

Table S1. Ectomycorrhizal fungi detected on the roots of *Aldina insignis*, *Dicymbe corymbosa*, and *Dicymbe altsonii*. OTUs in bold were identified based on ITS sequence matches with known species whereas those designated by TH, MCA, or MES voucher numbers were identified based on ITS matches to sporocarps of undescribed species. Species with ECM numbers are known only based on sequences obtained from ECM roots. All species are assigned to the ECM lineages defined in Tedersoo et al. (2010a). Fisher's exact tests found that 117 ECM species were not statistically different in their frequency of association with the three different host species. One ECM fungus, *Tomentella* MES348, was more frequently detected on *D. corymbosa* than on *D. altsonii*.

ECM Taxon Name	Sporocarp Voucher	ECM lineage	All Hosts	A. insignis	D. corymbosa	D. altsonii	GenBank #
Russula TH9145	TH9145	/russula-lactarius	41	9	15	17	JN168752
Clavulina ECM962	–	/clavulina	36	11	10	15	JN168703
Tylopilus potamogeton v. irengensis	TH8801	/boletus	29	5	11	13	JN168779
Tomentella ECM963	–	/tomentella-thelephora	25	12	7	6	JN168770
Russula ECM1094	–	/russula-lactarius	23	11	7	5	JN168741
Tylopilus vinaceipallidus	TH8859	/boletus	22	5	8	9	JN168780
Clavulina ECM972	–	/clavulina	22	9	5	8	JN168704
Clavulina cf. sprucei	MCA3989	/clavulina	21	6	8	7	HQ680352
Xerocomus TH8802	TH8802	/boletus	21	8	7	6	JN168784

Clavulina ECM1037	–	/clavulina	21	9	6	6	JN168692
Clavulina ECM905	–	/clavulina	17	8	3	6	JN168701
Xerocomus ECM1082	–	/boletus	16	5	7	4	JN168783
Tylopilus orsonianus	TH8926	/boletus	15	5	5	5	JN168777
Tomentella TH8977	TH8977	/tomentella-thelephora	14	3	6	5	JN168773
Lactarius multiceps	TH9154A	/russula-lactarius	14	6	4	4	JN168731
Sebacinales ECM980	–	/sebacina	13	4	5	4	JN168758
Clavulina ECM1064	–	/clavulina	13	4	3	6	JN168693
Clavulina ECM1013	–	/clavulina	12	3	7	2	JN168691
Amanita TH8931	TH8931	/amanita	11	1	5	5	JN168680
Clavulina ECM1089	–	/clavulina	11	3	4	4	JN168695
Austroboletus rostrupii	TH8189	/boletus	11	5	4	2	JN168683
Cortinarius MCA2318	MCA2318	/cortinarius	11	4	3	4	JN168711
Lactarius TH9239	TH9239	/russula-lactarius	11	6	3	2	JN168732
Clavulina ECM1072	–	/clavulina	11	5	1	5	JN168694
Tomentella ECM974	–	/tomentella-thelephora	10	4	4	2	JN168771
Pseudotulostoma volvata	TH8975	/elaphomyces	10	5	2	3	JN168735

Boletellus annanus	TH6264	/boletus	10	5	1	4	JN168685
Tomentella MES348	MES348	/tomentella-thelephora	9	2	7	0	JN168772
Russula TH7446	TH7446	/russula-lactarius	9	2	4	3	JN168748
Atheliales ECM644	–	new Atheliales1	9	3	4	2	JN168682
Tomentella ECM1111	–	/tomentella-thelephora	9	4	3	2	JN168760
Xerocomus TH8805	TH8805	/boletus	9	3	2	4	JN168785
Clavulina ECM140	–	/clavulina	8	3	3	2	JN168699
Tomentella ECM947	–	/tomentella-thelephora	8	2	2	4	JN168769
Cantharellus TH9203	TH9203	/cantharellus	7	1	4	2	JN168667, JN168689
Lactarius ECM222	–	/russula-lactarius	7	1	4	2	JN168730
Inocybe epidendron	TH9186	/inocybe	7	1	3	3	JN168725
Clavulina monodiminutiva	TH8738	/clavulina	7	2	3	2	DQ056365
Russula MCA1856	MCA1856	/russula-lactarius	7	2	2	3	JN168745
Inocybe ECM397	–	/inocybe	7	3	2	2	JN168722
Xerocomus ECM1039	–	/boletus	7	3	2	2	JN168781
Craterellus ECM15	–	/cantharellus	7	4	2	1	JN168715
Russula TH7940	TH7940	/russula-lactarius	7	2	1	4	JN168750

Tomentella ECM712	–	/tomentella-thelephora	7	4	1	2	JN168764
Russula campinensis	TH7403	/russula-lactarius	6	2	2	2	JN168738
Inocybe pulchella	TH9185	/inocybe	6	3	2	1	JN168726
Inocybe ECM1091	–	/inocybe	6	3	0	3	JN168720
Tomentella ECM929	–	/tomentella-thelephora	5	0	3	2	JN168768
Amanita TH9128	TH9128	/amanita	5	0	2	3	JN168681
Sebacinales ECM976	–	/sebacina	5	2	2	1	JN168757
Xerocomus TH8915	TH8915	/boletus	5	3	1	1	JN168786
Russula TH7922	TH7922	/russula-lactarius	5	3	1	1	JN168749
Tomentella ECM880	–	/tomentella-thelephora	4	0	2	2	JN168767
Cantharellus cf. hystrix	TH9204	/cantharellus	4	1	1	2	JN168666, JN168688
Lactarius ECM1066	–	/russula-lactarius	4	1	1	2	JN168729
Sebacinales ECM828	–	/sebacina	4	1	1	2	JN168755
Inocybe ECM22	–	/inocybe	4	2	1	1	JN168721
Sebacinales ECM17	–	/sebacina	4	2	1	1	JN168754
Amanita ECM191	–	/amanita	3	0	2	1	JN168677
Boletellus exiguus	TH9189	/boletus	3	0	2	1	JN168687

