
 elongata
 AG-77_OAQ35638.1:0.0329474910)/1:0.0264169364)/1:0.0462395502,Linnemannia
 gamsii_KAG0293331.1:0.1371710564)/1:0.1142463103,((Mortierella sp.
 14UC_KAF9122997.1:0.0330857116,Linnemannia
 zychae_KAF9908954.1:0.0476954787)/1:0.0653382583,(Linnemannia
 exigua_KAG0273107.1:0.0410642606,Mortierella sp.
 AD032_KAG0381061.1:0.0347811848)/1:0.0738384923)/1:0.1153284524)/1:0.1590805817,
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 NVP41_KAG0206912.1:0.0012436787)/0.999:0.0018205156,Mortierella sp.
 GBA35_KAF9100333.1:0.0043752592)/1:0.2208059933)/1:0.3802752072)/1:0.1273578410,
 Lunasporangiospora
 selenospora_KAF9584971.1:0.5936770422)/1:0.0659660774,Gryganskiella
 cystojenkinii_KAG0055729.1:0.7323089725)/1:0.0875020456,(((Haplosporangium
 bisporale_KAF9025840.1:0.0005276932,Podila verticillata NRRL
 6337_KFH65039.1:0.0010418554)/1:0.1055973554,(Podila
 horticola_KAF9311094.1:0.0399414571,(Podila
 clonocystis_KAG0013511.1:0.0415039514,((Podila
 clonocystis_KAG0025132.1:0.0360783496,Podila
 epicladia_KAG0092823.1:0.0361896509)/0.826:0.0094773870,Podila
 minutissima_KAG0351390.1:0.0278995878)/1:0.0104821431)/1:0.0111876354)/
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 epigama_KAF9427653.1:0.5169478707)/0.954:0.0758259597,Podila
 humilis_KAG0349509.1:0.5792243819)/1:0.3337307249)/1:0.3069217940,Actinomortiere
 lla ambigua_KAG0264158.1:1.2639028903)/1:1.0046313523)/1:0.1314712080)/
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 70_EDO00751.1:0.5937485002)/1:0.1883704927,Verticillium dahliae
 VdLs.17_EGY14732.1:0.7315275754)/1:0.3527538988,((Aspergillus nidulans FGSC
 A4_EAA65357.1:0.6878441901,Coccidioides immitis
 RS_KJF61358.1:0.5155045126)/1:0.2396279430,Exophiala dermatitidis
 NIH/UT8656_EHY53217.1:1.2191956360)/1:0.1630581633)/1:0.6956296922,Pneumocystis
 carinii B80_KTW28981.1:1.6346066966)/1:0.3771803470,Yarrowia lipolytica
 CLIB122_CAG80568.1:3.4146704659)/0.864:0.1792487746,(Cryptococcus neoformans
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 meristosporus CBS 931.73_ORX90217.1:1.3031757302)/1:0.3760503934,(Spizellomyces
 punctatus DAOM BR117_KNC99195.1:0.0580833911,Spizellomyces sp.
 'palustris'_TPX67003.1:0.0493663770)/1:1.3320202659)/1:0.2370088932,
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 confervae_TPX75368.1:0.6347852469)/1:1.4646284152)/1:0.4465257583)/
 1:1.8871021585,(Encephalitozoon intestinalis ATCC
 50506_ADM11106.1:4.1194611241,Mitosporidium
 daphniae_KGG52004.1:3.1171738660)/0.927:0.2329652165)/0.999:0.2207149940,Rozella
 allomyces CSF55_EPZ33635.1:2.1140353380)/0.999:0.1873251851,(((Allomyces
 macrogynus ATCC 38327_KNE56447.1:0.0000029282,Allomyces macrogynus ATCC
 38327_KNE56448.1:0.0000021349)/1:1.3854029242,Catenaria anguillulae
 PL171_ORZ38038.1:1.3629837514)/1:1.5152653034,Smittium
 culicis_OMJ14013.1:2.2384988956)/0.91:0.1761422112)/0.992:0.0793419256,

(((((sp_Q13535_ATR_HUMAN:0.0614467346, sp_Q9JKK8_ATR_MOUSE:0.0597514663)/
1:0.8713933270, Pomacea
canaliculata_PVD19877.1:0.9878758726)/1:0.3155026287, Amphimedon
queenslandica_XP_019850314.1:1.6759504076)/1:0.2623733046, Drosophila
melanogaster_NP_523369.2:2.5764220897)/1:0.5334583590)/0.996:0.0815533536, Thamno
cephalis
sphaerospora_RKP09385.1:1.7241966881)/0.804:0.0725897147)/1:0.8010466047,
(Umbelopsis isabellina_KAG2174128.1:0.5307723311, Umbelopsis
vinacea_KAG2180550.1:0.5984637341)/1:1.3911608640)/1:0.5199864196, (Hesseltinella
vesiculosa_ORX44443.1:1.1440813577, Absidia
repens_ORZ05245.1:1.3117356007)/1:0.8647364776)/0.958:0.1341092268,
(((Apophysomyces ossiformis_KAF7722872.1:0.2023111439, ((Apophysomyces sp.
BC1015_KAG0169780.1:0.0000020852, Apophysomyces sp.
BC1021_KAG0179297.1:0.0034624014)/0.131:0.0000024995, Apophysomyces sp.
BC1034_KAG0189763.1:0.0000021222)/1:0.2391456308)/1:0.9715037293, Syncephalastrum
racemosum_ORY98518.1:1.6657180810)/1:0.1201098856, Mucor
circinatus_KAG2216150.1:1.2546985268)/0.88:0.1021973299)/1:0.8067280336,
(Rhizopus delemar RA 99-880_EIE82128.1:0.4191605427, (Rhizopus microsporus ATCC
52813_PHZ08210.1:0.0322202032, Rhizopus
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1:0.2689220450, (Mucor saturninus_KAG2194555.1:0.7272102384, Thamnidium
elegans_KAG2234017.1:0.8486368460)/1:0.4235645583)/1:0.2884348696, Choanephora
cucurbitarum_OBZ87784.1:1.5300864880)/1:0.5001204953, (Parasitella
parasitica_CEP14753.1:0.2588941987, Mucor
plumbeus_KAG2215177.1:0.2920619796)/1:0.1840487918)/1:0.5151785451, (Mucor
lusitanicus_KAF1798393.1:0.3960173380, Mucor
lusitanicus_KAF1806238.1:0.0170573260)/1:0.2243802318);

CENPS

(Mucor ambiguus_GAN09845.1:0.0627346441, (((((((((((Rhizophagus
clarus_GES89132.1:0.0857887354, (Rhizophagus irregularis DAOM 181602=DAOM
197198_POG76125.1:0.0112417972, Rhizophagus
diaphanus_RGB42141.1:0.0042521100)/1:0.0553537363)/0.968:0.0430996038, Glomus
cerebriforme_RIA92602.1:0.0706166009)/0.738:0.1176909359, (Gigaspora
margarita_KAF0504808.1:0.0000025914, Gigaspora
rosea_RIB08793.1:0.0309896872)/1:0.6591493826)/1:0.5704370372, ((((((Dissophora
ornata_KAF8930445.1:0.3052369981, Podila
epigama_KAF9414437.1:0.2390810284)/0.989:0.1233681427, (Mortierella sp.
AD010_KAF9172271.1:0.0063647590, (Mortierella sp.
AD094_KAF9352856.1:0.0530069741, Entomortierella
chlamydospora_KAG0000849.1:0.0076277906)/1:0.0389338408)/1:0.1072219768)/
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zychae_KAF9909444.1:0.1317263391, (Linnemannia exigua_KAG0270810.1:0.1476575525,
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pseudoplumigaleata_RKP23070.1:0.8966530357)/0.808:0.0202898246)/1:0.2027698417)/
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77_OAQ35186.1:0.0450782694)/0.942:0.0418734483)/1:0.1155398821, (Mortierella sp.
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reniformis_KAG0000688.1:0.0181253565)/1:0.1281303791)/0.498:0.0337511185, Mortier
ella sp.
GBA30_KAG0211812.1:0.0900373043)/0.938:0.0455424688)/0.965:0.0312094616, Mortiere
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verticillata_NRR1 6337_KFH63577.1:0.2804975058)/1:0.3896570237, Actinomortierella
ambigua_KAG0261400.1:0.1366220174)/1:0.3358694694)/0.494:0.0455294239,
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oligospora ATCC 24927_EGX43039.1:0.1538217945, Drechslerella
brochopaga_KAF3915630.1:0.0732837698)/0.221:0.0150115184, Saccharomyces
cerevisiae_NP_076910.1:1.8987226853)/1:0.4029748123)/0.812:0.0906312516, (Tuber
melanosporum_CAZ81356.1:0.2737087185, ((Neurospora crassa

OR74A_EAA32120.2:0.1602089939,(Trichoderma reesei
QM6a_EGR52138.1:0.1617215229,Verticillium dahliae
VdLs.17_EGY17651.1:0.3138241679)/0.993:0.1125739131)/1:0.2272132627,Sclerotinia
sclerotiorum 1980
UF-70_EDN91003.1:0.2837326706)/0.986:0.1108700002)/0.965:0.1262713185)/
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IP0323_EGP92241.1:0.7747421999)/1:0.1811608084,(Pneumocystis carinii
B80_KTW30176.1:0.4972738342,Absidia
repens_ORZ18537.1:0.9933388174)/0.999:0.3013870883)/0.126:0.0000020688,
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14324_KEI41410.1:0.6367354261)/0.92:0.1882840260,(Puccinia graminis f. sp.
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98AG31_EGG03272.1:0.4123913207)/1:0.6813375109)/0.991:0.2639959917,(Coccidioides
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globosum_ORY51605.1:0.3601553723,(Chytridiomycetes
confervae_TPX58938.1:0.1483965559,Chytridiomycetes
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38327_KNE62640.1:0.0015100851,Allomyces macrogynus ATCC
38327_KNE62641.1:0.4244919057)/0.274:0.0090226528,Allomyces macrogynus ATCC
38327_KNE65671.1:0.0874161565)/1:0.4984701800,Catenaria anguillulae
PL171_ORZ30379.1:0.8031618130)/1:0.4371108106,Caenorhabditis
elegans_NP_001254386.1:0.9452392209)/0.846:0.1211762635,(((Homo
sapiens_NP_954988.1:0.1491953723,Mus
musculus_NP_081539.1:0.1855227543)/1:0.5751270060,Amphimedon
queenslandica_XP_003386995.1:0.7288023789)/0.972:0.1788774543,Pomacea
canaliculata_PVD36969.1:0.8987950496)/0.494:0.0562542329)/1:0.1436717615,Gonapodytes
prolifera
JEL478_KXS12335.1:0.7787249862)/0.673:0.0435798615)/0.999:0.0488132043)/
0.412:0.0289465874,(Entomophthora muscae_KAF7751029.1:0.6604556691,Conidiobolus
coronatus NRRL
28638_KXN66422.1:0.9271963837)/0.99:0.2414091297)/0.837:0.0567670681,
(Batrachochytrium dendrobatidis JAM81_EGF80430.1:0.9556572442,(Linderina
pennsylvanica_ORX73231.1:0.3012221869,Coemansia reversa NRRL
1564_PIA16112.1:0.4216861394)/1:0.5461287232)/0.884:0.2583115476)/
0.887:0.0663777423)/0.995:0.1784324654,Phycomyces blakesleeana NRRL
1555_OAD66028.1:0.6861051334)/0.803:0.0920411948,Syncephalastrum
racemosum_ORY93417.1:0.7684643013)/0.769:0.0843316345,(Umbelopsis
vinacea_KAG2179595.1:0.3226613220,Umbelopsis
isabellina_KAG2185905.1:0.0000025855)/1:0.5238713278)/0.793:0.0813736332,Mucor
circinatus_KAG2225422.1:0.4855586934)/0.972:0.1278601215,(Absidia
glaucia_SAL95749.1:0.3528981455,Absidia
repens_ORZ17860.1:0.6360654380)/1:0.6878118193)/0.699:0.0808498142,(((Rhizopus
delemar RA 99-880_EIE92310.1:0.3619517143,(Rhizopus microsporus ATCC
52813_PHZ16503.1:0.0000022064,Rhizopus
azygosporus_RCH90432.1:0.0741988792)/1:0.1545230023)/1:0.3360137060,Thamnidium
elegans_KAG2229681.1:0.3787966611)/0.602:0.0835007247,Choanephora
cucurbitarum_OBZ87936.1:0.3631528507)/0.819:0.0710785334)/1:0.1875649847,
(Parasitella parasitica_CEP19315.1:0.3455083288,Mucor
plumbeus_KAG2212801.1:0.1886752420)/0.768:0.0373152230)/0.595:0.0568455894,Mucor
lusitanicus_KAF1798576.1:0.1341692895);

CENPX

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glaucia_SAM08177.1:0.2821591235,Absidia
repens_ORZ20697.1:0.4352071575)/0.999:0.4476533621,(Hesseltinella
vesiculosa_ORX49089.1:0.3745694457,Caenorhabditis
elegans_NP_501398.1:3.5114706179)/0.999:0.7035360636)/0.969:0.2368418684,
(Melampsora larici-populina_98AG31_EGG05239.1:1.7422255321,Entomophthora
muscae_KAF7758127.1:1.8228189242)/0.68:0.2926038282)/0.145:0.0066955533,
((((Rhizopus delemar_RA_99-880_EIE82837.1:0.2004711425,Rhizopus
azygosporus_RCH99043.1:0.5603047104)/1:0.6368545107,Syncephalastrum
racemosum_ORY93209.1:0.8885163297)/0.427:0.0793859774,(((Mucor
lusitanicus_KAF1799744.1:0.5218649651,Mucor
plumbeus_KAG2206193.1:0.2990648773)/0.92:0.1569157851,Choanephora
cucurbitarum_OBZ82774.1:0.9805007900)/0.525:0.1278991082,(Mucor
saturninus_KAG2192325.1:1.9679015469,Thamnidium
elegans_KAG2234512.1:0.5559757433)/0.956:0.3532463372)/0.919:0.2023612422)/
1:0.3436824125,((Mucor circinatus_KAG2223131.1:0.9990831295,(Rhizoclostridium
globosum_ORY51358.1:0.4504133213,Chytrium
confervae_TPX78026.1:0.6136077190)/1:1.3043828793)/0.125:0.0000029343,Phycomyces
blakesleei_NRR1
1555_OAD68882.1:1.4289004716)/0.86:0.4053190286)/0.967:0.2033596710)/
0.999:0.2306385667,((((((((((((Haplosporangium
gracile_KAF8929660.1:0.0216557802,Linnemannia
schmuckeri_KAF9148507.1:0.0165117958)/0.993:0.0314301563,((Mortierella sp.
GBA39_KAF9131213.1:0.0000023686,Mortierella
hygrophila_KAF9544877.1:0.0171043568)/0:0.0000026553,Linnemannia
hyalina_KAG9072522.1:0.0102771205)/0.987:0.0250545789,Linnemannia elongata AG-
77_OAQ24099.1:0.0379557268)/0.999:0.0501054370)/1:0.2367669064,Linnemannia
gamsii_KAG0290685.1:0.1425615959)/0.991:0.0447612539,((Mortierella sp.
14UC_KAF9130353.1:0.0423776493,Linnemannia
zychae_KAF9910780.1:0.0539157934)/1:0.0468637677,(Linnemannia
exigua_KAG0281456.1:0.0721712122,Mortierella sp.
AD032_KAG0380722.1:0.0320250323)/1:0.0760662441)/1:0.0934539057)/1:0.1297389969,
(Mortierella sp. AD031_KAF9088336.1:0.0000023575,Mortierella sp.
NVP41_KAG0218095.1:0.0053086646)/1:0.1817299267)/1:0.3042371934,
((((Haplosporangium sp. Z 11_KAF9177017.1:0.0000024876,Haplosporangium sp. Z
767_KAF9194668.1:0.0000027403)/0.966:0.0184923540,Mortierella
polycephala_KAG0266589.1:0.0450326130)/1:0.5372486436,(Mortierella
antarctica_KAF9989753.1:0.2609389432,Mortierella sp.
GBA30_KAG0205827.1:0.2812668266)/0.889:0.0784592636)/1:0.1203043203,Gryganskiell
a
cystojenkinii_KAG0046410.1:0.2696978969)/1:0.0951840691)/0.403:0.0253854865,Diss
ophora globulifera_KAG0317254.1:0.4274686193)/0.914:0.0806682925,((Dissophora
ornata_KAF8930711.1:0.1734012976,Modicella
reniformis_KAF9951147.1:0.0799565347)/0.725:0.1215211994,((((Entomortierella
lignicola_KAF8985838.1:0.0163159334,Haplosporangium sp. Z
27_KAF9176959.1:0.0000023181)/1:0.2531033618,Entomortierella
beljakovae_KAF9436336.1:0.1884643670)/0.815:0.0326135837,(Mortierella sp.
AD010_KAF9169763.1:0.0930248708,(Mortierella sp.
AD094_KAF9354990.1:0.0347529071,Entomortierella
chlamydospora_KAF9995849.1:0.0124676418)/0.994:0.0250414170)/1:0.0882023347)/
0.903:0.0663290411,Lobosporangium
transversale_ORZ28650.1:0.5489968205)/0.986:0.0799734460,((Mortierella sp.
NVP85_KAF9362793.1:0.1227001945,Mortierella sp.
GBA43_KAG0213116.1:0.2116246692)/1:0.2927793261,Gamsiella
multidivariata_KAG0366028.1:0.2084621919)/0.993:0.0729913927)/1:0.1466643544)/
0.901:0.0616555093)/0.783:0.1095957245,Lunaspangiospora
selenospora_KAF9584776.1:0.6014049465)/0.951:0.0781783239,(Actinomortierella
wolfii_KAG0238001.1:0.1866205972,Actinomortierella
ambigua_KAG0249865.1:0.1836334600)/1:0.6485587538)/1:0.2438318752,Podila
epigama_KAF9426970.1:0.2791438759)/0.982:0.1708837749,((((Haplosporangium
bisporale_KAF9009163.1:0.0000023930,Podila verticillata_NRR1
6337_KFH68494.1:0.0000028692)/1:0.1921621912,Podila
clonocystis_KAG0020060.1:0.0323306628)/1:0.0309876671,Podila

epicladia_KAG0094925.1:0.0598810049)/0.797:0.0093421142, Podila
minutissima_KAG0346326.1:0.0382012882)/0.275:0.0058208814, Podila
horticola_KAF9321049.1:0.1083229619)/0.994:0.1382995709, Podila
humilis_KAG0330786.1:0.6438522501)/0.18:0.0108853294)/1:0.8026081690, ((Allomyces
macrognus ATCC 38327_KNE60531.1:0.9154947244, Catenaria anguillulae
PL171_ORZ38204.1:0.7573235828)/1:0.9021321916, (Gonapodya prolifera
JEL478_KXS18439.1:1.3236623750, Basidiobolus meristosporus CBS
931.73_ORX88873.1:0.8408192352)/0.248:0.0679111393)/0.997:0.3538346029)/
0.28:0.0411966659)/0.966:0.1749211688, (Umbelopsis
isabellina_KAG2173662.1:0.1929547241, Umbelopsis
vinacea_KAG2186571.1:0.0268037653)/1:0.8322567576)/0.683:0.1681589409,
((((Neurospora crassa OR74A_EAA33966.2:0.7811922981, (Arthrobotrys
entomopaga_KAF3913125.1:0.1296918863, Drechslerella
brochopaga_KAF3926140.1:0.1956174720)/1:1.0690163887)/1:0.7096689442,
(((Schizosaccharomyces japonicus
yFS275_EEB07375.1:0.1906492341, Schizosaccharomyces
pombe_NP_588439.1:0.4784400475)/1:1.4024882672, (Pneumocystis carinii
B80_KTW28930.1:1.1074207239, Saccharomyces
cerevisiae_NP_878060.1:3.4056732203)/0.384:0.2568364508)/0.489:0.1843535237, Neol
ecta irregularis
DAH-3_OLL22519.1:1.0842861209)/0.822:0.2888512031)/1:0.3180093487, ((Homo
sapiens_NP_659435.2:0.5568239355, Mus
musculus_NP_001334540.1:0.0083028308)/1:1.0555020558, Amphimedon
queenslandica_XP_019849221.1:1.2558232931)/0.999:0.7198760098)/0.703:0.154177367
9, Conidiobolus coronatus NRRL
28638_KXN66206.1:2.1764160748)/0.932:0.2279300793)/1:0.7756581791, Gigaspora
margarita_KAF0513132.1:0.8410363379)/0.995:0.3818736713, Glomus
cerebriforme_RIA86267.1:0.1055962056)/0.835:0.0685043738, (Rhizophagus
irregularis DAOM 181602=DAOM 197198_POG66696.1:0.0202967369, Rhizophagus
diaphanus_RGB40196.1:0.1362153236)/1:0.0945902926);

DPOLN

(Mortierella sp. GBA39_KAF9133876.1:1.0263369518, (Mortierella sp.
GBA39_KAF9134845.1:0.7862621696, (Podila clonocystis_KAG0018810.1:0.2411104866,
((Apophysomyces sp. BC1015_KAG0161972.1:0.0000029962, Apophysomyces sp.
BC1034_KAG0194724.1:0.0000023241)/1:0.2373810492, Linnemannia
gamsii_KAG0293379.1:0.2846111741)/0.994:0.2313993692)/1:0.6452525730)/
0.462:0.1479835414, (((((((Spizellomyces punctatus DAOM
BR117_KND02903.1:0.0483910616, Spizellomyces sp.
'palustris'_TPX62729.1:0.0656143774)/1:0.5886765918, Powellomyces
hirtus_TPX57778.1:0.7346512773)/1:0.2187624398, Blyttomyces
helicus_RK083809.1:0.6888812373)/0.735:0.0959490138, Blyttomyces
helicus_RK084801.1:0.3170706739)/1:0.2308648085, Gonapodya prolifera
JEL478_KXS16810.1:0.9757098254)/0.912:0.1119918309, (Synchytrium
microbalum_TPX37004.1:0.2849976516, Synchytrium
endobioticum_TPX50567.1:0.2437497226)/1:0.5927085071)/1:0.8125404858, (Homo
sapiens_NP_861524.2:0.2289971970, Mus
musculus_NP_862905.1:0.1667851117)/1:1.9572818223)/1:1.0669240180);

