

Table S1. Results of co-occurrence network analysis of the fungal genus.

Target	Source	correlation	pvalue	po ne
Alternaria	Chaetomium	-0.33211	0.01846	negative
Alternaria	Stagonosporopsis	0.302408	0.032801	positive
Alternaria	Canariomyces	-0.43501	0.001594	negative
Alternaria	Wojnowiciella	0.398021	0.004202	positive
Ascochyta	Thelebolus	0.531057	7.26E-05	positive
Ascochyta	Aspergillus	0.351776	0.01224	positive
Ascochyta	Phoma	0.531689	7.09E-05	positive
Ascochyta	Botrytis	0.390145	0.005096	positive
Ascochyta	Wojnowiciella	0.307298	0.029947	positive
Ascochyta	Periconia	0.441491	0.00133	positive
Ascochyta	Dematiopleospora	0.366407	0.008869	positive
Ascochyta	Penicillium	0.388109	0.005352	positive
Ascochyta	Chaetopyrena	0.351354	0.012351	positive
Ascochyta	Stagonosporopsis	0.333666	0.017884	positive
Ascochyta	Nothophoma	0.466279	0.000643	positive
Aspergillus	Chaetopyrena	0.389466	0.00518	positive
Aureobasidium	Filobasidium	0.607642	2.87E-06	positive
Aureobasidium	Debaryomyces	0.699906	1.55E-08	positive
Aureobasidium	Dothidea	0.573553	1.34E-05	positive
Aureobasidium	Sporormiella	-0.31938	0.02377	negative
Aureobasidium	Thelebolus	-0.30257	0.032702	negative
Aureobasidium	Naganishia	0.313456	0.026651	positive
Beauveria	Myrmecridium	0.339159	0.015977	positive
Beauveria	Ascochyta	0.341094	0.015347	positive
Beauveria	Paraphaeosphaeria	0.342131	0.015019	positive
Beauveria	Penicillium	0.435211	0.001585	positive
Beauveria	Phoma	0.392747	0.004784	positive
Beauveria	Thelebolus	0.551202	3.35E-05	positive
Beauveria	Botrytis	0.322217	0.022487	positive
Beauveria	Chaetopyrena	0.397886	0.004216	positive
Beauveria	Aspergillus	0.330593	0.019034	positive
Botrytis	Chaetopyrena	0.495381	0.000255	positive
Botrytis	Myrmecridium	0.312414	0.027186	positive
Botrytis	Gibberella	0.359552	0.010332	positive
Botrytis	Aspergillus	0.370021	0.008172	positive
Canariomyces	Vishniacozyma	-0.31573	0.025515	negative
Canariomyces	Naganishia	0.303409	0.032199	positive
Chaetopyrena	Leptosphaeria	0.403672	0.003649	positive
Cladosporium	Heterophoma	0.303462	0.032167	positive
Cladosporium	Thelebolus	0.440307	0.001375	positive
Cladosporium	Neoscoleobasidium	0.325431	0.021104	positive
Cladosporium	Mucor	0.57162	1.45E-05	positive
Cladosporium	Nothophoma	0.372206	0.007775	positive
Cladosporium	Botrytis	0.317067	0.024863	positive