Boletellus ECM59	–	/boletus	3	1	2	0	JN168686
Amanita ECM780	–	/amanita	3	1	1	1	JN168679
Clavulina ECM1129	–	/clavulina	3	1	1	1	JN168698
Clavulina ECM1092	–	/clavulina	3	1	1	1	JN168696
Inocybe ECM825	–	/inocybe	3	2	1	0	JN168724
Tomentella ECM698	–	/tomentella-thelephora	3	2	0	1	JN168763
Tylopilus exiguus	TH8929	/boletus	3	2	0	1	JN168776
Clavulina ECM1119	–	/clavulina	2	0	2	0	JN168697
Agaricales ECM268	–	new Agaricales2	2	0	1	1	JN168676, JN168662
Coltricia ECM220	–	/coltricia	2	0	1	1	JN168706
Cortinarius ECM255	–	/cortinarius	2	0	1	1	JN168709
Lactarius brunellus	TH9130	/russula-lactarius	2	0	1	1	JN168728
Sebacinales ECM84	–	/sebacina	2	0	1	1	JN168756
Amanita ECM363	–	/amanita	2	1	1	0	JN168678
Clavulina ECM136	–	/clavulina	2	1	1	0	HQ680341
Inocybe ECM454	–	/inocybe	2	1	1	0	JN168723
Russula ECM745	–	/russula-lactarius	2	0	0	2	JN168744

Tomentella ECM755	–	/tomentella-thelephora	2	0	0	2	JN168765
Clavulina ECM561	–	/clavulina	2	1	0	1	HQ680350
Cortinarius MCA3928	MCA3928	/cortinarius	2	1	0	1	JN168712
Craterellus ECM209	–	/cantharellus	2	1	0	1	JN168716
Inocybe TH8921	TH8921	/inocybe	2	1	0	1	JN168727
Tomentella ECM161	–	/tomentella-thelephora	2	1	0	1	JN168761
Clavulina humicola	TH8737	/clavulina	2	2	0	0	DQ056368
Russula ECM230	–	/russula-lactarius	2	2	0	0	JN168753
Russula cf. puiggarii ECM720	–	/russula-lactarius	2	2	0	0	JN168739
Tylophilus ballouii	TH8916	/boletus	2	2	0	0	JN168775
hypogeous Boletaceae sp. nov.	TH9163	/boletus	1	0	1	0	JN168684
Clavulina TH9122	TH9122	/clavulina	1	0	1	0	HQ680355
Clavulina MCA4022	MCA4022	/clavulina	1	0	1	0	JN168690
Coltricia ECM731	–	/coltricia	1	0	1	0	JN168708
Cortinarius TH8546	TH8546	/cortinarius	1	0	1	0	JN168714
Elaphomyces ECM1108	–	/elaphomyces	1	0	1	0	JN168718
Gomphales ECM560	–	/ramaria-gautieria	1	0	1	0	JN168719

Polyporales ECM259	–	new Polyporales1	1	0	1	0	JN168733
Russula ECM1056	–	/russula-lactarius	1	0	1	0	JN168740
Tomentella ECM615	–	/tomentella-thelephora	1	0	1	0	JN168762
Tylopilus pakaraimensis	TH8965	/boletus	1	0	1	0	JN168778
Xerocomus amazonicus	TH8839	/boletus	1	0	1	0	JN168782
Russula TH7949	TH7949	/russula-lactarius	1	0	1	0	JN168751
Clavulina ECM157	–	/clavulina	1	0	0	1	JN168700
Clavulina ECM945	–	/clavulina	1	0	0	1	JN168702
Coltricia ECM518	–	/coltricia	1	0	0	1	short seq.
Cortinarius ECM953	–	/cortinarius	1	0	0	1	JN168710
Cortinarius MCA3969	MCA3969	/cortinarius	1	0	0	1	JN168713
Pulveroboletus TH9154b	TH9154B	/boletus	1	0	0	1	JN168737
Russula MCA3954	MCA3954	/russula-lactarius	1	0	0	1	JN168746
Russula MCA4008	MCA4008	/russula-lactarius	1	0	0	1	JN168747
Sordariales ECM150	–	/sordariales	1	0	0	1	JN168759, JN168665
Tomentella ECM947	–	/tomentella-thelephora	1	0	0	1	JN168769

Tomentella ECM758	–	/tomentella-thelephora	1	0	0	1	JN168766
Tricholomataceae ECM926	–	new Agaricales1	1	0	0	1	JN168774
Coltricia ECM1026	–	/coltricia	1	1	0	0	JN168705, JN168663
Coltricia ECM710	–	/coltricia	1	1	0	0	JN168707, JN168664
Craterellus cf. atratus	TH8913	/cantharellus	1	1	0	0	JN168668, JN168717
Polyporales ECM287	–	new Polyporales1	1	1	0	0	JN168734