EME1

(Rhizophagus clarus_GES74087.1:0.0768922512, (((((((Absidia
glauc SAM02303.1:0.5584495318, Absidia
repens_ORZ20795.1:0.5087838266)/1:0.6104812184, ((Apophysomyces
ossiformis_KAF7725982.1:0.6118008149, Phycomyces blakesleeianus NRRL
1555_OAD73828.1:0.6561616064)/0.999:0.1120670690, (Mucor
circinatus_KAG2221402.1:0.7248437127, Rhizopus microsporus ATCC

52813_PHZ14561.1:1.2167002624)/0.581:0.1164821855, Synccephalastrum
racemosum_ORZ03210.1:0.9221624687)/0.97:0.1162497021)/0.991:0.1218380340)/
1:0.4909736882, (Bifiguratus adelaidae_OZJ05768.1:1.3721746508, ((Jimgerdemannia
flammicorona_RUP43285.1:0.2399809439, Jimgerdemannia
flammicorona_RUP50704.1:0.6660417814)/0.768:0.0730224774, Jimgerdemannia
flammicorona_RUP50114.1:0.1181547688)/1:1.8324997129)/0.987:0.2726436640)/
0.944:0.0825850216, (((((((Malassezia globosa CBS
7966_EDP44141.1:1.4647190546, Ustilago maydis
521_KIS70129.1:1.2902654517)/1:0.4039990392, Entomophthora
muscae_KAF7741469.1:2.4223259082)/0.425:0.2371928686, Paramicrosporidium
saccamoebae_PJF17826.1:2.6730376604)/0.855:0.1413053046, (((((Homo
sapiens_NP_689676.2:0.1897419864, Mus
musculus_NP_808420.1:0.3089997857)/1:1.0175556513, Amphimedon
queenslandica_XP_019862746.1:1.3355542566)/0.974:0.1705478876, Pomacea
canaliculata_XP_025099763.1:1.6244378870)/0.876:0.1763354506, Drosophila
melanogaster_NP_610611.1:2.6337655088)/0.997:0.3167351184, (Monosiga brevicollis
MX1_XP_001747395.1:1.3203383658, Salpingoeca
rosetta_XP_004998646.1:1.0452386540)/1:0.6244988876)/1:0.3990816730)/
0.903:0.0693062898, (Coemansia reversa NRRL
1564_PIA14598.1:1.8190173276, Dimargaris
cristalligena_RKP36081.1:1.7038854265)/1:0.4129640489)/0.847:0.1236758483, Allomyces
macrognus ATCC 38327_KNE55588.1:1.8610201208)/0.558:0.0726772753,
(Thamnocephalis sphaerospora_RKP05774.1:0.8049730654, Synccephalis
pseudolumigaleata_RKP26398.1:1.2034222120)/1:0.9720828401)/1:0.1774313432,
((((Orbilbia oligospora ATCC 24927_EGX45981.1:0.4645099906, Drechslerella
brochopaga_KAF3924491.1:0.3238437427)/1:0.9169770946, Coccidioides immitis
RS_KJF60424.1:1.3074445812)/0.905:0.2160463901, Pneumocystis carinii
B80_KTW31514.1:1.7158135470)/1:0.2636893124, ((((((Haplosporangium
bisporale_KAF8928400.1:0.0033553085, Podila verticillata NRRL
6337_KFH61956.1:0.0073053484)/1:0.1678082672, ((Podila
horticola_KAF9316133.1:0.1427534990, Podila
clonocystis_KAG0013941.1:0.1406384470)/1:0.0325290267, (Podila
epicladia_KAG0095201.1:0.1086225002, Podila
minutissima_KAG0346773.1:0.0469452497)/1:0.0505812516)/1:0.0897376454)/
1:0.2147713032, Podila
humilis_KAG0341931.1:0.7158461181)/1:0.4508280890, Gryganskiella
cystojenkinii_KAG0044786.1:1.0091796352)/0.812:0.1155329790,
(((((((Haplosporangium gracile_KAF8943063.1:0.0762905579, Linnemannia
schmuckeri_KAF9153982.1:0.0566262625)/1:0.0600002213, (Mortierella sp.
GBA39_KAF9144632.1:0.0307879862, (Mortierella
hygrophila_KAF9548733.1:0.0436423956, Linnemannia
hyalina_KAG9064818.1:0.0409451041)/0.828:0.0065164439)/1:0.0946975420)/
1:0.0341719578, Linnemannia gamsii_KAG0288267.1:0.1942147632)/1:0.1265150877,
((Mortierella sp. 14UC_KAF9124098.1:0.0871395980, Linnemannia
zychae_KAF9911798.1:0.1511189225)/1:0.1297025220, (Linnemannia
exigua_KAG0273318.1:0.0767477109, Mortierella sp.
AD032_KAG0367393.1:0.0722841667)/1:0.0848826077)/1:0.1099535986)/1:0.5577746951,
Modicella reniformis_KAF9940289.1:0.6233607022)/0.998:0.1323390283,
((Haplosporangium sp. Z 11_KAF9181252.1:0.0011752001, Haplosporangium sp. Z
767_KAF9183603.1:0.0000024283)/1:0.0910229387, Mortierella
polycephala_KAG0250925.1:0.0695785025)/1:0.4892953102)/0.978:0.0754731963, Lunasp
orangiospora
selenospora_KAF9582611.1:1.0777878623)/0.988:0.1063599008)/0.977:0.1080288936,
(Actinomortierella wolfii_KAG0227374.1:0.2442817137, Actinomortierella
ambigua_KAG0259118.1:0.4697811957)/1:0.8431711778)/1:0.5517106312)/
0.937:0.1186602052)/0.994:0.1005130100, (((Batrachochytrium dendrobatidis
JAM81_EGF82095.1:1.6141625705, (Spizellomyces punctatus DAOM
BR117_KND04284.1:0.0845683495, Spizellomyces sp.
'palustris'_TPX69605.1:0.0789488011)/1:1.1107906331)/0.957:0.2150716514, Chytrium
yces confervae_TPX77057.1:1.5996695959)/0.999:0.1644241524, Gonapodya prolifera
JEL478_KXS11888.1:1.6370133874)/0.56:0.0660577394, (((Neocallimastix sp. JGI-
2020a_KAG4089999.1:0.0000026926, Neocallimastix
californiae_ORY56272.1:0.0035039820)/1:0.4105595094, Anaeromyces
robustus_ORX76893.1:0.3106484767)/0.931:0.0866188732, Piromyces

finnis_ORX51757.1:0.2420648535)/1:1.8202929695,Olpidium
bornovanus_KAG5458601.1:1.8219847562)/0.989:0.2931120429)/0.992:0.1068808434)/
1:0.1815400557)/0.999:0.1913507327,Basidiobolus meristosporus CBS
931.73_ORY07633.1:1.4135446864)/0.898:0.1527407485,(Jimgerdemannia
flammicorona_RUP46178.1:0.3143550248,Endogone sp. FLAS-
F59071_RUS21004.1:0.3519278547)/1:0.6054443411)/1:0.3457414016,Geosiphon
pyriformis_KAG9290570.1:0.6430694833)/1:0.2353994953,((Gigaspora
margarita_KAF0407987.1:0.0355383211,Gigaspora
rosea_RIB19150.1:0.1880940851)/1:0.3171731391,Diversispora
epigaea_RHZ46109.1:0.4788049626)/1:0.1325031928)/1:0.4960933874,Glomus
cerebriforme_RIA93270.1:0.1984561902)/1:0.0786813880,Rhizophagus irregularis
DAOM 181602=DAOM 197198_POG73572.1:0.0531154817);

ERCC1

(Mucor ambiguus_GAN07378.1:0.0969835722,((((((((Rhizophagus
clarus_GES98699.1:0.0304240009,((Rhizophagus irregularis DAOM 181602=DAOM
197198_POG66328.1:0.0033771603,Rhizophagus
diaphanus_RGB34242.1:0.0142492791)/0.793:0.0223003906,Glomus
cerebriforme_RIA88379.1:0.2466317085)/0.741:0.0334921604)/1:0.4534619831,
((Gigaspora margarita_KAF0442096.1:0.0107144181,Gigaspora
rosea_RIB08303.1:0.0014906323)/1:0.2158678129,Diversispora
epigaea_RHZ57157.1:0.4139635908)/1:0.1489847637)/0.993:0.1189368072,Geosiphon
pyriformis_KAG9293063.1:0.5259741462)/1:0.9204077255,
((((((((Schizosaccharomyces pombe_CAA20735.1:0.4316638685,Schizosaccharomyces
japonicus yFS275_EEB07724.2:0.6578210923)/1:0.9953873985,(Pneumocystis carinii
B80_KTW28575.1:1.4084720904,Neolecta irregularis DAH-
3_OLL24669.1:1.0006218870)/0.637:0.1515496542)/0.991:0.2256776790,
((((((((Blumeria graminis f. sp. triticales_CAD6503600.1:0.7531162989,Sclerotinia
sclerotiorum 1980 UF-70_ED000533.1:0.2765932257)/1:0.1524941760,(Neurospora
crassa OR74A_EAA31095.1:0.6885967458,(Trichoderma reesei
QM6a_EGR51574.1:0.6620040251,Verticillium dahliae
VdLs.17_EGY20454.1:0.3026641737)/0.998:0.1157645211)/0.997:0.1295661856)/
1:0.2456157763,Zymoseptoria tritici
IPO323_EGP91781.1:0.8369977502)/0.96:0.1007281359,Bacidia
gigantensis_KAG8533466.1:0.4808379229)/0.998:0.1601964466,(Aspergillus nidulans
FGSC A4_EAA60492.1:0.4506104096,Coccidioides immitis
RS_EAS33174.3:0.8065607454)/1:0.4345891442)/0.484:0.0721656644,Exophiala
dermatitidis NIH/UT8656_EHY55690.1:0.5012033562)/1:0.3656971887,((Orbilia
oligospora ATCC 24927_EGX45033.1:0.3414227850,Drechslerella
brochopaga_KAF3913044.1:1.0891925087)/0.935:0.1030551729,Arthrobotrys
entomopaga_KAF3922393.1:0.2921090641)/1:1.0058657323)/1:0.2188536040)/
0.994:0.2539557662,Yarrowia lipolytica
CLIB122_CAG81492.1:2.0484028528)/0.912:0.2451908987,(Candida albicans
SC5314_AOW26246.1:2.1467098101,Saccharomyces cerevisiae
S288C_NP_013614.1:3.1063180133)/1:0.8089907564)/0.995:0.2135312084,
((((((((Encephalitozoon intestinalis ATCC 50506_ADM12453.1:0.4654433956,
(Encephalitozoon hellem ATCC 50504_AFM99227.1:0.1534637040,Encephalitozoon
romaleae
SJ-2008_AFN83937.1:0.1133447964)/0.929:0.1542422656)/0.973:0.3171533381,Ordospora
colligata OC4_KHN69724.1:1.0059983135)/1:1.1475776203,((Nosema bombycis
CQ1_EOB12760.1:0.0576188201,Nosema bombycis
CQ1_EOB13352.1:0.0272028022)/1:0.8154013956,Nosema
granulosis_KAF9765078.1:0.5531489011)/1:0.4380150220,Nosema
ceranae_KK076096.1:0.9850031520)/1:0.8445023212)/0.974:0.2959663292,(Vittaforma
corneae ATCC 50505_ELA42834.1:1.8129535662,(Enterocytozoon
hepatopenaei_QQS54639.1:2.6052276116,Hepatospora
eriocheir_ORD96838.1:1.9497121632)/1:0.7254822499)/0.999:0.4846803792)/
1:0.3080700374,(Tubulinosema
ratisbonensis_RVD93459.1:2.2752978416,Hamiltosporidium
magnivora_TBU09672.1:1.5184156547)/1:0.5859121133)/0.761:0.1180296867,((Vavraia

culicis subsp. floridensis_ELA47375.1:0.2036756766, Trachipleistophora
hominis_ELQ74779.1:0.4189837612)/1:0.8912473056, Pseudoloma
neurophilia_KRH93371.1:1.4845783750)/1:2.1427959692)/0.936:0.3368091527, Edhazard
ia aedis USNM 41457_EJW04985.1:1.8981082829)/0.989:0.3958327523, Thelohania
contejeari_KAF7683292.1:2.4781585006)/0.791:0.2412618346, Dictyocoela
muelleri_KAG0440389.1:1.6623342813)/0.999:1.1781026990, ((Nematocida parisi
ERTm1_EIJ94843.1:0.0271184944, Nematocida sp.
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rubella_KAF8590878.1:0.6147866071)/1:0.2484958784, Dacryopinax
primogenitus_EJU04486.1:0.8791113035)/0.992:0.2001253936, Rhizoctonia
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 microbalum_TPX30058.1:0.4794810216,Synchytrium
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beljakovae_KAF9437609.1:0.3548568922)/1:0.0614238846,Lobosporangium
transversale_ORZ27752.1:0.4855451999)/1:0.0450622868)/0.95:0.0312600948,
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reniformis_KAF9959989.1:0.2329798446)/1:0.1545158196,Dissophora
globulifera_KAG0322036.1:0.4572826815)/1:0.0388993251)/1:0.1011169470,
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polycephala_KAG0254905.1:0.0983430555)/1:0.2077128658,Mortierella sp.
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minutissima_KAG0347932.1:0.0313509605)/1:0.0214640827)/1:0.0396678058)/
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epigama_KAF9431030.1:0.4266413671)/1:0.2329967898)/0.997:0.0997861144,Lunasporan
giospora selenospora_KAF9581062.1:0.3988068336)/1:0.4569349230,
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ambigua_KAG0266069.1:0.1566638974)/1:0.5066202718)/1:1.1595229854)/
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flammicorona RU095662.1:1.0475963028,Endogone sp. FLAS-
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vinacea_KAG2187344.1:0.5944989789)/1:0.7262362553)/1:0.3890264410,
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circinatus_KAG2221561.1:0.9854207218)/0.443:0.1724155127,Synccephalastrum
racemosum_ORY96863.1:0.9452822431)/0.776:0.0472209486)/1:0.1598029823,((Absidia
glauca_SAM05527.1:0.2252585847,Absidia
repens_ORZ15780.1:0.4138174897)/1:0.4369241600,Hesseltinella
vesiculosa_ORX54373.1:0.8163281068)/1:0.3678048907)/1:0.5785989746,(Rhizopus
delemar RA 99-880_EIE82270.1:0.2318690219,((Rhizopus microsporus ATCC
52813_PHZ13745.1:0.0849848589,Rhizopus
azygosporus_RCH98203.1:0.0161717658)/0.946:0.0222505387,Rhizopus
azygosporus_RCH78920.1:0.0458809663)/1:0.3114597406)/1:0.5244524589)/
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elegans_KAG2229872.1:0.4125047655)/1:0.2806503241)/1:0.1480063805,Choanephora
cucurbitarum_OBZ84791.1:0.6099090785)/1:0.3246826538,(Parasitella
parasitica_CEP13314.1:0.4548463458,Mucor
plumbeus_KAG2204394.1:0.2653916748)/0.947:0.0682097561)/1:0.3081993934,Mucor
lusitanicus_KAF1799975.1:0.0874732951);

FANCA

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parasitica_CEP14355.1:0.3404022299,Mucor
plumbeus_KAG2192548.1:0.1595223048)/0.822:0.0513653355,((((((Absidia
glaucia_SAM05007.1:0.3174851723,Absidia
repens_ORZ221635.1:0.5132714146)/1:0.5909203094,Hesseltinella
vesiculosa_ORX48264.1:1.3411306760)/1:0.4649956118,((Apophysomyces
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BC1015_KAG0165206.1:0.0000026619,Apophysomyces sp.
BC1034_KAG0190805.1:0.0000026916)/1:0.3640775521)/1:0.7526867615,Phycomyces
blakesleeanus NRRL
1555_OAD68996.1:0.9018486833)/0.869:0.1649897201)/1:0.2041047514,Mucor
circinatus_KAG2224356.1:1.0181495038)/0.765:0.0664587346,(((Basidiobolus
meristosporus CBS 931.73_ORY08175.1:1.4376485341,((Homo
sapiens_NP_000126.2:0.3221502378,Mus
musculus_NP_058621.2:0.1499489377)/1:1.0379110301,Pomacea
canaliculata_PVD21324.1:1.4248809270)/0.996:0.2775860260,Amphimedon
queenslandica_XP_019856935.1:1.2845344354)/1:0.7248390358)/0.999:0.3600267848,En
dogone sp. FLAS-F59071_RUS21520.1:1.1591302572)/1:0.3810223555,Synccephalastrum
racemosum_ORY96444.1:1.2687057640)/0.226:0.0510045550)/1:0.7165340167,(Rhizopus
delemar RA 99-880_EIE87991.1:0.6582588503,(Rhizopus microsporus ATCC
52813_PHZ08052.1:0.0332977435,(Rhizopus
azygosporus_RCH98460.1:0.0153631454,Rhizopus
azygosporus_RCI00193.1:0.0466865320)/0.945:0.0251892682)/0.937:0.2593653092)/
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saturninus_KAG2200303.1:0.2416383804,Thamnidium
elegans_KAG2237817.1:0.3102746003)/1:0.2659820332)/1:0.4819119072)/
1:0.1913105906,Mucor
lusitanicus_KAF1798129.1:0.1735968140)/0.481:0.0185914513,Mucor
lusitanicus_KAF1798128.1:0.1259336209);

FANCD2

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clarus_GES92114.1:0.0000024185)/1:0.0712447761,(Rhizophagus
clarus_GES92115.1:0.0794713778,(Rhizophagus irregularis DAOM 181602=DAOM
197198_POG62244.1:0.0043439364,Rhizophagus
diaphanus_RGB39818.1:0.0094452306)/1:0.0398352088)/0.632:0.0165178532)/
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rosea_RIB11525.1:0.0084430900)/1:0.3582396312,Diversispora
epigaea_RHZ86697.1:0.4124306222)/1:0.2817422044)/1:0.2156047666,Geosiphon
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globosum_ORY40978.1:0.7596846458,Chytridiomycetes
confervae_TPX75892.1:0.7391581772)/1:1.0599533084,Blyttiomycetes
helicus_RK085638.1:1.4584890578)/0.931:0.1011272209)/0.444:0.1135172597,
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endobioticum_TPX46664.1:0.6167288735)/1:1.3513952470)/0.935:0.0822541232,Blyttio
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musculus_NP_001028416.2:0.2777267307)/1:0.9623988681,Pomacea
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 rosetta_XP_004991565.1:1.5527323923)/1:0.3724169288)/0.976:0.1727293355,Capsaspo
 ra owczarzakii ATCC
 30864_XP_004349087.2:1.7299917731)/0.69:0.1290909043)/1:0.1773868636)/
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 cristalligena_RKP40479.1:1.2791935293)/0.754:0.1832680809)/0.994:0.1075773799,
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 megazygosporum_PVV01099.1:0.9121850931)/1:0.4284853322)/1:0.2828708857,(Smittium
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 protostelioides_RKP00536.1:2.6388831245)/0.733:0.1898667702,Piptocephalis
 cylindrospora_RKP15418.1:1.9374547097)/0.936:0.1705286227)/0.852:0.1087514735)/
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 E2_OUM66615.1:0.0332061899)/1:0.0953222122)/0.889:0.0359785997,Anaeromyces
 robustus_ORX85340.1:0.1680869070)/1:1.6071483495,Olpidium
 bornovanus_KAG5458847.1:1.2679377619)/0.883:0.1523624959,Basidiobolus
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 globulifera_KAG0324848.1:0.3341145224)/1:0.0288614245,((Mortierella sp.
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14UC_KAF9132558.1:0.0454753762, Linnemannia
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 epigama_KAF9409653.1:0.3046813535)/0.946:0.0576269331, Podila
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 F59071_RUS21066.1:0.7764475495)/0.389:0.0526103565, Endogone sp. FLAS-
 F59071_RUS21064.1:0.4634922258)/1:0.3678949506)/0.616:0.0592454724, Bifiguratus
 adelaidae_OZJ06305.1:2.0552452165)/1:0.3164318838, (Umbelopsis
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 vinacea_KAG2182703.1:0.1873233997)/0.3:0.0444942889)/1:0.9325085569)/
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 racemosum_ORY92990.1:0.8370089159)/0.934:0.1126393677)/0.992:0.0545498002,
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 vesiculosa_ORX54484.1:0.7669966842)/0.624:0.0673643284, Hesselтинella
 vesiculosa_ORX54486.1:1.0337954092)/1:0.3171356232)/0.993:0.0524877114,
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 1555_OAD66923.1:0.7398751930)/1:0.1283072564)/1:0.2395266881, (Rhizopus delemar
 RA 99-880_EIE92163.1:0.2154203546, (Rhizopus delemar RA 99-
 880_EIE92164.1:0.3147075920, ((Rhizopus microsporus ATCC
 52813_PHZ09814.1:0.0259547106, Rhizopus
 azygosporus_RCH84605.1:0.0386258057)/0.966:0.0176953629, Rhizopus
 azygosporus_RCH80279.1:0.0974242864)/1:0.1627542351)/0.219:0.0113380960)/
 1:0.3425475282)/1:0.1042559706, Choanephora
 cucurbitarum_OBZ85627.1:0.4738197150)/0.982:0.0569068378, (Mucor
 saturninus_KAG2201193.1:0.2559309944, Thamnidium
 elegans_KAG2235852.1:0.1874222793)/1:0.1650674236)/1:0.3714334750, (Parasitella
 parasitica_CEP15345.1:0.2763017772, Mucor
 plumbeus_KAG2203881.1:0.1682058763)/1:0.0589137680)/1:0.1905241254, Mucor
 lusitanicus_KAF1805430.1:0.0976867072);