Cladosporium	Periconia	0.416095	0.002652	positive
Coprinopsis	Chaetomium	0.308526	0.029264	positive
Coprinopsis	Botrytis	0.315217	0.025766	positive
Debaryomyces	Dothidea	0.459783	0.000782	positive
Debaryomyces	Dematiopleospora	-0.38954	0.005171	negative
Dematiopleospora	Chaetomium	-0.30254	0.03272	negative
Dematiopleospora	Leptosphaeria	0.418697	0.002477	positive
Dematiopleospora	Aspergillus	0.360013	0.010228	positive
Dematiopleospora	Chaetopyrena	0.399798	0.004021	positive
Didymella	Alternaria	0.397913	0.004214	positive
Didymella	Stagonosporopsis	0.467237	0.000624	positive
Didymella	Chaetopyrena	0.410298	0.003083	positive
Didymella	Mucor	-0.31057	0.028157	negative
Didymella	Ascochyta	0.400359	0.003965	positive
Didymella	Dematiopleospora	0.449115	0.001069	positive
Didymella	Phoma	0.499091	0.000225	positive
Didymella	Botrytis	0.309813	0.028562	positive
Didymella	Wojnowiciella	0.391202	0.004967	positive
Dothidea	Vishniacozyma	0.466419	0.00064	positive
Filobasidium	Naganishia	0.389445	0.005183	positive
Filobasidium	Vishniacozyma	0.474346	0.000501	positive
Filobasidium	Stagonosporopsis	0.320474	0.023269	positive
Filobasidium	Dothidea	0.540911	5.00E-05	positive
Filobasidium	Debaryomyces	0.647509	3.73E-07	positive
Filobasidium	Sporormiella	-0.36094	0.01002	negative
Gibberella	Myrmecridium	0.324517	0.02149	positive
Heterophoma	Epicoccum	0.324502	0.021497	positive
Heterophoma	Penicillium	0.333241	0.01804	positive
Heterophoma	Dematiopleospora	0.411584	0.002982	positive
Mucor	Neoscoleobasidium	0.316124	0.025319	positive
Mucor	Epicoccum	0.409	0.003187	positive
Mucor	Heterophoma	0.317536	0.024638	positive
Mucor	Chaetomium	0.308378	0.029346	positive
Nothophoma	Phaeosphaeria	0.376544	0.007034	positive
Nothophoma	Naganishia	0.346678	0.013648	positive
Nothophoma	Periconia	0.306534	0.030379	positive
Paraphaeosphaeria	Ascochyta	0.338641	0.016149	positive
Paraphaeosphaeria	Periconia	0.357618	0.010781	positive
Paraphaeosphaeria	Didymella	0.479206	0.00043	positive
Paraphaeosphaeria	Mucor	-0.30356	0.03211	negative
Paraphaeosphaeria	Aspergillus	0.311606	0.027607	positive
Paraphaeosphaeria	Phaeosphaeria	0.396637	0.004349	positive
Paraphaeosphaeria	Chaetopyrena	0.467494	0.000619	positive
Paraphaeosphaeria	Stagonosporopsis	0.454841	0.000905	positive
Paraphaeosphaeria	Leptosphaeria	0.305997	0.030685	positive
Paraphaeosphaeria	Phoma	0.697289	1.84E-08	positive
Paraphaeosphaeria	Coprinopsis	0.373017	0.007631	positive

Paraphaeosphaeria	Nothophoma	0.338946	0.016047	positive
Paraphaeosphaeria	Dematiopleospora	0.404919	0.003536	positive
Penicillium	Aspergillus	0.303135	0.032362	positive
Penicillium	Wojnowiciella	0.558171	2.53E-05	positive
Periconia	Aspergillus	0.496411	0.000246	positive
Periconia	Coprinopsis	0.37101	0.00799	positive
Periconia	Heterophoma	0.317888	0.02447	positive
Periconia	Botrytis	0.491929	0.000285	positive
Periconia	Chaetopyrena	0.340285	0.015608	positive
Periconia	Phaeosphaeria	0.392149	0.004854	positive
Phaeosphaeria	Chaetopyrena	0.356977	0.010933	positive
Phaeosphaeria	Aspergillus	0.334369	0.01763	positive
Phaeosphaeria	Canariomyces	0.384995	0.005767	positive
Phoma	Nothophoma	0.413923	0.002807	positive
Phoma	Stagonosporopsis	0.530574	7.39E-05	positive
Phoma	Heterophoma	0.389247	0.005208	positive
Phoma	Aspergillus	0.405775	0.00346	positive
Phoma	Chaetopyrena	0.356624	0.011018	positive
Phoma	Alternaria	0.458478	0.000813	positive
Phoma	Phaeosphaeria	0.36207	0.009772	positive
Phoma	Dematiopleospora	0.461407	0.000745	positive
Phoma	Periconia	0.403939	0.003624	positive
Phoma	Penicillium	0.38311	0.006031	positive
Phoma	Wojnowiciella	0.502989	0.000197	positive
Preussia	Camarosporidiella	-0.31405	0.026347	negative
Preussia	Penicillium	0.475893	0.000478	positive
Preussia	Heterophoma	0.441537	0.001328	positive
Purpureocillium	Beauveria	0.369284	0.00831	positive
Purpureocillium	Alternaria	0.406168	0.003426	positive
Sporormiella	Vishniacozyma	-0.41632	0.002637	negative
Sporormiella	Curvularia	0.312025	0.027388	positive
Sporormiella	Periconia	0.422092	0.002264	positive
Sporormiella	Penicillium	0.433578	0.001658	positive
Sporormiella	Beauveria	0.348293	0.013188	positive
Sporormiella	Dothidea	-0.45634	0.000866	negative
Sporormiella	Thelebolus	0.524349	9.29E-05	positive
Sporormiella	Canariomyces	0.371117	0.007971	positive
Thelebolus	Penicillium	0.566873	1.77E-05	positive
Thelebolus	Preussia	0.382545	0.006112	positive
Thelebolus	Phoma	0.34911	0.01296	positive
Thelebolus	Aspergillus	0.394721	0.004558	positive
Thelebolus	Dothidea	-0.42069	0.00235	negative
Thelebolus	Mucor	0.3802	0.006459	positive
Thelebolus	Botrytis	0.477465	0.000455	positive
Thelebolus	Heterophoma	0.39353	0.004693	positive
Thelebolus	Periconia	0.448788	0.00108	positive
Thelebolus	Myrmecridium	0.520473	0.000107	positive