FANCE

(Mucor ambiguus_GAN09205.1:0.1431962762,((((((((((((((((Rhizophagus
clarus_GES78490.1:0.0000028319,Rhizophagus
clarus_GES78491.1:0.0312066322)/1:0.0792106466,(Rhizophagus irregularis DAOM
181602=DAOM 197198_POG66492.1:0.0287561673,Rhizophagus
diaphanus_RGB42831.1:0.0104554779)/1:0.0591113643)/1:0.0611532865,Glomus
cerebriforme_RIA97945.1:0.0937900266)/1:0.4759063382,(Gigaspora
margarita_KAF0532448.1:0.0388148840,Gigaspora
rosea_RIB24671.1:0.0031643567)/1:0.4856220052)/0.887:0.1128055177,Diversispora
epigaea_RHZ81192.1:0.6424330389)/1:0.2799810176,Geosiphon
pyriformis_KAG9303111.1:1.0271802795)/0.998:0.2817571371,Jimgerdemannia
flammicorona_RUP47654.1:0.5008637715)/0.943:0.2861143044,Linnemannia
gamsii_KAG0276651.1:2.2355667672)/0.477:0.1741567733,(Basidiobolus meristosporus
CBS 931.73_ORX96829.1:1.2914662411,((Homo sapiens_NP_068741.1:0.2320099057,Mus
musculus_NP_001157291.1:0.3242147862)/1:1.2822036224,Pomacea
canaliculata_XP_025086429.1:1.6138583001)/0.914:0.2413870464,Amphimedon
queenslandica_XP_019855713.1:2.0686813570)/1:0.5755606510)/0.885:0.1782067075)/
0.969:0.2139304480,(Umbelopsis
isabellina_KAG2180096.1:2.0456049224,Dictyostelium discoideum
AX4_XP_641588.1:2.3844692644)/0.962:0.3997352975)/1:0.5295719248,Mucor
circinatus_KAG2226146.1:1.4874554196)/0.999:0.2904524205,Phycomyces
blakesleeanus NRRL 1555_OAD72538.1:0.6896172499)/0.777:0.0801277200,((Absidia
glauca_SAM02112.1:0.4981869643,Absidia
repens_ORZ23345.1:0.4635333708)/0.978:0.1423964045,Hesselтинella
vesiculosa_ORX61481.1:1.1464762601)/1:0.1834191252)/1:0.1637819105,
(((Apophysomyces sp. BC1015_KAG0168758.1:0.0000020431,Apophysomyces sp.
BC1021_KAG0178417.1:0.0000023142)/0.135:0.0000021216,Apophysomyces sp.
BC1034_KAG0188825.1:0.0031655030)/1:0.5876820170,Synccephalastrum
racemosum_ORY98105.1:1.0017608300)/0.13:0.0006131500)/1:0.1997132917,(Rhizopus
delemar RA 99-880_EIE83065.1:0.2825369822,(Rhizopus microsporus ATCC
52813_PHZ17932.1:0.0219559343,Rhizopus
azygosporus_RCH90546.1:0.0690728014)/1:0.3165670275)/1:0.4185095435)/
0.701:0.0811990732,(Mucor saturninus_KAG2198668.1:0.3450387258,Thamnidium
elegans_KAG2229666.1:0.2809516995)/1:0.1115057491)/0.998:0.1180069433,Choanephora
cucurbitarum_OBZ84676.1:0.7060568506)/1:0.2719089709,(Parasitella
parasitica_CEP17470.1:0.2174133808,Mucor
plumbeus_KAG2197907.1:0.1121614648)/0.414:0.0435817583)/1:0.1933093297,Mucor
lusitanicus_KAF1796241.1:0.1549431823);

FANCI

(Mucor ambiguus_GAN03661.1:0.0727286978,((((((((((((((((Rhizophagus
clarus_GES91536.1:0.0785722723,(Rhizophagus irregularis DAOM 181602=DAOM
197198_POG67280.1:0.0096724849,Rhizophagus
diaphanus_RGB29081.1:0.0351586637)/1:0.0594296630)/1:0.0904678167,Glomus
cerebriforme_RIA87302.1:0.1327201797)/1:0.4267293671,((Gigaspora
margarita_KAF0524594.1:0.0175507419,Gigaspora
rosea_RIB09784.1:0.0339590868)/1:0.4588007270,(((Diversispora
epigaea_RHZ75476.1:0.0038134025,Diversispora
epigaea_RHZ85811.1:0.3361051701)/0.788:0.0329782857,Diversispora
epigaea_RHZ78479.1:0.1819016099)/0.996:0.1089756259,Diversispora
epigaea_RHZ76634.1:0.0587235886)/1:1.6298379412,(Diversispora
epigaea_RHZ81659.1:0.1004353455,Diversispora
epigaea_RHZ81817.1:2.4906526748)/0.964:0.1857835545)/1:0.2366476026)/
1:0.2088934211)/1:0.2834859440,Geosiphon
pyriformis_KAG9306620.1:0.7915217914)/1:0.5403307178,((((((((Batrachochytrium
dendrobatidis JAM81_EGF79704.1:2.9760917730,Rozella allomycis
CSF55_EPZ32320.1:2.9250866824)/0.988:0.4321499684,Salpingoeca

rosetta_XP_004993096.1:2.3320757407)/0.969:0.2008190875,Dictyostelium
 discoideum_tr|Q54BR4|Q54BR4_DICDI:3.1433364804)/0.635:0.0809286914,(((Homo
 sapiens_sp|Q9NVI1|FANCI_HUMAN:0.1503322769,Mus musculus_sp|Q8K368|
 FANCI_MOUSE:0.1786418382)/1:0.8552062249,Pomacea
 canaliculata_PVD30204.1:0.9932108535)/1:0.2535660005,Amphimedon
 queenslandica_XP_019851889.1:1.7856324099)/1:0.2688168195,(Drosophila
 melanogaster_AAF59016.2:3.1325167359,(Capsaspora owczarzaki ATCC
 30864_XP_004346672.2:0.0000031924,Capsaspora owczarzaki ATCC
 30864_XP_011270486.1:0.0008893470)/1:2.1697610571)/0.829:0.2568719270)/
 0.993:0.1553078381)/1:0.2230929896,(((Entomophthora
 muscae_KAF7752257.1:2.0886848311,Conidiobolus coronatus NRRL
 28638_KXN70248.1:2.8031693894)/0.989:0.4740431151,Blyttomyces
 helicus_RK088610.1:1.0193058871)/0.435:0.0955640883,Dimargaris
 cristalligena_RKP34223.1:2.1552200668)/0.92:0.1352478491,((Gonapodya prolifera
 JEL478_KXS10830.1:2.2349442931,Caenorhabditis elegans_tr|Q7Z151|
 Q7Z151_CAEL:4.0945118001)/0.854:0.2927618606,(Thamnocephalis
 sphaerospora_RKP11010.1:2.5656232155,Piptocephalis
 cylindrospora_RKP13439.1:2.7981715430)/0.99:0.3463126920)/0.989:0.1832053280,
 ((((((Smittium mucronatum_OLY85066.1:0.6284450387,Smittium
 culicis_OMJ17225.1:0.5327581047)/1:0.7584624619,(Furculomyces
 boomerangus_PVU97410.1:0.0012741766,Smittium
 angustum_PVZ98243.1:0.0000024739)/0.985:0.0012735287,Smittium
 angustum_PVZ96972.1:0.0000023268)/1:1.0099620328)/1:0.2709909018,(Smittium
 simulii_PVU89686.1:1.0416772320,(Smittium
 simulii_PVU89687.1:0.0099413839,Smittium
 simulii_PVU89715.1:0.0000022669)/1:1.0979497203,Smittium
 megazygosporum_PVU90263.1:1.1924936844)/0.222:0.0541541725)/0.981:0.4335515173)/
 1:1.0037981990,Zancudomyces culisetae_OMH81125.1:2.3695282846)/1:0.6476919123,
 (Linderina pennispora_ORX72413.1:1.0743421438,Coemansia reversa NRRL
 1564_PIA18244.1:1.7225620842)/1:1.1547531305)/0.757:0.1323629694,Paramicrosporid
 ium saccamoebae_PJF17248.1:3.7243132461)/1:0.3653882930)/0.975:0.1313049461)/
 1:0.1276953658)/0.986:0.1099774335,((Batrachochytrium dendrobatidis
 JAM81_EGF79705.1:2.5802946154,Blyttomyces
 helicus_RK082875.1:1.4121833709)/0.287:0.0366283105,((((Neocallimastix sp. JGI-
 2020a_KAG4101863.1:0.0000026401,Neocallimastix
 californiae_ORY35124.1:0.0146398288)/0.999:0.0200937076,Neocallimastix
 californiae_ORY35123.1:0.0000026771)/1:0.2703172637,(Piromyces
 finnis_ORX34875.1:0.0933304261,Piromyces
 finnis_ORX55468.1:0.0000029367)/1:0.1426986157,Piromyces sp.
 E2_OUM69556.1:0.0669295974)/1:0.0910843403)/1:0.1001840305,Anaeromyces
 robustus_ORX86912.1:0.0987306167)/1:1.7108261498,((((Allomyces macrogynus ATCC
 38327_KNE55440.1:0.0000024582,Allomyces macrogynus ATCC
 38327_KNE60098.1:0.2058840126)/0.504:0.0353615781,Allomyces macrogynus ATCC
 38327_KNE60097.1:0.1904218215)/1:2.8454148947,Rhizoclostridium
 globosum_ORY51858.1:2.3172751884)/0.938:0.2397516281,(Synchytrium
 microbalum_TPX37174.1:0.6539452154,Synchytrium
 endobioticum_TPX48165.1:0.6181216144)/1:2.2186439328)/0.987:0.2073629094,Blyttio
 myces helicus_RK089266.1:1.4094519528)/0.752:0.0372427464)/0.923:0.1016520339)/
 0.804:0.0809985428)/1:0.3102365094,(((((((Haplosporangium
 bisporale_KAF8932703.1:0.0000024501,Podila verticillata NRRL
 6337_KFH71813.1:0.0118100908)/1:0.0895536726,(Podila
 horticola_KAF9309754.1:0.0564320362,(Podila
 clonocystis_KAG0023662.1:0.0701102290,(Podila
 epicladia_KAG0095160.1:0.0504286246,Podila
 minutissima_KAG0345124.1:0.0434730631)/0.858:0.0131947251,Podila
 minutissima_KAG0363141.1:0.0288183984)/1:0.0062987228)/1:0.0141933154)/
 1:0.0250307192)/1:0.0835914711,Podila
 humilis_KAG0346576.1:0.3908647460)/1:0.0878400610,Podila
 epigama_KAF9422171.1:0.3220998603)/1:0.1688401755,(((((((Dissophora
 ornata_KAF8935766.1:0.1469409731,Gamsiella
 multivaricata_KAG0365943.1:0.2503246650)/0.949:0.0201727762,
 (((((((Entomortierella lignicola_KAF8963051.1:0.0097986254,Haplosporangium sp. Z
 27_KAF9204889.1:0.0000025498)/0.81:0.0041286556,Entomortierella
 lignicola_KAF8977816.1:0.0083659025)/1:0.1430620029,(((Mortierella sp.

AD010_KAF9170258.1:0.0000026849,Mortierella sp.
AD011_KAF9387950.1:0.0044664213)/0:0.0000027586,Zancudomyces
culisetae_OMH81126.1:3.7537253201)/0.213:0.0229754491,((Mortierella sp.
AD010_KAF9170651.1:0.0280517550,Mortierella sp.
AD011_KAF9397745.1:0.0000031804)/1:0.0993325139,Entomortierella
chlamydospora_KAG0001818.1:0.0189540176)/0.195:0.0019699876)/1:0.0588179734,Mortierella sp.
AD094_KAF9354159.1:0.0434000374)/1:0.0618629781)/1:0.0246191191,Mortierella sp.
AM989_KAF9108452.1:0.1261081485)/1:0.0382005636,Entomortierella
beljakovae_KAF9433039.1:0.2735190023)/1:0.0818301603,Lobosporangium
transversale_ORZ26962.1:0.3552144216)/1:0.0529200522,((Mortierella sp.
NVP85_KAF9358231.1:0.1449464628,Mortierella sp.
GBA43_KAG0242738.1:0.1878338806)/1:0.0531903234,Modicella
reniformis_KAG0002734.1:0.1332145609)/1:0.1241677729)/1:0.0251201472)/
0.201:0.0031564408,(Dissophora ornata_KAF8936189.1:0.1436084517,Dissophora
globulifera_KAG0311005.1:0.2898443639)/0.979:0.0618221596)/0.818:0.0207032927,Di
ssophora globulifera_KAG0316095.1:0.2515754542)/1:0.0401393521,
(((Haplosporangium sp. Z 767_KAF9186914.1:0.0006937251,Haplosporangium sp. Z
11_KAF9188462.1:0.0000026150)/1:0.0364067037,Mortierella
polycephala_KAG0261101.1:0.0781949816)/1:0.2557320248,(Mortierella
antarctica_KAF9987587.1:0.1487656096,Mortierella sp.
GBA30_KAG0200521.1:0.1868681974)/1:0.1202325074)/1:0.0450442885)/0.964:0.0355329
208,((((Haplosporangium gracile_KAF8949078.1:0.0316742587,Linnemannia
schmuckeri_KAF9154413.1:0.0220274588)/0.999:0.0340907585,Haplosporangium
gracile_KAF8949079.1:0.0441891511)/0.997:0.0216952640,((Mortierella sp.
GBA39_KAF9144745.1:0.0383318042,(Mortierella
hygrophila_KAF9546780.1:0.0104956911,Linnemannia
hyalina_KAG9070815.1:0.0158958911)/1:0.0031217433)/1:0.0191734005,Linnemannia
elongata
AG-77_OAQ36263.1:0.0324268378)/1:0.0425725666)/1:0.0221163156,Linnemannia
gamsii_KAG0298035.1:0.0940114107)/1:0.0279963699,((Mortierella sp.
14UC_KAF9130739.1:0.0586457180,Linnemannia
zychae_KAF9913165.1:0.0925688479)/1:0.0192635723,(Linnemannia
exigua_KAG0281573.1:0.0719242291,Mortierella sp.
AD032_KAG0380276.1:0.0392499780)/1:0.0355456829)/1:0.0411510908)/1:0.0736199175,
((Mortierella sp. AD031_KAF9095148.1:0.0006703885,Mortierella sp.
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GBA35_KAF9096291.1:0.0055560551)/1:0.0940728762)/1:0.2433688227)/1:0.0511754714,
Gryganskiella
cystojenkinii_KAG0051669.1:0.4452037925)/0.97:0.0426644627,Lunasporangiospora
selenospora_KAF9581425.1:0.5196004457)/1:0.1171829169)/1:0.1668845019,
((Actinomortierella wolfii_KAG0228412.1:0.1108214135,Actinomortierella
ambigua_KAG0267401.1:0.2513072931)/0.997:0.0751529017,Actinomortierella
ambigua_KAG0267402.1:0.2427902925)/1:0.5562015670)/1:0.9937471379,Bifiguratus
adelaidae_OZJ03311.1:1.9424651804)/0.923:0.1373113045)/0.993:0.0980308373,Bifigu
ratus adelaidae_OZJ04599.1:1.7307249680)/0.843:0.0589830099)/0.996:0.0970487184,
(Jimgerdemannia flammicorona_RUP48470.1:0.1989967226,Endogone sp. FLAS-
F59071_RUS21607.1:0.2307109339)/1:0.5497012257)/1:0.3314736272,(Umbelopsis
isabellina_KAG2171576.1:0.3013895101,Umbelopsis
vinacea_KAG2173516.1:0.3972717235)/1:0.8748631998)/1:0.6080260006,Syncephalastru
m racemosum_ORZ02314.1:1.1222766283)/0.786:0.0462225087,Phycomyces blakesleeanus
NRRL 1555_OAD70725.1:0.7602900023)/0.996:0.0867649602,(Apophysomyces
ossiformis_KAF7730861.1:0.3129523211,Apophysomyces sp.
BC1015_KAG0167084.1:0.2185300568)/1:0.5333893317)/0.994:0.0807798107,((Absidia
glaucia_SAM09346.1:0.2947639604,Absidia
repens_ORZ10530.1:0.2712927200)/1:0.2864268340,Hesselтинella
vesiculosa_ORX62870.1:1.0291617752)/1:0.3684180061)/1:0.4765037247,((Rhizopus
deleamar RA 99-880_EIE91574.1:0.3419790814,(Rhizopus microsporus ATCC
52813_PHZ12216.1:0.0443484425,(Rhizopus
azygosporus_RCH86323.1:0.0425084176,Rhizopus
azygosporus_RCH91569.1:0.0336700560)/1:0.0220593777)/1:0.3131253982)/
0.411:0.0337928103,Rhizopus deleamar RA
99-880_EIE91575.1:0.2354393040)/1:0.4702691582)/0.997:0.1022563936,(Mucor
saturninus_KAG2213869.1:0.2693228844,Thamnidium

elegans_KAG2232755.1:0.2861091365)/1:0.2038867384)/1:0.1184031103,Choanephora
cucurbitarum_OBZ87914.1:0.4764947560)/1:0.3250478396,(Parasitella
parasitica_CEP15833.1:0.2187306239,Mucor
plumbeus_KAG2203245.1:0.1379214872)/0.999:0.0589961750)/1:0.1399505480,Mucor
lusitanicus_KAF1801677.1:0.0703752714);

FANCI

(Mucor ambiguus_GAN01912.1:0.0803857511,((((((((((((Rhizophagus
clarus_GES76756.1:0.1097372919,(Rhizophagus irregularis DAOM 181602=DAOM
197198_POG75624.1:0.0593962892,Rhizophagus
diaphanus_RGB37783.1:0.0098727459)/1:0.0699969078)/1:0.0926984424,Glomus
cerebriforme_RIA96456.1:0.1445696423)/1:0.6699771887,Geosiphon
pyriformis_KAG9290759.1:0.8221465841)/0.999:0.2214399803,Basidiobolus
meristosporus CBS 931.73_ORX98335.1:1.3368470952)/0.99:0.2109418058,
((((((((Schizosaccharomyces pombe_CAB16287.1:0.9847129311,Schizosaccharomyces
japonicus yFS275_EEB06601.2:1.4972720830)/1:1.1370178833,((((((((Blumeria
graminis f. sp. triticales_CAD6502977.1:0.9045125882,Sclerotinia sclerotiorum
1980 UF-70_EDN92053.1:1.0359472166)/0.503:0.1943223580,(Trichoderma reesei
QM6a_EGR48488.1:0.4855058867,Verticillium dahliae
Vdls.17_EGY19214.1:0.6115794362)/1:0.9844500235)/1:0.2208453029,Zymoseptoria
tritici IP0323_EGP86574.1:1.5088808226)/0.976:0.1529859711,((Aspergillus
nidulans FGSC A4_EAA62984.1:0.6704290510,Coccidioides immitis
RS_EAS36726.3:0.8613745787)/1:0.2240431098,Exophiala dermatitidis
NIH/UT8656_EHY58322.1:1.2755094935)/0.994:0.1716203982,Bacidia
gigantensis_KAG8529327.1:0.7993453069)/1:0.1911635642)/1:0.1686221556,(Tuber
melanosporum_CAZ82635.1:0.9591437144,((Orbilia oligospora ATCC
24927_EGX46339.1:0.3579941987,Drechslerella
brochopaga_KAF3928382.1:0.2504028739)/0.968:0.0851340744,Arthrobotrys
entomopaga_KAF3908903.1:0.1778412598)/1:0.8951295318)/0.994:0.1466211248)/
1:0.1987058646,Neolecta irregularis
DAH-3_OLL24306.1:1.3290161958)/1:0.1705349529,Pneumocystis carinii
B80_KTW27717.1:1.4239149014)/0.999:0.1054398340,(Yarrowia lipolytica
CLIB122_CAG82511.1:1.6029888580,(Candida albicans
SC5314_AOW27172.1:1.4152432776,Saccharomyces
cerevisiae_sp_P22516_CHL1_YEAST:1.7432313881)/1:0.3938383217)/1:0.7764275306)/
0.986:0.1271092445)/1:0.3337306388,((((Cryptococcus neoformans var. grubii
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okayama7#130_EAU85951.2:0.6520250241,Amanita muscaria Koide
BX008_KIL67908.1:0.7732382567)/1:0.2583746209,(Postia placenta Mad-698-
R_EED85297.1:1.2841159232,Serpula lacrymans var. lacrymans
S7.9_EGO23609.1:0.8287873908)/0.997:0.1829893348)/1:0.3605347680,Ramaria
rubella_KAF8579814.1:0.6963962523)/0.869:0.1062149829,Dacryopinax
primogenitus_EJU03236.1:1.1358432919)/0.791:0.1229380089,Rhizoctonia
solani_QRW20304.1:1.0571600479)/0.219:0.0221526379,Rhizoctonia
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FANCL

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horticola_KAF9310279.1:0.0604444091, Podila
minutissima_KAG0352122.1:0.0539663659)/0.912:0.0080302965, Podila
clonocystis_KAG0024688.1:0.0431218010)/1:0.0412029919)/1:0.1308627844, Podila
humilis_KAG0347694.1:0.3484188915)/1:0.1050530000, Podila
epigama_KAF9423182.1:0.2747645203)/1:0.1076037484, (((((Haplosporangium
gracile_KAF8937559.1:0.0220429008, Linnemannia
schmuckeri_KAF9150703.1:0.0310373314)/1:0.0140412050, ((Mortierella sp.
GBA39_KAF9139701.1:0.0223096870, (Mortierella
hygrophila_KAF9550070.1:0.0159039165, Linnemannia
hyalina_KAG9073178.1:0.0230952240)/0.127:0.0000023369)/1:0.0298353792, Linnemannia
a elongata AG-77_OAQ25702.1:0.0391942692)/1:0.0208817275)/0.998:0.0165724238,
(((Mortierella sp. 14UC_KAF9126808.1:0.0427699169, Mortierella sp.
AD032_KAG0374144.1:0.0593008144)/0.357:0.0088697631, Linnemannia
exigua_KAG0273171.1:0.0811287807)/1:0.0799078587, Linnemannia
gamsii_KAG0292926.1:0.1159013303)/1:0.0552187300)/1:0.0571347889, (Mortierella
sp. AD031_KAF9082479.1:0.0000027777, Mortierella sp.
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27_KAF9203380.1:0.0044454540)/1:0.1798062981, Entomortierella
beljakovae_KAF9435420.1:0.3136762179)/1:0.1320373888, (Mortierella sp.
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selenospora_KAF9585314.1:0.5505801001,Lobosporangium
transversale_ORZ08813.1:0.2743883281)/0.997:0.0767539377,Gamsiella
multidivariata_KAG0357499.1:0.3052289656)/0.759:0.0241036192,Dissophora
globulifera_KAG0327689.1:0.2243437531)/0.947:0.0243430200)/1:0.0532990960,
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767_KAF9180101.1:0.0000022202)/1:0.0318680847,Mortierella
polycephala_KAG0253091.1:0.0463494408)/1:0.2004939158,(Mortierella
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ambigua_KAG0251427.1:0.9126557289)/1:0.3531926062,(Gonapodya prolifera
JEL478_KXS21705.1:0.9742838798,(Rhizoclostridium
globosum_ORY40408.1:1.6937388754,Drosophila
melanogaster_AHN57265.1:2.4478503214)/0.426:0.1152986966)/0.996:0.1824257053)/
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38327_KNE58402.1:0.0000029245)/1:1.3847572093,Catenaria anguillulae
PL171_ORZ31903.1:1.9551365561)/1:0.9076338437)/0.994:0.1046717002,
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muscae_KAF7748860.1:0.0145972155)/1:1.4372857882,(((Smittium
mucronatum_OLY77915.1:1.1171686718,Furculomyces
boomerangus_PVU00056.1:1.1327936048)/0.995:0.3074786241,Smittium
simulii_PVU97027.1:1.1541065819)/1:0.4476983684,Coemansia reversa NRRL
1564_PIA19577.1:1.5766617544)/1:0.2952299806,(Thamnocephalis
sphaerospora_RKP10238.1:1.3269839694,Dimargaris
cristalligena_RKP39694.1:1.0976724091)/0.866:0.1884204510)/0.964:0.1155543093)/
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microbalum_TPX30102.1:0.4899812734,Synchytrium
endobioticum_TPX53587.1:0.2646641423)/1:1.1596498388)/0.967:0.2612793762)/
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isabellina_KAG2181111.1:0.6480733148)/1:0.5459081487,Piptocephalis
cylindrospora_RKP11639.1:2.0984195597)/0.856:0.1678873528,(((Neocallimastix sp.
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californiae_ORY72342.1:0.0000021924)/0.988:0.0751380758,(Piromyces
finnis_ORX55314.1:0.0888657772,Piromyces sp.
E2_OUM59438.1:0.0824791694)/0.818:0.0467628484)/1:1.0237376375,(Conidiobolus
coronatus NRRL 28638_KXN66664.1:1.5489424946,Dictyostelium discoideum
AX4_XP_629481.1:1.1401926039)/0.397:0.1018029136)/0.997:0.2898384052)/
0.535:0.1162909489)/1:0.3432972304,((Absidia
glauca_SAM06879.1:0.2981968378,Absidia
repens_ORZ17037.1:0.3335093477)/1:0.1736835603,Hesseltinella
vesiculosa_ORX50108.1:0.7421820190)/1:0.3459866645,((Apophysomyces
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BC1034_KAG0189674.1:0.0000024139)/1:0.2700446591)/1:0.4807217230,(Mucor
circinatus_KAG2221802.1:0.9150652414,(Phycomyces blakesleeanus NRRL
1555_OAD77547.1:0.5594863476,Syncephalastrum
racemosum_ORZ01405.1:0.9338240284)/0.958:0.1114745791)/0.46:0.0843620774)/
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880_EIE90477.1:0.3044550831,(Rhizopus microsporus ATCC
52813_PHZ13256.1:0.0980442511,Rhizopus
azygosporus_RCH94792.1:0.0000024117)/1:0.2663255885)/1:0.2419608151)/
1:0.1666319093,(Mucor saturninus_KAG2213491.1:0.1951887917,Thamnidium
elegans_KAG2231704.1:0.3303700293)/1:0.2600178663)/0.999:0.1288020861,Choanephora
cucurbitarum_OBZ85092.1:0.5863193665)/1:0.3840305074,(Parasitella
parasitica_CEP18045.1:0.2729237184,Mucor
plumbeus_KAG2191379.1:0.0933216847)/1:0.1117998137)/0.965:0.0410492306,Mucor
lusitanicus_KAF1806185.1:0.0313181060);

FANCM

(Podila epigama_KAF9426991.1:0.6220217855,((((((((Homo sapiens_NP_065988.1:0.2014601231,Mus musculus_NP_849243.2:0.3062613413)/1:0.8653246468,Pomacea canaliculata_PVD26266.1:1.0425319620)/1:0.3139677978,Drosophila melanogaster_AAF55897.2:1.8804984755)/1:0.1490053024,(Olpidium bornovanus_KAG5455736.1:1.1187881514,Dimargaris cristalligena_RKP33636.1:1.2768848591)/0.885:0.1745530481)/0.999:0.1317610528,(((Blyttomyces helicus_RK092847.1:0.7137336108,((Spizellomyces punctatus DAOM BR117_KNC96281.1:0.0454180180,Spizellomyces sp. 'palustris'_TPX65811.1:0.0615315703)/1:0.9353858540,Powellomyces hirtus_TPX61370.1:0.7621799321)/0.994:0.1088558778)/1:0.1465847631,(Rhizoclostridium globosum_ORY52110.1:0.9186328943,Chytridiomyces confervae_TPX77543.1:0.6669938873)/1:0.4510375082)/0.99:0.1134006536,(Batrachochytrium dendrobatidis_JAM81_EGF84245.1:0.8065136198,Blyttomyces helicus_RK087912.1:1.1820132697)/0.99:0.2606498884)/1:0.1586435284,Rozella allomyces CSF55_EPZ32328.1:1.6798435172)/0.846:0.0417053560)/0.872:0.0401875724,((Gonapodya prolifera_JEL478_KXS20023.1:1.5257707095,Paramicrosporidium saccamoebae_PJF17574.1:1.4497967361)/0.996:0.2064772056,(Thamnocephalis sphaerospora_RKP07512.1:1.2356706632,Piptocephalis cylindrospora_RKP12932.1:1.7051242930)/1:0.4220953250)/1:0.2201179836)/0.999:0.0572345928,((((((((Parasitella parasitica_CEP17934.1:0.2742236492,Mucor plumbeus_KAG2196177.1:0.2491969847)/1:0.0690406552,(Mucor ambiguus_GAN04941.1:0.1025170534,Mucor lusitanicus_KAF1799200.1:0.1732036992)/1:0.2468594278)/1:0.4064780216,Choanephora cucurbitarum_OBZ85207.1:0.6201767416)/0.997:0.0704698171,((Mucor saturninus_KAG2202402.1:0.3682203675,Mucor saturninus_KAG2213388.1:0.7691495206)/1:0.1736646175,Thamnidium elegans_KAG2231319.1:0.5326670137)/1:0.2100830288)/0.981:0.0993407443,(Rhizopus delemar_RA_99-880_EIE89293.1:0.3526682152,(Rhizopus microsporus ATCC 52813_PHZ17749.1:0.0061049340,Rhizopus azygosporus_RCH90460.1:0.0246416088)/1:0.3008872978)/1:0.5024656209)/1:0.5007424413,((Absidia glauca_SAL99886.1:0.4796386230,Absidia repens_ORZ19347.1:0.5149730673)/1:0.3806992880,Hesseltinella vesiculosa_ORX58999.1:1.0285725698)/1:0.3122203553)/0.988:0.0862450039,((Apophysomyces ossiformis_KAF7729998.1:0.3524520353,Apophysomyces sp. BC1015_KAG0174207.1:0.3438215682)/1:0.4677672157,Phycomyces blakesleeana NRRL 1555_OAD69888.1:0.6583101072)/1:0.1767047758)/0.76:0.0588016796,(Syncephalastrum racemosum_ORZ02607.1:0.9892159043,Mucor circinatus_KAG2217039.1:0.8116017703)/1:0.1785935967)/1:0.1290668419,(Umbelopsis isabellina_KAG2186213.1:0.5337833563,Umbelopsis vinacea_KAG2188360.1:0.3724118260)/1:0.6953383303)/1:0.2895385510,(Bifiguratus adelaidae_OZJ02481.1:1.0381946211,(Jimgerdemannia flammicorona_RUP43351.1:2.2148141486,Endogone sp. FLAS-F59071_RUS19389.1:0.8243784769)/0.863:0.1863360094)/1:0.1469009049)/1:0.1282869645,((Basidiobolus meristosporus CBS 931.73_ORX98858.1:0.2547114042,Basidiobolus meristosporus CBS 931.73_ORY07243.1:0.4444155616)/1:0.6551741714,Entomophthora muscae_KAF7748688.1:1.3193077250)/1:0.1622609149)/1:0.0827004441)/0.939:0.0437447067,((((((((Bacidia gigantensis_KAG8527002.1:0.6640165783,Exophiala dermatitidis NIH/UT8656_EHY55280.1:0.6425526270)/1:0.1217989026,Coccidioides immitis RS_EAS33746.3:0.7774151913)/0.982:0.0670675627,Zymoseptoria tritici IPO323_EGP88167.1:0.8633205879)/0.944:0.1080090105,((Blumeria graminis f. sp. triticales_CAD6504314.1:0.5755916566,Sclerotinia sclerotiorum 1980 UF-70_ED001590.1:0.5354254017)/1:0.1824538283,(Neurospora crassa OR74A_EAA34786.1:0.5073853514,(Trichoderma reesei QM6a_EGR52674.1:0.5104209315,Verticillium dahliae VdLs.17_EGY21711.1:0.4507813933)/1:0.1243657680)/1:0.2641571687)/1:0.1847194645)/1:0.4407242697,((Orbilia oligospora ATCC 24927_EGX49662.1:0.1910055644,

(Arthrotrichia entomopaga_KAF3905550.1:0.2257257777,Drechslerella
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 S7.9_EG021290.1:0.5191794401,Ramaria
 rubella_KAF8587346.1:0.8394735976)/0.973:0.1262489216)/1:0.2437986989)/
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 (Cryptococcus neoformans var. grubii_H99_AFR98393.2:1.2012931217,Wallemia
 ichthyophaga_EXF-994_EOR02812.1:1.2523478690)/1:0.2192027406)/1:0.1281885859,
 (Malassezia globosa_CBS_7966_EDP41956.1:1.3108736434,(Tilletiaria anomala_UBC
 951_KDN37577.1:1.0687784002,Ustilago maydis
 521_KIS70993.1:0.8442394272)/1:0.1658168771)/1:0.4349339128)/1:0.0955341364,
 ((Puccinia graminis f. sp. tritici_CRL_75-36-700-
 3_EFP92023.2:0.3393872576,Melampsora larici-populina
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 angustum_PVZ99644.1:0.0079558751)/1:0.7309820748)/1:0.1148853802,(Smittium
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 megazygosporum_PVV02623.1:0.7463894260)/1:0.1793383545)/0.942:0.1101403793,Zancu
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antarctica_KAF9987996.1:0.3720258319,Mortierella sp.
GBA30_KAG0203440.1:0.2999837740)/1:0.1456881796)/1:0.1283261519,
((((Haplosporangium sp. Z 27_KAF9199879.1:0.3147655126,(Mortierella sp.
AD094_KAF9360483.1:0.0507869297,(Entomortierella
chlamydospora_KAG0006258.1:0.0331072926,Mortierella sp.
AD010_KAF9175355.1:0.0483795164)/1:0.0976473058)/1:0.1911487027,Mortierella sp.
AM989_KAF9110573.1:0.2136989450)/1:0.0686985405)/1:0.0630071270,Entomortierella
beljakovae_KAF9435297.1:0.5252030918)/1:0.1125338270,Lobosporangium
transversale_ORZ12050.1:0.5758994864)/1:0.0723314783,(Dissophora
ornata_KAF8941149.1:0.3898354611,Gamsiella
multidivariata_KAG0362734.1:0.4594155842)/1:0.0812258951)/1:0.0507501311,
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reniformis_KAF9983232.1:0.3512043860)/0.999:0.0611520269,Mortierella sp.
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globulifera_KAG0323600.1:0.5226167128)/0.995:0.0560182547)/1:0.0840755005)/
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selenospora_KAF9582293.1:0.8065992201)/0.991:0.0502733874)/1:0.1260899355)/
1:0.3870973017,(Podila humilis_KAG0344141.1:0.6206998640,(((Haplosporangium
bisporale_KAF8941914.1:0.0000029019,Podila verticillata NRRL
6337_KFH67609.1:0.0000022303)/1:0.1074225082,Haplosporangium
bisporale_KAF9027359.1:0.8547843846)/1:0.1043980335,(Podila
horticola_KAF9316223.1:0.1063304463,(Podila
clonocystis_KAG0033227.1:0.1392944113,(Podila
epicladia_KAG0096837.1:0.0847397143,Podila
minutissima_KAG0363760.1:0.1020972694)/1:0.0744285871)/0.621:0.0211949808)/
1:0.0809085411)/1:0.2562858833)/1:0.3098964824);

FANCO

(Dictyostelium discoideum_XP_638535.1:1.0303980686,(Mus
musculus_NP_444499.1:0.0726412164,Homo
sapiens_NP_002867.1:0.1002063565)/1:0.7553030752,((((((((Rhizophagus
clarus_GES85838.1:0.0211185027,Rhizophagus irregularis DAOM 181602=DAOM
197198_POG80325.1:0.0275777186)/0.994:0.0333922787,Glomus
cerebriforme_RIA97301.1:0.0541710850)/1:0.2933545659,(((Gigaspora
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margarita_KAF0491431.1:0.0000021312)/0.136:0.0000026991,Gigaspora
rosea_RIB16529.1:0.0207769472)/1:0.6112844605,Diversispora
epigaea_RHZ79069.1:0.2274436063)/1:0.2811824169)/0.75:0.0567660891,Geosiphon
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confervae_TPX68649.1:0.9543539523)/0.929:0.1745680528,(Synchytrium
microbalum_TPX30708.1:1.1149077513,Synchytrium
endobioticum_TPX42121.1:0.7248462263)/1:0.6703766244)/0.989:0.1555090857)/
1:0.1787987176)/1:0.1109542138)/0.919:0.1055312219,Jimgerdemannia
flammicorona_RUP26539.1:0.5579323291)/0.973:0.0964997664,(((((((Parasitella
parasitica_CEP08957.1:0.9711385024,Mucor
saturninus_KAG2208072.1:0.9437664205)/0.973:0.1384780462,(Choanephora
cucurbitarum_OBZ87558.1:0.5481465646,(Rhizopus
azygosporus_RCH80534.1:0.0350285741,Rhizopus
azygosporus_RCH83229.1:0.0205116652)/1:0.4723429020)/1:0.1861785129)/
1:0.2399780234,((Absidia glauca_SAL99084.1:0.5176450969,Absidia
repens_ORZ15694.1:0.6412579516)/1:0.3696339361,Hesselтинella
vesiculosa_ORX47759.1:0.9607993936)/1:0.2849289542)/0.974:0.0816639154,

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BC1015_KAG0170764.1:0.0000028699,(Apophysomyces sp.
BC1021_KAG0179254.1:0.0023893297,Apophysomyces sp.
BC1034_KAG0192433.1:0.0000022298)/1:0.0149027095)/1:0.3459727836)/
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racemosum_ORZ03530.1:0.8999881583)/0.741:0.1092843152)/1:0.3972160185,
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27_KAF9203268.1:0.0061116751)/1:0.2556018315,(Mortierella sp.
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AD010_KAF9171344.1:0.0124607384,Entomortierella
chlamydospora_KAF9992504.1:0.0070606515)/1:0.0620475417,Mortierella sp.
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sp. GBA43_KAG022719.1:0.2575206061)/1:0.0669278057)/1:0.0733871351,
(Haplosporangium sp. Z 767_KAF9183214.1:0.0329722290,Mortierella
polycephala_KAG0248987.1:0.1807526332)/1:0.3921020863)/0.879:0.0561648238,
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6337_KFH65016.1:0.0053021278)/1:0.3517212202,Podila
epigama_KAF9430778.1:0.5842469654)/1:0.5378322553,Lunasporangiospora
selenospora_KAF9582241.1:0.5619426836)/0.776:0.0708700210,(Mortierella
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hygrophila_KAF9541247.1:0.0066341497,Linnemannia
hyalina_KAG9067681.1:0.0235757876)/1:0.0186581210)/1:0.0334282432)/
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zychae_KAF9904885.1:0.0780771253)/0.947:0.0245656693,(Linnemannia
exigua_KAG0260177.1:0.0484368402,Mortierella sp.
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NVP41_KAG0202935.1:0.0033559506)/1:0.0949119563)/1:0.2478879158)/1:0.2562310862,
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38327_KNE68750.1:0.1067492687,Allomyces macrogynus ATCC
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MUS81

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 B80_KTW26178.1:1.0812248342)/0.995:0.1663229928, Neolecta irregularis DAH-
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 CQ1_EOB13810.1:0.0165448429)/1:0.3406900713, Nosema
 granulosis_KAF9760984.1:0.3265322760)/1:0.3619983164, (Nosema apis BRL
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 ceranae_KK075551.1:0.3789480037)/1:0.2259629578)/1:0.2424112227)/1:0.2718974828,
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 ratisbonensis_RVD92093.1:0.0668695926)/1:0.3301493041)/1:0.6145849687)/
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ERTm1_EIJ94922.1:0.0480864002,Nematocida sp.
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displodere_OAG31696.1:0.9931706744)/1:1.4339395068)/1:0.3715565213)/
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AX4_XP_643164.1:1.3964944918)/0.215:0.0405102347)/0.977:0.1021345161)/
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CSF55_EPZ36724.1:1.1449466149,(((Neocallimastix sp. JGI-
2020a_KAG4098779.1:0.0000024190,Neocallimastix
californiae_ORY30636.1:0.0000025989)/1:0.1700505760,Anaeromyces
robustus_ORX78456.1:0.2124057927)/1:0.1671025642,(Piromyces
finnis_ORX58377.1:0.1755970956,Piromyces sp.
E2_OUM59897.1:0.1246612244)/1:0.1564826854)/0.907:0.0823900785,Neocallimastix
californiae_ORY30635.1:0.1587679804)/1:0.9153479410)/1:0.2116457247)/
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canaliculata_PVD25483.1:0.8480637285)/0.6:0.1050074101,Amphimedon
queenslandica_XP_019864298.1:0.7835522919)/1:0.2085220172,(Monosiga brevicollis
MX1_XP_001742785.1:1.0673967586,(Salpingoeca
rosetta_XP_004989308.1:1.4435038674,(Salpingoeca
rosetta_XP_004992907.1:0.1426580216,Salpingoeca
rosetta_XP_004992909.1:0.0000034160)/1:1.7365675791)/0.994:0.2975506821)/
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protostelioides_RK098429.1:1.6918688156)/0.944:0.1496917578,Gonapodya prolifera
JEL478_KXS10082.1:0.9715279530)/1:0.2487001018)/1:0.0897153940)/0.756:0.04500717
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28638_KXN72869.1:1.0315773007)/1:0.4406331390,((((Smittium
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angustum_PWA02536.1:0.0000027901)/1:0.5925314539)/1:0.1923517506,Zancudomyces
culisetae_OMH83600.1:1.0938985808)/1:0.5228681092,(Linderina
pennisporea_ORX66766.1:0.4028215183,Coemansia reversa NRRL
1564_PIA17124.1:0.3312612079)/1:0.6199099608)/1:0.2833189393,Dimargaris
cristalligena_RKP36400.1:1.0271613106)/0.993:0.1633384009)/1:0.1436811724)/
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bornovanus_KAG5459283.1:0.0000029531)/1:0.9965496215)/1:0.0733760662,
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graminis f. sp. tritici CRL 75-36-700-3_EFP74928.2:0.3979874181,Puccinia
graminis f. sp. tritici CRL
75-36-700-3_EFP81072.2:0.0000027358)/1:0.6367931203,Melampsora larici-populina
98AG31_EGF99391.1:0.6759126085)/0.999:0.1200515258,(Melampsora larici-populina

98AG31_EGG11949.1:0.5450533323,Puccinia graminis f. sp. tritici CRL 75-36-700-3_EHS64084.1:0.5987868922)/1:0.2399400254)/1:0.5150130859,Mixia osmundae IAM 14324_KEI40105.1:1.2187521861)/0.998:0.1393299035)/1:0.1058423797,(Dacryopinax primogenitus_EJT98091.1:1.1913607623,(Ramaria rubella_KAF8573882.1:1.0275345442,Rhizoctonia solani_QRW27333.1:0.8270407859)/0.358:0.1447194525)/1:0.2235055844)/0.804:0.0669453759,(Malassezia globosa CBS 7966_EDP42310.1:1.0224127296,(Tilletiaria anomala UBC 951_KDN44739.1:0.7773542095,Ustilago maydis 521_KIS67531.1:0.7590723549)/0.968:0.1555842370)/1:0.2343174233)/1:0.1622041078,((Thamnocephalis sphaerospora_RKP09827.1:0.4090787737,Syncephalis pseudoplumigaleata_RKP23476.1:0.8638109818)/0.99:0.1977463829,Piptocephalis cylindrospora_RKP14562.1:1.4786453719)/1:0.3129743916)/0.987:0.0437659978)/0.999:0.0491577101)/0.843:0.0470534561,((((((((Dissophora ornata_KAF8941018.1:0.3572405076,Gamsiella multidivariata_KAG0358139.1:0.1717321689)/0.999:0.0261763980,(((Mortierella sp. NVP85_KAF9358882.1:0.3896981619,Mortierella sp. GBA43_KAG0246494.1:0.3480905803)/1:0.1117896466,Modicella reniformis_KAF9984788.1:0.4199235042)/1:0.1231197741,Dissophora globulifera_KAG0321514.1:0.4453877602)/1:0.0730130165)/0.997:0.0133438180,((((Entomortierella lignicola_KAF8977811.1:0.0087779939,Haplosporangium sp. Z 27_KAF9204473.1:0.0227874432)/1:0.1310623219,(Mortierella sp. AM989_KAF9109758.1:0.2297065793,(((Mortierella sp. AD010_KAF9168811.1:0.0000026301,Mortierella sp. AD011_KAF9397645.1:0.0000030403)/1:0.0463202917,Entomortierella chlamydospora_KAG0005093.1:0.0106341780)/1:0.0795954601,Mortierella sp. AD094_KAF9349053.1:0.0553261487)/1:0.1234989045)/1:0.0528705163)/1:0.0386335950,Entomortierella beljakovae_KAF9436387.1:0.4431338265)/1:0.0787331970,Lobosporangium transversale_ORZ16142.1:0.4904590248)/1:0.0304814785)/0.999:0.0208531331,(((Haplosporangium sp. Z 767_KAF9187703.1:0.0012337077,Haplosporangium sp. Z 11_KAF9190671.1:0.0000033183)/1:0.0555154027,Mortierella polycephala_KAG0249375.1:0.0691867882)/1:0.3104378012,(Mortierella antarctica_KAF9991178.1:0.2956109417,Mortierella sp. GBA30_KAG0209919.1:0.3195875096)/1:0.1467859056)/1:0.0945391701)/0.961:0.0219081986,((Lunasporangiospora selenospora_KAF9585190.1:0.3238695860,Jingerdemannia flammicorona_RUP51772.1:2.8570623838)/0.761:0.2389958295,Gryganskiella cystojenkinii_KAG0057282.1:0.5739865048)/0.997:0.0940044043)/1:0.0480426532,((((Haplosporangium bisporeale_KAF8977269.1:0.0683239090,Podila verticillata NRRL 6337_KFH65266.1:0.0000032897)/1:0.1391526180,(Podila horticola_KAF9322379.1:0.0858199883,(Podila clonocystis_KAG0021926.1:0.1126159187,(Podila epicladia_KAG0089454.1:0.0778248597,Podila minutissima_KAG0351226.1:0.0573429604)/1:0.0222025698)/1:0.0156922441)/1:0.0207941731)/1:0.0986852616,Podila humilis_KAG0341131.1:0.3939442103)/1:0.0452587157,Podila epigama_KAF9427549.1:0.4141463642)/1:0.1323699419)/0.989:0.0288717459,((((Haplosporangium gracile_KAF8945158.1:0.0517643843,Linnemannia schmuckeri_KAF9141753.1:0.0516853799)/1:0.0710487707,(((Mortierella sp. GBA39_KAF9124027.1:0.0284567467,Linnemannia hyalina_KAG9065321.1:0.0166458967)/0.439:0.0059171893,Mortierella hygrophila_KAF9538988.1:0.0305175977)/1:0.0392059899,Linnemannia elongata AG-77_OAQ27994.1:0.0657411173)/1:0.0643718069)/1:0.0675232581,Linnemannia gamsii_KAG0282522.1:0.1615374039)/1:0.1696965326,((Mortierella sp. 14UC_KAF9133335.1:0.0876765732,Linnemannia zychae_KAF9907634.1:0.1230236437)/1:0.1682850799,(Linnemannia exigua_KAG0279007.1:0.0329717148,Mortierella sp. AD032_KAG0372548.1:0.0463547253)/1:0.0443704586)/1:0.0659282859)/0.993:0.0385882979,(Mortierella sp. AD031_KAF9083487.1:0.0027642500,Mortierella sp. GBA35_KAF9107327.1:0.0021784860)/1:0.3527275738)/1:0.1582617265)/1:0.2531456839,(Actinomortierella wolfii_KAG0244055.1:0.2351126532,Actinomortierella ambigua_KAG0253601.1:0.2686820552)/1:0.4223215464)/1:0.6402162795)/1:0.1018167067)/1:0.2411779918,(Umbelopsis isabellina_KAG2175711.1:0.4442434848,Umbelopsis vinacea_KAG2186659.1:0.4574008215)/1:0.4694987307)/1:0.1166492966,((Absidia

glauca_SAL95528.1:0.3201274232,Absidia
repens_ORZ16587.1:0.3367417370)/1:0.1991636101,Hesseltinella
vesiculosa_ORX46032.1:0.6151140709)/1:0.2191166145)/1:0.0625810078,
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BC1015_KAG0175564.1:0.0000025384,Apophysomyces sp.
BC1021_KAG0183365.1:0.0014223819)/1:0.1595797384)/1:0.2504701591,Phycomyces
blakesleeanus NRRL 1555_OAD77591.1:0.4832307731)/1:0.0973860253,(Mucor
circinatus_KAG2224874.1:0.5587853125,Synccephalastrum
racemosum_ORY93132.1:0.5464031748)/1:0.0929361892)/0.781:0.0618766136)/
1:0.2221227358,(Rhizopus delemar RA 99-880_EIE83137.1:0.4070220012,(Rhizopus
microsporus ATCC 52813_PHZ16600.1:0.0252740025,Rhizopus
azygosporus_RCH97419.1:0.0335651147)/1:0.1650549957)/1:0.3634925183)/
1:0.1185345094,Choanephora
cucurbitarum_OBZ86660.1:0.3807291621)/0.958:0.0773048324,(Mucor
saturninus_KAG2197998.1:0.2896035518,Thamnidium
elegans_KAG2228930.1:0.3430958931)/1:0.2107378919)/1:0.2295576715,(Parasitella
parasitica_CEP15304.1:0.1761141803,Mucor
plumbeus_KAG2203997.1:0.1643846970)/0.999:0.0497662574)/1:0.1211449176,Mucor
lusitanicus_KAF1805445.1:0.1016018452);

REV1

(Anaeromyces robustus_ORX71674.1:0.3022694368,((Rozella allomyces
CSF55_EPZ33259.1:2.4129110969,(((((((Spizellomyces punctatus DAOM
BR117_KNC96285.1:0.0758921585,Spizellomyces sp.
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microbalum_TPX32278.1:0.6623692956,Synchytrium
endobioticum_TPX41824.1:0.7838840092)/1:1.1302589965)/1:0.4009653395,
(Chytrium confervae_TPX73373.1:1.0600408417,Rhizoclostridium
globosum_ORY36367.1:0.7803764709)/1:1.1777681370)/1:0.2595567024,Caulochytrium
protostelioides_RKP02661.1:2.4396188990)/1:0.4548762571,((Basidiobolus
meristosporus CBS 931.73_ORY06463.1:1.7804263255,(Syncephalis
pseudoplumigaleata_RKP27377.1:1.0969289642,Thamnocephalis
sphaerospora_RKP06391.1:1.0669553488)/1:1.0740351199)/1:0.3868200549,Paramicrosp
oridium
saccamoebae_PJF17322.1:3.0724352088)/0.993:0.2169514961)/0.944:0.0468388807,
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lusitanicus_KAF1805498.1:0.1193289931)/1:0.2207705050,Parasitella
parasitica_CEP18316.1:0.3531493908)/0.876:0.0728925403,Mucor
plumbeus_KAG2215102.1:0.2208427580)/1:0.4477336565,Choanephora
cucurbitarum_OBZ82755.1:0.7137128485)/0.989:0.0958761647,(Mucor
saturninus_KAG2198709.1:0.7306629778,Thamnidium
elegans_KAG2229942.1:0.6722710084)/1:0.1900903843)/1:0.1491992118,(Rhizopus
microsporus ATCC 52813_PHZ11168.1:0.0934422165,(Rhizopus
azygosporus_RCH86140.1:0.0658851092,Rhizopus
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minor_KAG2219697.1:1.1918523158,Synccephalastrum
racemosum_ORZ03555.1:0.8216024693)/1:0.2049755959)/1:0.1642571699)/
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isabellina_KAG2180052.1:0.6752473341)/1:0.8878234411)/1:0.1729957269,((Olpidium
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flammicorona_RUP45435.1:0.3878421470,Endogone sp. FLAS-

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 reniformis_KAF9984948.1:0.3409279408)/1:0.2164400031)/1:0.0531353918,(Dissophora
 globulifera_KAG0321679.1:0.5283776855,Lobosporangium
 transversale_ORZ27840.1:0.5542051772)/0.939:0.0665169575)/0.995:0.0617020028,
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 AD094_KAF9356858.1:0.1085011633)/1:0.1785260600)/1:0.0720184420)/1:0.0927627564,
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 beljakovae_KAF9434802.1:0.6029379451)/1:0.2136034418)/1:0.1414149903,
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 schmuckeri_KAF9147615.1:0.0495578351)/0.983:0.0373498654,Linnemannia
 gamsii_KAG0284319.1:0.1917743067)/0.912:0.0191901678,((Mortierella sp.
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 14UC_KAF9125676.1:0.0795262305,Linnemannia
 zychae_KAF9900957.1:0.1459886237)/1:0.0543750050,(Linnemannia
 exigua_KAG0272814.1:0.0866923319,Mortierella sp.
 AD032_KAG0371091.1:0.0756173502)/1:0.0687807315)/1:0.1100513054)/1:0.1313695984,
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 polycephala_KAG0257811.1:0.1016218533)/1:0.4817072705,(Mortierella
 antarctica_KAF9989297.1:0.3907159127,Mortierella sp.
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 Gryganskiella cystojenkinii_KAG0045659.1:0.6834474418)/1:0.1569627100,
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 horticola_KAF9311417.1:0.1047483839,(Podila
 clonocystis_KAG0021977.1:0.1011461684,Podila
 minutissima_KAG0352655.1:0.0898295374)/0.987:0.0158689597)/1:0.0692669522)/
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 epigama_KAF9425206.1:0.5171085440)/1:0.3572595122)/0.996:0.1355390671,Lunasporan
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 ambigua_KAG0256333.1:0.3022063300)/1:0.5576958461)/1:1.1224001542)/
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 pombe_CAA22130.2:1.2442798064,Schizosaccharomyces japonicus
 yFS275_EEB08738.1:1.2991228355)/1:1.2402054569,((Candida albicans
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 VdLs.17_EGY22729.1:0.5216185889)/1:0.1496455885)/1:0.1883109629,(Blumeria
 graminis f. sp. triticales_CAD6504149.1:1.2573380698,Sclerotinia sclerotiorum
 1980_UF-70_EDN96373.1:0.3919721805)/1:0.2485893879)/1:0.0947269578,
 (((Aspergillus nidulans FGSC A4_EAA59218.1:0.6780631622,Coccidioides immitis
 RS_EAS35739.3:0.4793844513)/1:0.2318745825,Exophiala dermatitidis
 NIH/UT8656_EHY59900.1:0.6979009486)/0.865:0.0844694652,(Zymoseptoria tritici
 IP0323_EGP86877.1:0.6808972072,Bacidia

gigantensis_KAG8532688.1:0.5697856427)/1:0.1555110414)/0.997:0.0923801931)/
1:0.5525280841,(Orbilia oligospora ATCC 24927_EGX48330.1:0.1770511049,
(Drechslerella brochopaga_KAF3905979.1:0.2570588897,Arthrobotrys
entomopaga_KAF3928173.1:0.2375480671)/0.981:0.0777992703)/1:1.0568709711)/
1:0.2093812011,Neolecta irregularis
DAH-3_OLL22619.1:1.4836026201)/0.998:0.1666028599,Tuber
melanosporum_CA283226.1:1.7186583304)/1:0.2478194171)/1:0.4150245650,
((((Cryptococcus neoformans var. grubii H99_AFR92314.2:1.8226681627,
((((Coprinosporia cinerea okayama7#130_EAU81859.1:0.6141866963,Amanita muscaria
Koide BX008_KIL68526.1:1.3612379871)/0.998:0.1698679395,Serpula lacrymans var.
lacrymans S7.9_EG021833.1:0.6092111542)/1:0.3601202918,Ramaria
rubella_KAF8579478.1:0.8987587601)/1:0.1684801387,Rhizoctonia
solani_QRW26746.1:1.6664445475)/1:0.1563856288,Dacryopinax
primogenitus_EJU05804.1:0.8815305712)/1:0.3865796825)/0.978:0.1008871270,
((Puccinia graminis f. sp. tritici CRL 75-36-700-
3_EFP81154.2:0.9209415386,Melampsora larici-populina
98AG31_EGG07252.1:0.8633579544)/1:1.0053302245,Mixia osmundae IAM
14324_KEI39728.1:1.8509563356)/1:0.4494395064)/1:0.1560314396,(Malassezia
globosa CBS 7966_EDP45583.1:2.2232589865,Tilletiaria anomala UBC
951_KDN48842.1:1.4747901346)/1:0.7585427144)/0.681:0.1411193379,Wallemia
ichthyophaga
EXF-994_EOR04140.1:2.7014556767)/1:0.2984004332)/1:0.2146175351)/0.912:0.0769087
459,((Linderina pennispora_ORX73924.1:0.8946340453,Coemansia reversa NRRL
1564_PIA13782.1:0.9976652761)/1:1.2046019488,Dimargaris
cristalligena_RKP37076.1:2.1815058938)/1:0.7445258784)/0.994:0.0981875120,
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ATCC 38327_KNE69354.1:0.3398295703)/1:1.2487835512,Catenaria anguillulae
PL171_ORZ38105.1:1.4994420926)/1:1.0821758519,Gonapodya prolifera
JEL478_KXS11055.1:1.9895254284)/0.988:0.2693553996)/1:0.1401065073)/
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sapiens_NP_057400.1:0.0955735649,Mus
musculus_NP_062516.2:0.1297669997)/1:1.3304002755)/1:0.7646489882)/
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finnis_ORX58569.1:0.3489755500,Piromyces sp.
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californiae_ORY27023.1:0.0000025056)/1:0.4922308799);

REV3

(Mortierella antarctica_KAF9982575.1:0.4711426731,((((Gamsiella
multidivariata_KAG0363797.1:0.2665078327,(Mortierella sp.
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reniformis_KAF9956249.1:0.3705135318)/1:0.1103617620,Haplosporangium sp. Z
11_KAF9185070.1:0.3617009764)/1:0.0556564309,(Gryganskiella
cystojenkinii_KAG0052062.1:0.4924728199,Linnemannia
exigua_KAG0255800.1:0.3144646893)/1:0.0838691968)/0.864:0.0262598264,
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azygosporus_RCH93903.1:0.0454508548)/1:0.0377561006,Rhizopus microsporus ATCC
52813_PHZ08955.1:0.0421684500)/0.525:0.0167002671)/0.528:0.0068422281,Rhizopus
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ambiguus_GAN09365.1:0.1977626257,Mucor
lusitanicus_KAF1799869.1:0.0347250081)/1:0.0823058244,(Parasitella
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plumbeus_KAG2194480.1:0.1572895401)/0.999:0.0520442992)/1:0.2565646360,Choanepho
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 finnis_ORX46867.1:0.3307958115)/0.985:0.0621029189)/1:2.5101991475,((Gonapodya
 prolifera_JEL478_KXS22183.1:1.3718253897,(Caulochytrium
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 globosum_ORY46572.1:0.6037966213,(Chytridiomycetes
 confervae_TPX68633.1:0.4808211388,Rhizoclostridium
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 margarita_KAF0378306.1:0.5201460585,Yarrowia lipolytica
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 rubella_KAF8581637.1:0.9410531274)/1:0.2017148064,Rhizoctonia

solani_QRW19011.1:1.2646434533)/1:0.1944374915,Dacryopinax
primogenitus_EJU02050.1:1.1649250100)/1:0.1723900224,Wallema ichthyophaga EXF-
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grubii H99_AFR93380.1:1.4706458448)/1:0.1847049150)/1:0.1486809431,
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Vdls.17_EGY20914.1:0.5794569571)/1:0.2218167002,(Blumeria graminis f. sp.
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70_ED001534.1:0.6494952268)/0.999:0.0869155045)/1:0.1620726649,((Aspergillus
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RS_EAS35045.3:0.5719905344)/1:0.1798554039,Exophiala dermatitidis
NIH/UT8656_EHY60912.1:0.5657047096)/1:0.0795736845,Bacidia
gigantensis_KAG8534241.1:0.6382800231)/1:0.0804269729)/1:0.0844114703,Zymoseptor
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entomopaga_KAF3917252.1:0.1622674081)/1:0.1020331148,Orbilia oligospora ATCC
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melanosporum_CAZ85646.1:1.2500806351)/0.722:0.1063169462)/1:0.1654896010,Neolact
a irregularis DAH-3_OLL22088.1:0.9207177154)/1:0.2881965930,(Schizosaccharomyces
japonicus yFS275_EEB05155.1:1.5922697477,Schizosaccharomyces
pombe_CAB90776.1:1.1991546231)/1:1.3803095058)/0.978:0.0890324467,
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/1:0.0874574216)/1:0.8414088833,Actinomortierella
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SLX1

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SLX4

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70_EDN95873.1:0.7361491244)/0.993:0.2133733541,(Neurospora crassa
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VdLs.17_EGY15391.1:1.0882570539)/0.999:0.2124498219)/0.998:0.1507835112,
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 queenslandica_XP_019855666.1:2.0354099565)/0.662:0.0965292792,Drosophila
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 cerebriforme_RIA99142.1:0.2131534947)/1:1.6942154923)/0.977:0.4364267346,Geosiph
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 elongata
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 gamsii_KAG0294069.1:0.1848295652)/1:0.1003343980,((Mortierella sp.
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 zychae_KAF9909362.1:0.1913884233)/1:0.0499824844,(Linnemannia
 exigua_KAG0278966.1:0.1076133497,Mortierella sp.
 AD032_KAG0378424.1:0.0679839876)/1:0.0750975101)/1:0.1303832335)/1:0.0904707313,
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 reniformis_KAF9948424.1:0.3916021982)/1:0.2683320903,Lobosporangium
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diaphanus_RGB42146.1:0.0211638502)/0.972:0.0873899210, Glomus
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nia flammicorona_RUS34494.1:2.7068887342)/0.611:0.1660815053, Bifiguratus
adelaidae_OZJ03080.1:1.6046968327)/1:0.3679913651)/0.699:0.0917732755,
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helicus_RK092700.1:1.2978536939, (Synchytrium
microbalum_TPX36927.1:0.9931873309, Synchytrium
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38327_KNE55792.1:0.1086605412, Allomyces macrogynus ATCC
38327_KNE58596.1:0.0980284591)/1:1.3004616684, Catenaria anguillulae
PL171_ORZ39386.1:1.4266655535)/1:1.3504504712)/0.548:0.1110289498, Endogone sp.
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glauca_SAM04252.1:0.4586630749, Absidia
repens_ORZ18742.1:0.5972352702)/1:0.2892385833, ((Hesselтинella
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lusitanicus_KAF1800200.1:0.1308063559);

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197198_POG77238.1:0.0110815803, Rhizophagus
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epigaea_RHZ70594.1:0.5087496554)/1:0.0736553179, Geosiphon
pyriformis_KAG9300435.1:0.8112527220)/0.862:0.0725353350)/1:0.5243505483,
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japonicus yFS275_EEB05778.1:1.1453798697)/1:1.1484446452, Pneumocystis carinii
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70_EDN93717.1:0.4152190215)/0.994:0.0903847646,(*Neurospora crassa*
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QM6a_EGR46090.1:0.5207541562,*Verticillium dahliae*
VdLs.17_EGY17563.1:0.4071575986)/0.996:0.0820820074)/1:0.2675347857)/
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boomerangus_PVU98469.1:0.0023331861,*Smittium*
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populina 98AG31_EGG07426.1:0.9027595458)/1:0.6055754749,*Mixia osmundae* IAM
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698-R_EED79602.1:0.6130294046)/0.995:0.1422186203,*Amanita muscaria* Koide
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himedon
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*globosum*_ORY38779.1:0.5675188288,(*Chytridiomyces*
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rosea_RIB04901.1:0.1025604196)/1:0.3266927058)/0.933:0.3011523883,Diversispora
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((((Lobosporangium transversale_ORZ24902.1:0.7698606842,((Entomortierella
lignicola_KAF8977123.1:0.8460536225,((Mortierella sp.
AD010_KAF9162854.1:0.0000034023,Mortierella sp.
AD011_KAF9388804.1:0.0000030125)/1:0.0823457443,Entomortierella
chlamydospora_KAF9995070.1:0.0414616449)/1:0.0969249657,Mortierella sp.
AD094_KAF9346149.1:0.1293334890)/1:0.2064407087)/1:0.1579106310,Mortierella sp.
AM989_KAF9111692.1:0.5793301614)/1:0.2488068142,Entomortierella
beljakovae_KAF9438090.1:1.3341299183)/0.665:0.1100196497)/0.388:0.0837199440,
((((((((Linnemannia elongata AG-77_OAQ28995.1:0.0284027419,(Mortierella sp.
GBA39_KAF9146431.1:0.0426656696,(Mortierella
hygrophila_KAF9549655.1:0.0423081610,Linnemannia
hyalina_KAG9062529.1:0.0371838460)/0.996:0.0136530300)/0:0.0000035363)/
1:0.1402099433,(Haplosporangium gracile_KAF8932398.1:0.0826136508,Linnemannia
schmuckeri_KAF9137329.1:0.1015408663)/1:0.0824205541)/1:0.0638711173,Linnemannia
gamsii_KAG0288676.1:0.2632304347)/1:0.1236223190,((Mortierella sp.
14UC_KAF9124681.1:0.1808243627,Linnemannia
zychae_KAF9910042.1:0.1940414727)/1:0.0627242369,(Linnemannia
exigua_KAG0270930.1:0.1473850473,Mortierella sp.
AD032_KAG0377997.1:0.1087408898)/1:0.1203425766)/1:0.1378391868)/1:0.1421122992,
((Mortierella sp. GBA35_KAF9089956.1:0.1501959524,Mortierella sp.
AD031_KAF9094564.1:0.0015629204)/0.749:0.0014642853,Mortierella sp.
NVP41_KAG0220176.1:0.0000032021)/1:0.2864548681)/1:0.3926322178,(Haplosporangium
bisporale_KAF8987345.1:0.2600836623,((Podila
horticola_KAF9318644.1:0.5371156871,Podila
clonocystis_KAG0014511.1:0.0871161309)/0.291:0.0245419739,(Podila
epicladia_KAG0098404.1:0.0594087488,Podila
minutissima_KAG0359321.1:0.0883277161)/0.999:0.1728212674)/1:0.4798251704)/
1:1.4851250531)/0.997:0.3158363388,((Haplosporangium sp. Z
767_KAF9193720.1:0.0057836592,Haplosporangium sp. Z

11_KAF9194423.1:0.0022833077)/0.981:0.0871436459,Mortierella
polycephala_KAG0260589.1:0.1255645553)/1:1.1963308799)/1:0.2249249849,
(Dissophora ornata_KAF8931003.1:0.9481132106,(((Mortierella sp.
NVP85_KAF9363092.1:0.8415096473,Mortierella sp.
GBA43_KAG0217820.1:0.6662715846)/0.968:0.1174110703,Modicella
reniformis_KAF9931513.1:0.6684987450)/1:0.3727447094,Gamsiella
multidivariata_KAG0369476.1:0.9381117060)/0.559:0.0586231338,Dissophora
globulifera_KAG0320379.1:1.2201990015)/0.805:0.1225018373)/0.93:0.0476086887)/
0.999:0.1599478801)/0.947:0.2468602448,Actinomortierella
wolfii_KAG0239348.1:3.0520253849)/1:0.4871692096,(Dimargaris
cristalligena_RKP33913.1:0.7241464011,Dimargaris
cristalligena_RKP37486.1:0.0290737516)/1:2.2616772593)/0.941:0.1319752966,
((((((((Apophysomyces ossiformis_KAF7725770.1:0.3098981699,Apophysomyces sp.
BC1015_KAG0172427.1:0.5080811237)/1:0.3919708280,Phycomyces blakesleeanus NRRL
1555_OAD75043.1:1.1538535333)/0.994:0.2970780421,((((Mucor
ambiguus_GAN00685.1:0.1758453553,Mucor
lusitanicus_KAF1807134.1:0.2951518799)/1:0.6185438530,Mucor
plumbeus_KAG2191613.1:0.2086668820)/0.933:0.2357330389,Parasitella
parasitica_CEP16216.1:0.2811350238)/1:0.6372395281,Mucor
saturninus_KAG2193625.1:1.3103588211)/0.554:0.1849257534,(Choanephora
cucurbitarum_OBZ80388.1:0.0000038393,Choanephora
cucurbitarum_OBZ88305.1:0.0099494954)/1:0.7381487154)/0.991:0.2567018487,
((Rhizopus microsporus ATCC 52813_PHZ12538.1:0.0000037738,Rhizopus
azygosporus_RCI00311.1:0.0253026139)/0:0.0000031875,Rhizopus
azygosporus_RCH92618.1:0.0581842786)/1:1.0158327774)/1:0.7462181351)/
0.967:0.4637589787,Syncephalastrum
racemosum_ORZ02420.1:1.7205733756)/0.686:0.2296494523,((Absidia
glaucia_SAM08754.1:1.8166236266,Absidia
repens_ORZ22108.1:1.1294306925)/1:0.6389045575,Hesseltinella
vesiculosa_ORX43014.1:2.3364286560)/0.948:0.3062140965)/1:0.1974113444,(Mucor
circinatus_KAG2222156.1:1.5667622520,(Smittium simulii_PVU92793.1:1.7473371757,
(Furculomyces boomerangus_PVU96021.1:0.0007715828,Smittium
angustum_PWA01309.1:0.0042255923)/1:1.0787787009)/1:1.5367624575)/
0.993:0.2944157289)/0.756:0.1231452098,(Conidiobolus coronatus NRRL
28638_KXN69474.1:2.6453812328,Coemansia reversa NRRL
1564_PIA17634.1:3.7628630414)/0.998:1.4891997494)/1:0.3325156511,(Umbelopsis
isabellina_KAG2176276.1:0.6900279091,Umbelopsis
vinacea_KAG2187432.1:0.9840398042)/1:0.7488553653)/1:0.3410045408,Jimgerdemannia
flammicorona_RUP46715.1:1.7887869332)/0.996:0.1609132634)/0.454:0.0475249171)/
0.817:0.0778463993,Basidiobolus meristosporus CBS
931.73_ORX87830.1:1.5848028307)/0.994:0.2100308857,((((Neocallimastix sp. JGI-
2020a_KAG4104728.1:0.0000033910,Neocallimastix
californiae_ORY80140.1:0.2537770160)/1:0.2727688342,Piromyces sp.
E2_OUM59557.1:0.0000038665)/0.989:0.0635617724,Piromyces
finnis_ORX60002.1:0.1185519927)/0.701:0.0902292178,Anaeromyces
robustus_ORX87042.1:0.0184325267)/1:1.7944248566)/0.97:0.2018409459,
(((Entomophthora muscae_KAF7746143.1:0.0213557806,Entomophthora
muscae_KAF7756356.1:0.0150015308)/1:2.9833042964,(Piptocephalis
cylindrospora_RKP15093.1:2.5655720064,Chytrium
confervae_TPX73553.1:2.7868824439)/0.809:0.3971589241)/0.878:0.2098399082,
(Gonapodya prolifera_JEL478_KXS20353.1:2.6118526468,(Synchytrium
microbalum_TPX30665.1:1.2141824768,Synchytrium
endobioticum_TPX50958.1:1.3705538639)/1:0.9975889502)/0.849:0.3032449512)/
0.985:0.1499199086)/1:1.8731414322);

UHRF1

(Rhizophagus clarus_GES98839.1:0.0863605463,((((((((((((((((Tuber
melanosporum_CAZ81145.1:0.7084434768,Neolecta irregularis DAH-
3_OLL24290.1:0.6803002727)/1:0.3363556980,(((Gigaspora
margarita_KAF0492460.1:0.0255509794,Gigaspora

rosea_RIB16757.1:0.0543651706)/1:0.4134530163,((Rhizophagus irregularis DAOM
 181602=DAOM 197198_POG66335.1:0.0199666044,Rhizophagus
 diaphanus_RGB34248.1:0.0000021069)/1:0.1293017704,Glomus
 cerebriforme_RIA88323.1:0.1516536770)/1:0.3084900332)/0.749:0.0806253278,Diversi
 spora epigaea_RHZ83652.1:0.4850674548)/1:0.2683444500,Geosiphon
 pyriformis_KAG9302660.1:0.6148644104)/0.957:0.1572600531)/0.996:0.1412853035,
 (((Cryptococcus neoformans var. grubii H99_AFR92806.2:0.8609865838,Ramaria
 rubella_KAF8591869.1:0.4760351248)/0.995:0.1290375264,(((Coprinosia cinerea
 okayama7#130_EAU93010.2:0.5913585257,(Serpula lacrymans var. lacrymans
 S7.9_EG029217.1:0.7143047547,Amanita muscaria Koide
 BX008_KIL70800.1:0.3417256362)/0.522:0.0830740607)/0.993:0.0822926967,(Postia
 placenta Mad-698-R_EED77985.1:0.0000021303,Postia placenta Mad-698-
 R_EED79579.1:0.0229111164)/1:0.6464440382)/0.295:0.0343316398,Rhizoctonia
 solani_QRW23708.1:0.6177911850)/0.898:0.0742772323,((Serpula lacrymans var.
 lacrymans S7.9_EG024569.1:1.9225898836,Amanita muscaria Koide
 BX008_KIL59367.1:1.7413440267)/0:0.0000023456,Dacryopinax
 primogenitus_EJU01741.1:0.3940333459)/1:0.3374485855)/0.966:0.0480199376)/
 0.906:0.0680569868,(Serpula lacrymans var. lacrymans
 S7.9_EG024537.1:1.4976735923,Ramaria
 rubella_KAF8591878.1:0.3074890446)/1:0.4530612205)/1:0.1014459555,(Puccinia
 graminis f. sp. tritici CRL 75-36-700-3_EFP86608.2:0.7869485093,(Melampsora
 larici-populina 98AG31_EGG03470.1:0.0053435805,Melampsora larici-populina
 98AG31_EGG03472.1:0.0000026777)/1:0.7087674616)/1:0.3403510651)/1:0.0997801028)/
 0.967:0.0477828874,(Blyttomyces helicus_RK087597.1:0.6740422735,Endogone sp.
 FLAS-F59071_RUS13915.1:0.7433802172)/0.91:0.1233653307)/1:0.1273733452,
 (((Spizellomyces punctatus DAOM BR117_KNC97706.1:0.0878856574,Spizellomyces sp.
 'palustris'_TPX70147.1:0.0914411537)/1:0.3422318632,Powellomyces
 hirtus_TPX57111.1:0.4438744181)/1:0.2343830152,(Gonapodya prolifera
 JEL478_KXS15836.1:0.8372660649,Gonapodya prolifera
 JEL478_KXS15837.1:0.5126939201)/0.993:0.3799674500)/0.999:0.1542466361)/
 0.97:0.1164688117,(Entomophthora muscae_KAF7745688.1:0.0000030487,Entomophthora
 muscae_KAF7751697.1:0.0155161588)/1:0.9120618903)/0.953:0.1644829502,((Allomyces
 macrogynus ATCC 38327_KNE55589.1:0.2034884638,Allomyces macrogynus ATCC
 38327_KNE58396.1:0.0933286283)/1:0.4138772858,Catenaria anguillulae
 PL171_ORZ34731.1:1.1070430276)/1:0.8632985663)/0.993:0.1747440923,Neolecta
 irregularis DAH-3_OLL23852.1:1.2968550290)/0.989:0.1916096972,(Coprinosia
 cinerea okayama7#130_EAU81689.1:1.0686249650,Postia placenta Mad-698-
 R_EED78905.1:1.0567112080)/1:0.7325722325)/0.97:0.1270950920,((((((Tuber
 melanosporum_CAZ84611.1:1.2574968322,Bacidia
 gigantensis_KAG8533905.1:0.8581622558)/1:0.6573155760,Exophiala dermatitidis
 NIH/UT8656_EHY58608.1:1.4727605224)/0.938:0.2574055071,(Tuber
 melanosporum_CAZ85865.1:1.0644393149,(Zymoseptoria tritici
 IPO323_EGP85349.1:1.2361921022,Bacidia
 gigantensis_KAG8530138.1:1.1097094483)/0.997:0.2984045184)/0.984:0.1296213507)/
 1:0.3233789608,(Puccinia graminis f. sp. tritici CRL 75-36-700-
 3_EFP82430.2:1.0699463061,Puccinia graminis f. sp. tritici CRL 75-36-700-
 3_EFP89919.1:0.9724132486)/1:0.7625746858)/0.422:0.0519772260,(Orbilbia
 oligospora ATCC 24927_EGX50774.1:1.3625753632,Arthrotrichum
 entomopaga_KAF3914702.1:0.8962017153)/1:1.3674735424)/0.991:0.1070119476,Neolect
 a irregularis DAH-3_OLL25679.1:1.7249534427)/0.997:0.1068713801)/1:0.3732914555,
 ((Apophysomyces ossiformis_KAF7722263.1:0.6245262416,Mucor
 circinatus_KAG2216217.1:0.9513903656)/0.325:0.0686229399,Phycomyces
 blakesleeianus NRRL 1555_OAD78800.1:0.5223081945)/1:0.6003233195,Endogone sp.
 FLAS-F59071_RUS16724.1:1.1416217242)/1:0.3236160139)/0.319:0.0523757289,Entomoph
 thora muscae_KAF7748579.1:1.5805326838)/0.985:0.1559208774,(Blyttomyces
 helicus_RK085294.1:0.6845849802,(Homo sapiens_NP_037414.3:0.1484757067,Mus
 musculus_NP_001104549.1:0.1533040642)/1:0.5279646049)/0.996:0.1470408098)/
 1:0.1148199946,((((((((Haplosporangium
 gracile_KAF8942923.1:0.0611638518,Linnemannia
 schmuckeri_KAF9151706.1:0.0678238582)/1:0.0268093647,(((Mortierella sp.
 GBA39_KAF9135029.1:0.0668453315,(Mortierella
 hygrophila_KAF9547005.1:0.0897019608,Linnemannia
 hyalina_KAG9071309.1:0.0431406361)/1:0.0229022624)/1:0.0965576934,Linnemannia
 elongata AG-77_OAQ23967.1:0.1788324317)/1:0.1202393124,Linnemannia

gamsii_KAG0280772.1:0.2678959985)/0.99:0.0566251042)/1:0.1634821815,
((Mortierella sp. 14UC_KAF9128393.1:0.0587641091,Linnemannia
zychae_KAF9911712.1:0.2848359947)/1:0.0528725818,(Linnemannia
exigua_KAG0273158.1:0.0832262083,Mortierella sp.
AD032_KAG0377022.1:0.1294322914)/1:0.1788428920)/1:0.1841568550)/1:0.2622012901,
(Mortierella sp. AD031_KAF9081301.1:0.0292457181,(Mortierella sp.
GBA35_KAF9101601.1:0.0048170284,Mortierella sp.
NVP41_KAG0208771.1:0.0000025982)/0.13:0.0000022537)/1:0.5732198304)/
1:0.7920164425,Dissophora globulifera_KAG0327314.1:0.3048546122)/1:0.2862930074,
(((Entomortierella lignicola_KAF8985371.1:0.0367315676,Haplosporangium sp. Z
27_KAF9201264.1:0.0000624719)/1:0.2071941093,Mortierella sp.
AD094_KAF9344554.1:0.2456698429)/1:0.0729991381,Entomortierella
beljakovae_KAF9432920.1:0.2423160967)/1:0.1333239133)/0.997:0.1067039927,
((Haplosporangium bisporale_KAF8953255.1:0.0108981073,Podila verticillata NRRL
6337_KFH69196.1:0.0023634541)/1:0.2323102925,(Podila
horticola_KAF9320230.1:0.0463405458,(Podila
clonocystis_KAG0026230.1:0.0556611131,(Podila
epicladia_KAG0099849.1:0.0228396861,Podila
minutissima_KAG0359199.1:0.0367937087)/1:0.0248227063)/0.861:0.0137169301)/
1:0.1149737142)/1:0.3814793647)/0.999:0.1146114133,Gryganskiella
cystojenkinii_KAG0046603.1:1.0755458759)/0.995:0.1054453431,(Gryganskiella
cystojenkinii_KAG0047352.1:0.8966037718,Gryganskiella
cystojenkinii_KAG0057329.1:0.9556345245)/0.583:0.1193952908)/1:0.1057922856)/
1:0.0690022533,(((((((Parasitella parasitica_CEP18119.1:0.2471220064,Mucor
lusitanicus_KAF1805708.1:0.4445819779)/0.816:0.0258722547,Mucor
plumbeus_KAG2212464.1:0.1887829508)/1:0.2919566116,(((Rhizopus delemar RA 99-
880_EIE89579.1:0.3420320160,((Rhizopus microsporus ATCC
52813_PHZ09449.1:0.0472676048,Rhizopus
azygosporus_RCH81184.1:0.0453004845)/0.977:0.0135681006,Rhizopus
azygosporus_RCH91102.1:0.0000023677)/1:0.2798543557)/1:0.4566767563,Choanephora
cucurbitarum_OBZ88071.1:0.4627763628)/1:0.1066539082,(Mucor
saturninus_KAG2203637.1:0.3607630569,Thamnidium
elegans_KAG2233688.1:0.3699551075)/1:0.1530378350)/1:0.0922917759)/
1:0.4275415820,((Apophysomyces
ossiformis_KAF7729969.1:0.1692835674,Apophysomyces sp.
BC1015_KAG0165534.1:0.1249787990)/1:0.2929114570,Mucor
circinatus_KAG2220699.1:0.4185895989)/1:0.1039470043)/1:0.1966217705,
((((Jimgerdemannia flammicorona_RU096083.1:0.4701078022,Jimgerdemannia
flammicorona_RUP44194.1:0.0494755850)/0.938:0.1213416168,Jimgerdemannia
flammicorona_RU096084.1:0.1297031671)/1:0.2454723850,Jimgerdemannia
flammicorona_RUP18993.1:0.5017205343)/0.841:0.0418522002,Endogone sp. FLAS-
F59071_RUS17141.1:0.2209482055)/1:0.3394001320)/0.994:0.1136590165,Catenaria
anguillulae_PL171_ORZ37451.1:1.1990759609)/1:0.1173183422,(Gonapodya prolifera
JEL478_KXS19403.1:0.8791390610,Neolecta irregularis DAH-
3_OLL25756.1:1.0290039803)/0.758:0.0513007566)/0.97:0.0285418570,((Linderina
pennisporea_ORX67290.1:0.3457534629,(Linderina
pennisporea_ORX68382.1:1.0041117298,Linderina
pennisporea_ORX72449.1:0.0175460819)/0.984:0.0790344391)/1:0.3494567406,Coemansia
reversa NRRL
1564_PIA18290.1:0.4162351441)/1:0.3600002956)/0.99:0.0343911532)/0.828:0.0555400
201,(((Entomophthora muscae_KAF7752823.1:0.4629115593,((Conidiobolus coronatus
NRRL 28638_KXN73339.1:0.4693992815,Conidiobolus coronatus NRRL
28638_KXN73340.1:0.1273239589)/1:0.3327617187,Conidiobolus coronatus NRRL
28638_KXN73341.1:1.1642676273)/1:0.2706253638)/0.997:0.0978073253,Dimargaris
cristalligena_RKP34926.1:0.5301122167)/0.996:0.0840314629,Basidiobolus
meristosporus CBS
931.73_ORX90637.1:0.4140888022)/1:0.1078789484)/1:0.1501728080,Geosiphon
pyriformis_KAG9289816.1:0.5267435541)/1:0.2069306326,((Gigaspora
margarita_KAF0444535.1:0.0242774516,Gigaspora
rosea_RIB02314.1:0.0191436304)/1:0.3034946283,Diversispora
epigaea_RHZ84872.1:0.3414347827)/0.973:0.0666072699)/1:0.2803232714,Glomus
cerebriforme_RIA81528.1:0.1606205212)/0.814:0.0446267503,(Rhizophagus
irregularis DAOM 181602=DAOM 197198_POG71742.1:0.0106267273,Rhizophagus
diaphanus_RGB27451.1:0.0083179053)/1:0.0421209995);

UHRF2

(Rhizophagus clarus_GES98839.1:0.0785765479,((((((((((((((((Tuber
melanosporum_CA281145.1:0.7870709017,Neolecta irregularis DAH-
3_OLL24290.1:0.6432992432)/1:0.2908203323,(((Gigaspora
margarita_KAF0492460.1:0.0259948960,Gigaspora
rosea_RIB16757.1:0.0490826390)/1:0.4481984543,Diversispora
epigaea_RH283652.1:0.4435655457)/0.796:0.1041948443,((Rhizophagus irregularis
DAOM 181602=DAOM 197198_POG66335.1:0.0190261229,Rhizophagus
diaphanus_RGB34248.1:0.0000026187)/1:0.1309920997,Glomus
cerebriforme_RIA88323.1:0.1482088374)/1:0.2645716928)/1:0.2224683896,Geosiphon
pyriformis_KAG9302660.1:0.5732543950)/0.694:0.0655175511)/0.999:0.1203896653,
(((Cryptococcus neoformans var. grubii H99_AFR92806.2:0.7017037474,Ramaria
rubella_KAF8591869.1:0.4381766758)/0.957:0.1013595995,(((Coprinopsis cinerea
okayama7#130_EAU93010.2:0.3300010971,Serpula lacrymans var. lacrymans
S7.9_EG024537.1:1.7990199478)/0.986:0.2517465807,(Serpula lacrymans var.
lacrymans S7.9_EG029217.1:0.7172648759,Amanita muscaria Koide
BX008_KIL70800.1:0.3051917197)/0.365:0.0714469562)/0.997:0.0877041408,(Postia
placenta Mad-698-R_EED77985.1:0.0000033331,Postia placenta Mad-698-
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primogenitus_EJU01741.1:0.4289565986,Ramaria
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USP1

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reesei QM6a_EGR49253.1:0.8080107062,Verticillium dahliae
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XPF

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 minutissima_KAG0345703.1:0.0229570005)/1:0.0134192764)/0.982:0.0039218341)/
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 epigama_KAF9427926.1:0.1282013895)/1:0.0637461247, (((((Dissophora
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gracile_KAF8940026.1:0.0145768950,Linnemannia
schmuckeri_KAF9147003.1:0.0198966691)/1:0.0056626779,Linnemannia
gamsii_KAG0296422.1:0.0511981220)/0.678:0.0037787452,((Mortierella sp.
GBA39_KAF9140466.1:0.0132642826,(Mortierella
hygrophila_KAF9551216.1:0.0130927457,Linnemannia
hyalina_KAG9063825.1:0.0088163579)/0.134:0.0000024563)/1:0.0155863313,Linnemanni
a elongata AG-77_OAQ26957.1:0.0185113348)/1:0.0065851753)/1:0.0283683532,
((Mortierella sp. 14UC_KAF9125554.1:0.0222763274,Linnemannia
zychae_KAF9913274.1:0.0329002751)/1:0.0086597626,(Linnemannia
exigua_KAG0275130.1:0.0305378936,Mortierella sp.
AD032_KAG0378338.1:0.0157971958)/1:0.0205385534)/1:0.0394829679)/1:0.0336335298,
(Mortierella sp. AD031_KAF9099052.1:0.0016382071,(Mortierella sp.
GBA35_KAF9104749.1:0.0032720896,Mortierella sp.
NVP41_KAG0217532.1:0.0000024743)/0.126:0.0000021364)/1:0.0371347215)/
1:0.1430113196)/0.973:0.0232195894,(Lunasporangiospora
selenospora_KAF9585211.1:0.3680790286,Gryganskiella
cystojenkinii_KAG0050984.1:0.1720164982)/0.846:0.0531242366)/1:0.0725895578)/
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selenospora_KAF9585212.1:0.2625242919)/1:0.1847892762,(Actinomortierella
wolfii_KAG0242467.1:0.0762515247,Actinomortierella
ambigua_KAG0259504.1:0.0843307116)/1:0.2548888248)/0.993:0.2186938574,
(Piptocephalis cylindrospora_RKP11516.1:0.0000020076,Piptocephalis
cylindrospora_RKP11517.1:0.0000029030)/1:1.9846753203)/1:0.5255057469)/
0.988:0.0721226942,((Olpidium bornovanus_KAG5458437.1:0.9352269041,Olpidium
bornovanus_KAG5462829.1:0.0000021081)/0.8:0.4304868329,Piptocephalis
cylindrospora_RKP11404.1:1.2451145153)/0.935:0.4087518733,((((((((Smittium
mucronatum_OLY78857.1:0.2627665350,Smittium
culicis_OMJ16677.1:0.3120431624)/0.905:0.0809905181,Smittium
culicis_OMJ16678.1:0.2782934499)/1:0.3491259441,(Furculomyces
boomerangus_PVU99261.1:0.0000028867,Smittium
angustum_PWA00658.1:0.0028608767)/1:0.6977833769)/1:0.1411754575,(Smittium
simulii_PVU88444.1:0.3953062874,Smittium
megazygosporum_PVV02734.1:0.4899239963)/1:0.2553281415)/1:0.4573292376,Zancudomy
ces culisetiae_OMH80751.1:1.7598090653)/1:0.3482944191,Coemansia reversa NRRL
1564_PIA18493.1:1.3211542507)/1:0.3402850487,Dimargaris
cristalligena_RKP38070.1:0.9780972660)/1:0.2006536450,((Thamnocephalis
sphaerospora_RKP08935.1:0.4605289453,Syncephalis
pseudoplumigaleata_RKP23673.1:0.4026592303)/0.74:0.1195485783,(Syncephalis
pseudoplumigaleata_RKP23098.1:0.0000026692,Syncephalis
pseudoplumigaleata_RKP23345.1:0.0495193335)/1:0.6896155591)/1:0.4335108995)/
1:0.1159242974)/0.959:0.0607274960)/1:0.0990088257,(Basidiobolus meristosporus
CBS 931.73_ORX93909.1:0.4064706519,Sphaeroforma arctica
JP610_XP_014156464.1:1.4937302492)/0.999:0.2907249763)/1:0.0742284900)/
1:0.1669974253,Bifiguratus adelaidae_OZJ03595.1:0.6294116874)/1:0.3647639861,
(Umbelopsis isabellina_KAG2184589.1:0.1704302918,Umbelopsis
vinacea_KAG2188569.1:0.2885578774)/1:0.4170500240)/1:0.3009671362,(((Absidia
glauca_SAM07091.1:0.2420087177,Absidia
repens_ORZ22348.1:0.1570218061)/1:0.1980968741,Hesseltinella
vesiculosa_ORX60262.1:0.5122277310)/1:0.2612893814,((Apophysomyces
ossiformis_KAF7726193.1:0.1533372157,(Apophysomyces sp.
BC1015_KAG0173332.1:0.0027381777,Apophysomyces sp.
BC1034_KAG0192545.1:0.0022900575)/0.993:0.0015192261,Apophysomyces sp.
BC1021_KAG0182633.1:0.0000021789)/1:0.1993177098)/1:0.2140537311,Phycomyces
blakesleeanus NRRL 1555_OAD66009.1:0.9202405830)/1:0.1018590041,(Mucor
circinatus_KAG2226446.1:0.5425386544,Syncephalastrum
racemosum_ORY94875.1:0.4944189188)/1:0.0919749394)/0.996:0.0620139121)/
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880_EIE76768.1:0.2351361397,((Rhizopus microsporus ATCC
52813_PHZ10910.1:0.0000029599,Rhizopus
azygosporus_RCH81815.1:0.0000026535)/0.594:0.0088622720,Rhizopus
azygosporus_RCH93967.1:0.0155869071)/1:0.1641730395)/1:0.2531042865)/
1:0.0894170627,(Mucor saturninus_KAG2213458.1:0.3427889206,Thamnidium
elegans_KAG2230880.1:0.2412328221)/1:0.0702560580)/0.993:0.0583427991,Choanephora
cucurbitarum_OBZ86984.1:0.3204877890)/1:0.1694430709,(Parasitella

parasitica_CEP16749.1:0.1628948757,Mucor
plumbeus_KAG2196440.1:0.0929957914)/0.99:0.0292333922)/1:0.0716889881,Mucor
lusitanicus_KAF1801439.1:0.0817324298);

BRCA1

(Drosophila melanogaster_AAG27544.1:2.0000520955,((Caenorhabditis
elegans_CAR97812.2:2.2421963964,(Pomacea canaliculata_PVD29745.1:1.4153477318,
(Homo sapiens_NP_009225.1:0.2767257146,Mus
musculus_NP_033894.3:0.3475940167)/1:1.0464919712)/0.979:0.1749765641)/
0.679:0.0928330125,((((Amphimedon queenslandica_A0A1X7VV49.2:1.192170920,
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epicladia_KAG0097622.1:0.0797178236,Podila
minutissima_KAG0354002.1:0.0363554137)/1:0.0432320394)/0.906:0.0074417192,Podila
horticola_KAF9315689.1:0.1081781477)/1:0.0569460768,(Haplosporangium
bisporale_KAF9026974.1:0.8679263266,Podila verticillata NRRL
6337_KFH66509.1:0.0198188670)/1:0.1150315845)/1:0.2171685091,Podila
humilis_KAG0338598.1:0.4915093625)/1:0.3464523547,Podila
epigama_KAF9417466.1:0.6679252142)/1:0.3906572223,((((Entomortierella
beljakovae_KAF9438621.1:0.5433033989,((((Mortierella sp.
AD010_KAF9175997.1:0.0549804577,Entomortierella
chlamydospora_KAG0006080.1:0.0208846526)/0.15:0.0012414042,Mortierella sp.
AD011_KAF9403207.1:0.0292392493)/1:0.0742163235,Mortierella sp.
AD094_KAF9352438.1:0.0651683652)/1:0.1153511476,(Entomortierella
lignicola_KAF8986176.1:0.0109198214,Haplosporangium sp. Z
27_KAF9209886.1:0.0118653326)/1:0.2602936982)/0.87:0.0457720552,Mortierella sp.
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reniformis_KAG0007149.1:0.4312818311,(Mortierella sp.
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11_KAF9187458.1:0.0000029437)/1:0.0779795776,Mortierella
polycephala_KAG0259601.1:0.0717027339)/1:0.4589510676)/1:0.0686249122,
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14UC_KAF9129334.1:0.0725625737,Linnemannia
zychae_KAF9900947.1:0.1445077342)/1:0.0378149623)/0.997:0.0430910681,
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schmuckeri_KAF9155002.1:0.0493122902)/1:0.0506055635,((Mortierella sp.
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hyalina_KAG9067754.1:0.0235189161)/1:0.0098704362,Mortierella
hygrophila_KAF9538920.1:0.0311349160)/1:0.0326786720,Linnemannia elongata AG-
77_OAQ31332.1:0.0706458916)/1:0.0646146012)/0.996:0.0352576680,Linnemannia
gamsii_KAG0288886.1:0.1401881656)/1:0.0982218486,(Mortierella sp.
AD031_KAF9090455.1:0.0018192385,Mortierella sp.
GBA35_KAF9101472.1:0.0000032206)/1:0.2096170474)/0.955:0.0373249214)/
1:0.3653724596)/0.995:0.0760394615,Gryganskiella
cystojenkinii_KAG0054152.1:0.7397275948)/0.742:0.0283322876)/0.997:0.1642115833,
Mortierella
antarctica_KAF9989181.1:0.6882205470)/0.426:0.0796482800)/0.997:0.1762267448,Act
inomortierella wolfii_KAG0235271.1:1.1087511767)/0.999:0.2802526925,
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muscae_KAF7758863.1:0.0884681715)/1:1.9061900865,Sphaeroforma arctica
JP610_XP_014153862.1:2.3373115665)/0.818:0.2180462202)/0.965:0.1629898739)/
0.84:0.0663821464,(Endogone sp. FLAS-
F59071_RUS19088.1:0.9359210105,Jimgerdemannia
flammicorona_RUP43471.1:0.3228988844)/1:0.8240425820)/0.629:0.0611882940,Paramic
rosporidium saccamoebae_PJF17061.1:1.7514023247)/1:0.2056016233,((Dictyostelium
discoideum AX4_EAL60774.1:1.5259068125,Umbelopsis
isabellina_KAG2182063.1:1.5961067578)/0.747:0.1969088860,Apophysomyces

ossiformis_KAF7722156.1:1.9038402877)/0.609:0.0927369261)/0.983:0.0516921405,
(Capsaspora owczarzaki ATCC 30864_XP_004366013.1:1.3685281204,(Salpingoeca
rosetta_XP_004998238.1:1.2644430988,Monosiga brevicollis
MX1_XP_001746034.1:1.4638573572)/1:0.3419383014)/0.968:0.1570592027)/
0.987:0.0855230683)/0.999:0.3791215787,Fonticula
alba_XP_009492366.1:1.7942271987);

BRCA2

(Homo sapiens_NP_000050.2:0.3060797578,Mus musculus_NP_033895.2:0.3305983637,
(((Dictyostelium discoideum AX4_EAL60741.1:2.2449034016,
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sphaerospora_RKP04649.1:0.8803493264,Syncephalis
pseudoplumigaleata_RKP25322.1:1.2419930153)/1:1.6543218509)/0.881:0.2948725413,
(((Cryptococcus neoformans var. grubii H99_AFR96486.2:1.6950271012,((Melampsora
larici-populina 98AG31_EGG11618.1:1.3895417905,Puccinia graminis f. sp. tritici
CRL 75-36-700-3_EHS62527.1:1.0390492384)/1:1.0911158129,(Wallemia ichthyophaga
EXF-994_EOQ99450.1:1.6539646441,Mixia osmundae IAM
14324_KEI39015.1:1.9515325170)/0.984:0.2097188555)/0.94:0.1633518451)/
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okayama7#130_EAU92556.2:0.8960846564,Amanita muscaria Koide
BX008_KIL71541.1:0.7506782948)/0.996:0.1585495352,((Postia placenta Mad-698-
R_EED79697.1:0.0293551024,Postia placenta
Mad-698-R_EED85186.1:0.0157881279)/1:1.3958110688,(Serpula lacrymans var.
lacrymans S7.9_EG030985.1:0.8238353161,Ramaria
rubella_KAF8585115.1:0.9233359648)/0.686:0.0694693136)/0.884:0.0962659779)/
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solani_QRW22267.1:1.6760514810)/0.993:0.1577211484,Dacryopinax
primogenitus_EJU02787.1:1.8169250376)/0.999:0.2173568596,((Malassezia globosa
CBS 7966_EDP42738.1:1.7413413904,Tilletiaria anomala UBC
951_KDN43004.1:1.4659511112)/0.868:0.2244814794,Ustilago maydis
521_KIS68625.1:1.3430456802)/1:0.3560164005)/0.617:0.1236311883)/0.939:0.1464153
538,Malassezia globosa CBS
7966_EDP42737.1:2.0606123614)/1:0.4019768412)/0.918:0.0871855316,((Allomyces
macrognus ATCC 38327_KNE55806.1:0.0691135636,Allomyces macrognus ATCC
38327_KNE58608.1:0.0696734526)/1:1.5641260718,Catenaria anguillulae
PL171_ORZ39398.1:1.6671576577)/1:0.6944427637)/0.958:0.0833656008,Gonapodya
prolifera_JEL478_KXS19788.1:2.5893748536)/0.749:0.0789221527,((((((((Dissophora
ornata_KAF8932065.1:0.3991563180,Dissophora
globulifera_KAG0321648.1:0.5521314954)/1:0.1236718682,(((Mortierella sp.
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reniformis_KAG0006737.1:0.5098834498)/1:0.1998364878,Gamsiella
multidivariata_KAG0366571.1:0.5855787433)/1:0.0661766968)/0.997:0.0614434513,
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chlamydospora_KAG0002160.1:0.0414095252)/1:0.2448500830)/1:0.0918124632,Mortiere
lla sp. AM989_KAF9116996.1:0.3387233301)/1:0.1066449305,Entomortierella
beljakovae_KAF9437101.1:0.7160390458)/1:0.2304784801)/1:0.0947526383,
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elongata
AG-77_OAQ25884.1:0.0908677901)/1:0.0668949659)/1:0.0256911591,Linnemannia
gamsii_KAG0282851.1:0.1866515910)/1:0.1155218165,((Mortierella sp.
14UC_KAF9128163.1:0.1301893343,Linnemannia
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 cystojenkinii_KAG0056739.1:0.9333712617)/1:0.0834772410,(((Haplosporangium
 bisporale_KAF9020812.1:0.0396268572,Podila verticillata NRRL
 6337_KFH73131.1:0.0093713025)/1:0.2194475458,(Podila
 horticola_KAF9321102.1:0.1073263567,(Podila
 clonocystis_KAG0035654.1:0.1092884697,(Podila
 epicladia_KAG0100149.1:0.1020481512,Podila
 minutissima_KAG0352359.1:0.0509325678)/1:0.0313068017)/1:0.0326063759)/
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 humilis_KAG0349554.1:0.6565577615)/1:0.2129438434,Podila
 epigama_KAF9426293.1:0.6471933037)/1:0.6802312538)/0.554:0.0825858576,Lunasporan
 giospora selenospora_KAF9586508.1:0.9785656799)/1:0.2293492258,
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 lusitanicus_KAF1804125.1:0.1370241023)/1:0.1298527582,(Parasitella
 parasitica_CEP13748.1:0.3397408751,Mucor
 plumbeus_KAG2209111.1:0.1963665618)/1:0.0796002924)/1:0.4750338702,Choanephora
 cucurbitarum_OBZ84355.1:0.6154325967)/1:0.1785933783,(Mucor
 saturninus_KAG2204560.1:0.6267860738,Thamnidium
 elegans_KAG2233272.1:0.5806206077)/1:0.4100844482)/1:0.1301542048,((Rhizopus
 delemar RA 99-880_EIE85097.1:0.5683684145,Rhizopus delemar RA 99-
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 52813_PHZ14206.1:0.0486762043,Rhizopus
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 repens_ORZ18475.1:0.5556304055)/1:0.4589776926,Hesseltinella
 vesiculosa_ORX61294.1:1.1580204278)/1:0.6101422627,(Apophysomyces
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 BC1015_KAG0175092.1:0.0013047039,(Apophysomyces sp.
 BC1021_KAG0180309.1:0.0013144849,Apophysomyces sp.
 BC1034_KAG0194791.1:0.0000022030)/0.126:0.0000020349)/1:0.5426330912)/
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 racemosum_ORY90596.1:1.6804766528)/0.876:0.1058910623,Phycomyces blakesleeanus
 NRRL 1555(-)_OAD72998.1:1.3903728656)/0.993:0.1427323016,Mucor
 circinatus_KAG2221581.1:1.2145650418)/1:0.3257977153,Basidiobolus meristosporus
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 flammicorona_RUP24650.1:0.5325696785,(Jimgerdemannia
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 irregularis DAOM 181602=DAOM 197198_POG61700.1:0.0149202169,Rhizophagus
 diaphanus_RGB27511.1:0.0275382598)/1:0.1165375244)/1:0.1165029255,Glomus
 cerebriforme_RIA85350.1:0.2434218562)/1:0.6713890725,(((Gigaspora
 margarita_KAF0381412.1:0.0324707071,Gigaspora
 rosea_RIB02779.1:0.0855627935)/1:0.6658188986,Diversispora
 epigaea_RHZ83030.1:1.2427145549)/0.644:0.0973448782,Diversispora
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 2020a_KAG4099534.1:0.0015236776,Neocallimastix
 californiae_ORY81143.1:0.0006224826)/1:0.3546376228,(Piromyces
 finnis_ORX55527.1:0.2783251287,Piromyces sp.
 E2_OUM68278.1:0.1690776235)/1:0.1823712504)/0.908:0.0535911333,(Anaeromyces
 robustus_ORX45454.1:0.0000023536,Anaeromyces
 robustus_ORX82727.1:0.0000021728)/1:0.2860225296)/1:1.8368837421,((Spizellomyces
 punctatus DAOM BR117_KND03168.1:0.0940479561,Spizellomyces sp.

'palustris'_TPX58002.1:0.0803327265)/1:1.1416443505, Powellomyces
hirtus_TPX56012.1:1.4264094860)/1:0.3407272501)/0.996:0.1755999072, (Synchytrium
microbalum_TPX32694.1:1.0954570625, Synchytrium
endobioticum_TPX52037.1:1.5137118965)/1:0.6711958152)/1:0.1746228547)/
1:0.2131305965)/0.995:0.0742772743, ((Entomophthora
muscae_KAF7743295.1:0.0221328282, Entomophthora
muscae_KAF7755177.1:0.0295302299)/1:2.5444457958, Conidiobolus coronatus NRRL
28638_KXN70736.1:2.3356070966)/1:1.0324138365)/1:0.0723798907, (Drosophila
melanogaster_NP_611925.2:4.5617677922, (((Zancudomyces
culisetae_OMH84186.1:1.9088318752, ((Furculomyces
boomerangus_PVU88831.1:0.0000025559, (Furculomyces
boomerangus_PVU91246.1:0.0017545137, Smittium
angustum_PWA01933.1:0.0000020845)/0.815:0.0037024454)/1:1.1901377147, (Smittium
simulii_PVU89671.1:1.3325607586, Smittium
megazygosporum_PVU01722.1:1.2704542898)/0.999:0.1946871946)/1:0.4394385071)/
1:0.6245599361, (Linderina pennisporea_ORX72199.1:0.6123843794, Coemansia reversa
NRRL 1564_PIA19457.1:1.1783797778)/1:1.4664725333)/0.777:0.1065084122, Dimargaris
cristalligena_RKP38672.1:2.0875341454)/0.824:0.1177034724, (Rhizoclostridium
globosum_ORY33242.1:1.6166311932, Chytridiomyces
confervae_TPX69853.1:1.2835737894)/1:0.8551075769)/0.905:0.0969223159)/
0.963:0.0688194209)/1:0.1189564805, (Batrachochytrium dendrobatidis
JAM81_EGF83379.1:2.0857483748, Blyttomyces
helicus_RK093396.1:1.3896925189)/0.994:0.2226030685)/1:0.1544771548, ((Rozella
allomyces CSF55_EPZ31853.1:2.2713971889, Paramicrosporidium
saccamoebae_PJF18267.1:2.3807023264)/0.464:0.1430174630, (Amphiblyps sp.
WSBS2006_OIR57862.1:2.5628301454, Salpingoeca
rosetta_XP_004991755.1:1.9135587463)/0.991:0.2813315783)/1:0.2450785200)/
0.886:0.0528981288)/0.884:0.0705083331, Capsaspora owczarzaki ATCC
30864_XP_004346647.2:1.9919255001)/0.999:0.1660102411, Amphimedon
queenslandica_A0A1X7VMB0:1.7268201697)/1:0.3599632160, Pomacea
canaliculata_PVD21562.1:1.9571493926)/1:1.2339406759);

RAD51

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ceranae_KK075157.1:0.5030940765)/0.866:0.1630916323, Nosema
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(Hamiltosporidium magnivora_TBT99232.1:0.1074699126, Hamiltosporidium
tvaerminnensis_TBU10564.1:0.0112909616)/1:0.6966752858)/0.961:0.0871111854, Thelo
hania contejeani_KAF7684362.1:0.4647123022)/1:0.1551910465, ((Vavraia culicis
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hominis_ELQ75893.1:0.0757007271)/1:0.5095778349, Cucumispora
dikeroammari_KAF7702697.1:0.9740967553)/1:0.2584588413, (Dictyocoela
roeselium_KAG0419893.1:0.2111205462, Dictyocoela
muelleri_KAG0440847.1:0.1524506855)/1:0.4171970845)/0.879:0.0794173065)/
1:0.3196758168, ((Mitosporidium daphniae_KGG51533.1:0.7813352003, Amphiblyps sp.
WSBS2006_OIR58962.1:0.7879085016)/0.847:0.1708742433, Paramicrosporidium
saccamoebae_PJF18425.1:0.5182914483)/0.813:0.0646748405, Salpingoeca
rosetta_XP_004994547.1:2.5264428440)/0.775:0.0645844968)/1:0.1974199887, Rozella
allomyces CSF55_EPZ30915.1:0.8208303967)/1:0.1625046634, (((((((((((Apophysomyces
sp. BC1021_KAG0180202.1:0.1300165737, Apophysomyces
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plumbeus_KAG2208809.1:0.1938102707, Parasitella
parasitica_CEP12943.1:0.0856485347)/0.807:0.0114260633, (((((((Rhizopus
azygosporus_RCH86309.1:0.0430670592, Rhizopus
azygosporus_RCH91481.1:0.0207681009)/1:0.1636639214, Rhizopus delemar RA 99-
880_EIE79168.1:0.1847990178)/1:0.1107421993, Thamnidium
elegans_KAG2230282.1:0.1735767178)/0.661:0.0843763400, Mucor

saturninus_KAG2210020.1:0.2420278458)/0.913:0.0480586338)/1:0.0469566448, Mucor
 lusitanicus_KAF1807531.1:0.1526317448)/0.743:0.0187770419, Mucor
 ambiguus_GAN03111.1:0.0280007430)/0.966:0.0747582365, Choanephora
 cucurbitarum_OBZ87403.1:0.2608185544)/1:0.3839221149, Mucor
 circinatus_KAG2226773.1:0.3596140069)/0.997:0.0934969166)/0.908:0.0648144258, Abs
 idia glauca_SAM05585.1:0.4495385545)/0.997:0.1059113499, Phycomyces blakesleeana
 NRRL 1555_OAD78152.1:0.5774250756)/0.994:0.1430286799, (Umbelopsis
 vinacea_KAG2173423.1:0.4864392095, Umbelopsis
 isabellina_KAG2178816.1:0.2767377831)/1:0.3435829003)/0.89:0.1072657453, Jimgerde
 mannia flammicorona_RU096455.1:0.6656000739)/0.964:0.1271386190, Bifiguratus
 adalaidae_OZJ03230.1:0.3110326652)/1:0.1222648385, (((Mortierella sp.
 AM989_KAF9102260.1:0.0380853346, (Haplosporangium sp. Z
 27_KAF9202520.1:0.0386571991, Entomortierella
 lignicola_KAF8984346.1:0.0466642284)/1:0.1036939849)/0.978:0.0169283662,
 (Entomortierella beljakovae_KAF9434156.1:0.1076502346, Lunasporangiospora
 selenospora_KAF9579934.1:0.2969195394)/1:0.0375959554)/0.525:0.0089574810,
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 exigua_KAG0278269.1:0.0422623482, Mortierella sp.
 AD032_KAG0375785.1:0.1023722881)/1:0.0600464506)/0.629:0.0116648986,
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 gracile_KAF8936030.1:0.0288758937)/1:0.0231981207, (Mortierella sp.
 GBA39_KAF9143794.1:0.0141392729, Linnemannia
 hyalina_KAG9067234.1:0.0746142608)/0:0.0000023531, Mortierella
 hygrophila_KAF9551034.1:0.0140409585)/1:0.0521579952)/0.988:0.0231828695, Linnema
 nnia gamsii_KAG0286684.1:0.0432944205)/1:0.0765904486, Linnemannia
 zychnae_KAF9908627.1:0.0355400780)/0.938:0.0091833925)/1:0.0753866689,
 ((Mortierella sp. GBA35_KAF9093132.1:0.0000020008, Mortierella sp.
 NVP41_KAG0213509.1:0.0066644871)/0.966:0.0068902547, Mortierella sp.
 AD031_KAF9095337.1:0.0219621039)/1:0.0544890900)/1:0.0535856385,
 (((((((Haplosporangium bisporeale_KAF8953166.1:0.0205494452, Podila verticillata
 NRRL 6337_KFH73305.1:0.0000027823)/1:0.0836424276, Podila
 clonocystis_KAG0017634.1:0.0521018709)/0.126:0.0000024393, Podila
 horticola_KAF9312439.1:0.0452031457)/0.589:0.0107269886, (Podila
 epicladia_KAG0092669.1:0.1215979455, Podila
 minutissima_KAG0356504.1:0.0067078561)/0.128:0.0000023763)/0.927:0.0996185421,
 (Podila epigama_KAF9422179.1:0.3430698352, Podila
 humilis_KAG0345413.1:0.4056293574)/0.999:0.0952862743)/1:0.1452987548, Gryganskia
 cystojenkinii_KAG0043215.1:0.0963333892)/0.994:0.1023604290)/0.997:0.0733087984,
 Dissophora globulifera_KAG0326260.1:0.1077473795)/0.863:0.0241126765,
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 767_KAF9181034.1:0.0000023853)/0.999:0.0395881693, Mortierella
 polycephala_KAG0264970.1:0.0000023954)/1:0.1039214715)/0.663:0.0241287563, Mortie
 rella polycephala_KAG0264969.1:0.2975779700)/0.986:0.0756319128, ((Modicella
 reniformis_KAF9998418.1:0.0296218695, Mortierella sp.
 GBA43_KAG0244986.1:0.0710652896)/0.999:0.0395351291, Mortierella sp.
 NVP85_KAF9365634.1:0.1470606075)/1:0.0437368516)/0.857:0.0211545254, (Mortierella
 antarctica_KAF9981586.1:0.1239860963, Mortierella sp.
 GBA30_KAG0210733.1:0.1000442589)/1:0.0402758853)/0.901:0.0320342234, (Dissophora
 ornata_KAF8932022.1:0.1355112525, Gamsiella
 multidivariata_KAG0364439.1:0.0890000216)/0.998:0.0245276838)/1:0.1202662780,
 ((Mortierella sp. AD010_KAF9171848.1:0.0327467623, Mortierella sp.
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 chlamydospora_KAF9996095.1:0.0000026875)/0.862:0.0270465699)/0.995:0.0507186406,
 Mortierella sp.
 AD094_KAF9350711.1:0.0874378439)/0.93:0.0211256726)/1:0.4746699424,
 (((((((Rhizophagus clarus_GES92629.1:0.0431367186, Rhizophagus irregularis DAOM
 181602=DAOM 197198_POG72131.1:0.0798281014)/0.999:0.0473525568, Glomus
 cerebriforme_RIA97061.1:0.0222116009)/1:0.1731247026, Diversispora
 epigaea_RHZ75300.1:0.1852904934)/0.998:0.0546227097, Gigaspora
 margarita_KAF0488439.1:0.0598891799)/1:0.1590721566, Geosiphon
 pyriformis_KAG9306089.1:0.2053692141)/1:0.2773700482)/0.966:0.1015947787)/
 1:0.1273997295, (((((((Sclerotinia sclerotiorum 1980 UF-
 70_EDN91591.1:0.3675362703, Blumeria graminis f. sp.

triticales CAD6499572.1:0.6044670190)/1:0.7409000093,(Aspergillus nidulans FGSC
 A4_EAA61925.1:0.1896784780,Coccidioides immitis
 RS_EAS29013.3:0.1204959925)/1:0.2702734526)/0.997:0.1390631163,Tuber
 melanosporum_CA285163.1:0.3586732967)/1:0.2577742722,(Orbilia oligospora ATCC
 24927_EGX44320.1:0.0943787008,Drechslerella
 brochopaga_KAF3924209.1:0.0919216415)/1:0.3672845281)/1:0.3332702801,(Candida
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 B80_KTW29839.1:0.5295097593)/1:0.1462705217,Neolecta irregularis DAH-
 3_OLL24075.1:0.4957356617)/1:0.1758469327,Puccinia graminis f. sp. tritici CRL
 75-36-700-3_EFP89931.1:0.9488810049)/0.951:0.0591801156)/1:0.1664013765,
 ((Cryptococcus neoformans var. grubii H99_AFR98404.1:0.8549410257,((Coprinosia
 cinerea okayama7#130_EAU92763.2:0.0946139961,Amanita muscaria Koide
 BX008_KIL71707.1:0.9428703819)/1:0.2681214889,Rhizoctonia
 solani_QRW24868.1:0.5835513265)/1:0.4396441928)/1:0.1893079724,Wallemia
 ichthyophaga
 EXF-994_EOR01152.1:1.0210594018)/0.993:0.1088061280)/1:0.3347631754)/
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 helicus_RK082769.1:0.6127530084)/0.969:0.1974370165,Blyttomyces
 helicus_RK085343.1:0.1672603689)/0.989:0.1939106423,(Chytridiomyces
 confervae_TPX55570.1:0.0000021469,Chytridiomyces
 confervae_TPX61770.1:0.0000025951)/1:0.8181487990)/1:0.2303331311,
 (Neocallimastix sp. JGI-2020a_KAG4092591.1:0.0814341488,Piromyces
 finnis_ORX47301.1:0.0756598232)/1:0.5725107068)/1:0.1246115104)/1:0.1288393924,
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 culicis_OMJ21466.1:0.1499904228)/1:0.1697799101,((Zancudomyces
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 simulii_PVU90330.1:0.1853700286)/0.757:0.0758875396,Smittium
 megazygosporum_PVU05375.1:0.3429379667)/1:0.1454707978)/1:0.1731724192,Furculomy
 ces boomerangus_PVU96364.1:0.2419552080)/1:0.6464099720)/0.757:0.0647900480)/
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 30864_XP_004364475.2:0.6505896210)/1:0.9930677082,Olpidium
 bornovanus_KAG5458076.1:1.4694596621)/0.999:0.1876775396,Fonticula
 alba_XP_009494877.1:1.9272576698)/0.227:0.0124633184,(Drosophila
 melanogaster_NP_524583.1:0.9974328661,Rozella allomycis
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 ceranae_KK074715.1:0.1305056807)/0.821:0.0688255672,Nosema apis BRL
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 50504_AFM99344.1:0.0165115133,Encephalitozoon intestinalis ATCC
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*ra dikerogammari*_KAF7696489.1:1:0.0594070612)/0.999:0.1011859817)/1:0.1306036629,
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*margarita*_KAF0546070.1:0.0000023034)/1:0.6075724579, ((*Diversispora*
*epigaea*_RHZ57132.1:0.7115037104, (*Gigaspora*
*margarita*_KAF0504898.1:0.0000024668, *Gigaspora*
*margarita*_KAF0504899.1:0.0000020618)/1:0.3021270757)/0.248:0.0253347530, *Diversis*
*pora epigaea*_RHZ61908.1:0.2353370680)/0.907:0.0391165718)/1:0.3255468759)/
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*pyriformis*_KAG9304939.1:1.0218363091)/0.998:0.0990784696, (((((((*Parasitella*
*parasitica*_CEP12164.1:0.1979170552, (*Mucor*
*lusitanicus*_KAF1807511.1:0.0374775807, *Mucor*
*ambiguus*_GAN04987.1:0.0804125905)/1:0.0789610236)/1:0.2519944214, *Choanephora*
*cucurbitarum*_OBZ80962.1:0.3460808179)/0.726:0.1015474137, *Mucor*
*saturninus*_KAG2204041.1:0.6350424056)/1:0.1647196247, (*Rhizopus* *delemar* RA 99-
 880_EIE79639.1:0.2267858997, (*Rhizopus*
*azygosporus*_RCH86815.1:0.0193650474, *Rhizopus*
*azygosporus*_RCH95708.1:0.0419318310)/1:0.2280309510)/1:0.2022991166)/
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*ossiformis*_KAF7730675.1:0.1989472296)/1:0.3158436714, *Mucor*
*circinatus*_KAG2224305.1:0.5990773890)/1:0.2527741949)/1:0.2922801786,
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*vinacea*_KAG2188594.1:0.1005536776)/1:0.1942222624, (((*Choanephora*
*cucurbitarum*_OBZ86032.1:0.2123151551, (*Mucor*
*saturninus*_KAG2207547.1:0.0431950146, *Thamnidium*
*elegans*_KAG2236116.1:0.0871617163)/1:0.1153364788)/0.897:0.0396138166, ((*Mucor*
*ambiguus*_GAN03643.1:0.0000022191, *Mucor*
*lusitanicus*_KAF1801726.1:0.0000022170)/0.999:0.0315970634, *Mucor*
*plumbeus*_KAG2212486.1:0.0406309458)/0.995:0.0213785432, *Parasitella*
*parasitica*_CEP18855.1:0.1175746972)/1:0.1691104968)/0.963:0.0292096389,
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*racemosum*_ORZ01446.1:0.2235706602)/0.956:0.1290160972)/0.987:0.0650938905, *Mucor*
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*ossiformis*_KAF7732322.1:0.0000022922, ((*Apophysomyces* sp.
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*azygosporus*_RCI01612.1:0.1139826217)/0.334:0.0658668670)/1:0.3792875878)/
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 zychae_KAF9906770.1:0.0273926344)/1:0.2214593289,(Linnemannia
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 schmuckeri_KAF9150467.1:0.0000029781,Haplosporangium
 gracile_KAF8945743.1:0.0141472202)/1:0.0142194674,Mortierella sp.
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 hyalina_KAG9067849.1:0.0140920568)/0.994:0.0071083334)/0.999:0.0159998812,Linnem
 annia gamsii_KAG0283216.1:0.0492004018)/1:0.0488216738)/0.504:0.0163159728)/
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 multidivariata_KAG0353524.1:0.0752258973)/0.492:0.0136534893,(Dissophora
 ornata_KAF8926721.1:0.1534500787,Mortierella
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 selenospora_KAF9579443.1:0.1844907396,Gryganskiella
 cystojenkinii_KAG0047840.1:0.1180102859)/0.916:0.0365995761)/0.967:0.0082291327)
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 beljakovae_KAF9437915.1:0.0593791215)/0.999:0.0210269330)/0.922:0.0075018098,Ent
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 globulifera_KAG0312046.1:0.1491953668)/0.989:0.0749352842)/1:0.1373248567,
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 clonocystis_KAG0011888.1:0.0000027714)/1:0.0072486617,(Podila
 horticola_KAF9308213.1:0.0070541605,Podila
 epicladia_KAG0100701.1:0.0000024901)/0.96:0.0069110079)/0.997:0.0204783115,Podil
 a minutissima_KAG0361050.1:0.0445502418)/1:0.0453556037,Podila
 humilis_KAG0348810.1:0.0593741259)/1:0.0420805140,Podila
 epigama_KAF9426310.1:0.1503364417)/1:0.1134782676)/0.841:0.0587448183,
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 prolifera_JEL478_KXS09704.1:0.6184171524)/0.476:0.0188971768,(((Malassezia
 globosa CBS 7966_EDP43515.1:0.5012340444,Ustilago maydis
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 994_EOQ99772.1:0.6819903046,(Cryptococcus neoformans var. grubii
 H99_AFR92850.1:0.3421018412,(((Coprinopsis cinerea
 okayama7#130_EAU93170.1:0.1703583612,Amanita muscaria Koide
 BX008_KIL70899.1:0.2960450855)/1:0.2100022912,Rhizoctonia
 solani_QRW18941.1:0.4825553325)/0.97:0.1203774049,Puccinia graminis f. sp.
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 sp. triticales CAD6504638.1:0.0833741120,(Neurospora crassa
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 Vdls.17_EGY18462.1:0.1515762345)/1:0.0609128426)/0.97:0.0253746601,Sclerotinia
 sclerotiorum 1980 UF-70_ED004299.1:0.0897946956)/1:0.0868025805,Bacidia
 gigantis_KAG8533257.1:0.2789116856)/0.915:0.0346954726)/0.424:0.0373875813,Co
 ccidioides immitis RS_EAS27743.2:0.1956384245)/1:0.1990263160,Tuber
 melanosporum_CAZ80285.1:0.4164320907)/0.959:0.0517384092,((Orbilia oligospora
 ATCC 24927_EGX53310.1:0.0795442973,Drechslerella
 brochopaga_KAF3909803.1:0.1505810293)/0.865:0.0124713464,Arthrobotrys
 entomopaga_KAF3929349.1:0.0695520264)/1:0.1894065802)/1:0.3702445261,

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FANCU

(Mus musculus_NP_065595.2:0.1814647072,(((Drosophila melanogaster_AAF48852.1:3.3520140751,((((Coccidioides immitis RS_EAS34619.3:1.0613725342,Zymoseptoria tritici IP0323_EGP92510.1:1.0096480970)/1:0.4825265159,Orbilia oligospora ATCC 24927_EGX51736.1:1.1675353598)/0.993:0.2518740628,(Spizellomyces sp. 'palustris'_TPX70254.1:2.1167021261,(((Capsaspora owczarzaki ATCC 30864_XP_004363926.1:0.6256156545,Sphaeroforma arctica JP610_XP_014157974.1:0.7935598465)/0.986:0.2698077862,Salpingoeca rosetta_XP_004998933.1:0.5650831198)/1:1.1434157489,Fonticula alba_XP_009494159.1:1.6643382249)/1:0.7412036521)/0.984:0.2232927877)/0.844:0.1462243768,((Coprinospora cinerea okayama7#130_EAU93078.1:1.2637386946,(((Postia placenta Mad-698-R_EED80433.1:0.0186530379,Postia placenta Mad-698-R_EED82378.1:0.0157953732)/1:0.6755732825,Amanita muscaria Koide BX008_KIL70722.1:1.0076014911)/0.648:0.0828333690,Serpula lacrymans var. lacrymans S7.9_EG020492.1:1.2474851512)/1:0.2541873391,(Ramaria rubella_KAF8591892.1:0.6985560263,(Rhizoctonia solani_QRW24265.1:0.0000029803,Rhizoctonia solani_QRW25003.1:0.0057690938)/1:1.2288457946)/0.987:0.1961877165)/0.966:0.1924956826)/1:0.4803297906,Pneumocystis carinii B80_KTW28146.1:1.6768440919)/0.538:0.1643528975)/0.919:0.2225310777,(((Gigaspora margarita_KAF0505769.1:0.0137994648,Gigaspora rosea_RIB18734.1:0.0292379946)/1:0.5390287424,Glomus cerebriforme_RIA94590.1:0.7014155978)/1:0.4810457677,(Podila epigama_KAF9426470.1:1.5914501739,Umbelopsis vinacea_KAG2181576.1:1.6539457902)/0.88:0.2676308404)/1:0.2995565765,(Entomophthora muscae_KAF7755001.1:0.0093102320,Entomophthora muscae_KAF7756708.1:0.0000024222)/1:1.8827201282)/0.658:0.0843813304)/

0.995:0.3952407457)/0.88:0.3153454220,Dictyostelium
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sapiens_NP_005422.1:0.1248131013);

FANCV

(Mus musculus_NP_082261.2:0.0246643377,((((((((((((((((Caenorhabditis
elegans_CCD74133.1:1.7175051887,Batrachochytrium dendrobatidis
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2020a_KAG4086132.1:0.0000020828,Neocallimastix
californiae_ORY74728.1:0.0000025712)/1:0.6361604781,Piromyces
finnis_ORX59277.1:0.3270443978)/1:0.2199707914,(Neocallimastix sp. JGI-
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2020a_KAG4091183.1:0.0000021397)/1:0.0917469935)/0.54:0.0131036716,Piromyces
finnis_ORX41952.1:0.1136341075)/0.995:0.0863012912,Anaeromyces
robustus_ORX78819.1:0.1001378699)/1:0.4872656196,Monosiga brevicollis
MX1_XP_001748095.1:1.7285379011)/0.787:0.1283383827,Gonapodya prolifera
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s sphaerospora_RKP09537.1:0.4808126562)/0.654:0.0676188729,((((Drosophila
melanogaster_NP_649555.1:5.5712541969,Absidia
repens_ORZ10880.1:0.2768464012)/0.932:0.3071292118,Hesselтинella
vesiculosa_ORX54928.1:0.5150587242)/1:0.3517895574,Phycomyces blakesleeanus NRRL
1555_OAD80640.1:1.7003822625)/0.995:0.2697548928,(Umbelopsis
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vinacea_KAG2178466.1:0.1048442678)/1:0.5598771063)/1:0.3328003903,(Gigaspora
margarita_KAF0482738.1:0.0000024292,Gigaspora
rosea_RIB17192.1:0.0434481596)/1:0.6585522302)/0.936:0.1326731758,(Linderina
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QM6a_EGR44301.1:0.2588878987)/0.877:0.0386687420)/1:0.1807155292,(Tuber
melanosporum_CA286428.1:0.2823333733,Orbilia oligospora ATCC
24927_EGX50711.1:0.4611218853)/1:0.1292225694)/0.544:0.0549737451,Coccidioides
immitis_RS_EAS34611.2:0.1680312287)/0.983:0.0836937336,Zymoseptoria tritici
IP0323_EGP92551.1:0.2683432324)/1:0.3718045752,Yarrowia lipolytica
CLIB122_CAG79505.1:0.6733662102)/0.439:0.1072887059)/0.828:0.0649227359,Pneumocy
stis carinii B80_KTW25853.1:0.4057208405)/0.999:0.1766834422,
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yFS275_EEB06287.1:0.2485676351)/1:0.3714752441)/1:0.3065360201)/0.999:0.16625357
69,Wallemia ichthyophaga EXF-994_EOR01111.1:0.4640832037)/1:0.1667016505,
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Koide BX008_KIL70914.1:0.0604466623)/1:0.2620466533,Ramaria
rubella_KAF8587313.1:0.3068526013)/0.966:0.1221551376,Rhizoctonia
solani_QRW18480.1:0.8357197888)/1:0.2913895264,Dacryopinax
primogenitus_EJU00496.1:0.4166439625)/1:0.3130261284,((Malassezia globosa CBS
7966_EDP43041.1:0.3837550325,Ustilago maydis
521_KIS68006.1:0.1900855675)/0.998:0.1810525546,Tilletiaria anomala UBC
951_KDN44518.1:0.5187300084)/1:0.5772694554)/0.871:0.1051392056)/0.817:0.1050470
148,Cryptococcus neoformans var. grubii
H99_AFR97843.1:0.6009851305)/1:0.5078648338,(Puccinia graminis f. sp. tritici
CRL 75-36-700-3_EFP77287.2:0.4265807234,Melampsora larici-populina
98AG31_EGF98905.1:0.4883721100)/1:0.9079616392)/1:2.7474905834,((Dictyostelium
discoideum_XP_640239.1:2.1240772745,(Dimargaris
cristalligena_RKP39478.1:2.8585626307,Salpingoeca
rosetta_XP_004991674.1:2.5950811635)/0.396:0.4221496581)/0.952:0.4010196924,Coem
ansia reversa NRRL
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 hyalina_KAG9067401.1:0.0355713903)/0.717:0.0024772090,Mortierella
 hygrophila_KAF9550411.1:0.0504204563)/1:0.0424575413,Linnemannia elongata AG-
 77_OAQ35651.1:0.1060750131)/1:0.0826872990)/1:0.1572629360,((Mortierella sp.
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 zychae_KAF9908961.1:0.1049610313)/1:0.1603846151,((((Haplosporangium
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 epicladia_KAG0099488.1:0.0500209191,Podila
 minutissima_KAG0350041.1:0.0887793824)/1:0.0638689136)/0.985:0.0441092363)/
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 epigama_KAF9430026.1:0.2187556542)/1:0.0679574193)/1:0.0609566134,
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 AD010_KAF9162264.1:0.0000022003,Mortierella sp.
 AD011_KAF9381938.1:0.0000025427)/1:0.0283633459,(Entomortierella
 beljakovae_KAF9436645.1:0.8254670799,Entomortierella
 chlamydospora_KAG0005271.1:0.0082580932)/0.839:0.0358890540)/1:0.1606014830,Diss
 ophora
 globulifera_KAG0312591.1:0.6730665940)/0.971:0.0850834108)/0.993:0.0272896516)/
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 multidivariata_KAG0369772.1:0.3999195018)/0.826:0.0511613082,(Modicella
 reniformis_KAF9963746.1:0.2492491201,Mortierella sp.
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