Tranzscheliella	Paraphaeosphaeria	0.656203	2.30E-07	positive
Tranzscheliella	Didymella	0.406967	0.003357	positive
Tranzscheliella	Chaetopyrena	0.345863	0.013885	positive
Tranzscheliella	Periconia	0.325273	0.021171	positive
Tranzscheliella	Phaeosphaeria	0.437947	0.001469	positive
Tranzscheliella	Alternaria	0.374346	0.007401	positive
Tranzscheliella	Camarosporidiella	0.423021	0.002209	positive
Tranzscheliella	Stagonosporopsis	0.369579	0.008255	positive
Tranzscheliella	Mucor	-0.40302	0.00371	negative
Tranzscheliella	Phoma	0.687585	3.47E-08	positive
Vishniacozyma	Curvularia	-0.30914	0.028928	negative
Wojnowiciella	Epicoccum	0.319781	0.023586	positive
Xylaria	Neoscolecobasidium	0.714286	5.72E-09	positive
Xylaria	Epicoccum	0.402007	0.003805	positive

Table S2. P values of Spearman correlation heatmap among 30 most abundant genera.

Label	Stagonosp oropsis	Naganishi a	Aureobasi dium	Debaryom yces	Filobasidiu m	Dothidea	Canariom yces	Periconia
Stagonosp	--	0.20649	0.18495	0.27518	0.32047	0.2044	0.07339	0.05625
Naganishia	0.20649	--	0.31346	0.1323	0.38944	0.28141	0.30341	0.15234
Aureobasid	0.18495	0.31346	--	0.69991	0.60764	0.57355	0.03682	-0.09483
Debaryomy	0.27518	0.1323	0.69991	--	0.64751	0.45978	0.05032	-0.19608
Filobasidiu	0.32047	0.38944	0.60764	0.64751	--	0.54091	-0.01262	-0.07508
Dothidea	0.2044	0.28141	0.57355	0.45978	0.54091	--	-0.08317	-0.22165
Canariomy	0.07339	0.30341	0.03682	0.05032	-0.01262	-0.08317	--	0.19467
Periconia	0.05625	0.15234	-0.09483	-0.19608	-0.07508	-0.22165	0.19467	--
Phaeospha	0.09332	0.22832	0.11642	0.0848	0.25102	-0.07291	0.38499	0.39215
Cladospori	0.05449	0.0889	0.11843	0.18654	0.16068	0.17271	-0.01838	0.4161
Heteropho	0.14501	0.05521	-0.04708	-0.13965	-0.05424	-0.07114	0.03053	0.31789
Sporormiel	-0.165	-0.12639	-0.31938	-0.14573	-0.36094	-0.45634	0.37112	0.42209
Preussia	-0.05647	0.09937	0.03571	0.10202	-0.02991	-0.13233	0.26626	0.19787
Mucor	-0.20622	-0.07167	-0.16357	-0.06003	-0.15551	-0.13197	0.05075	0.08327
Thelebolus	0.03269	-0.07903	-0.30257	-0.16377	-0.29011	-0.42069	0.12576	0.44879
Penicillium	-0.01508	-0.05522	-0.18616	-0.12048	-0.19271	-0.29585	0.10531	0.26192
Ascochyta	0.33367	0.13943	-0.27328	-0.14349	-0.10487	-0.23699	0.09197	0.44149
Dematiopl	0.19383	0.07339	-0.23258	-0.38954	-0.01633	-0.15532	-0.14031	0.2853
Tranzscheli	0.36958	0.16602	-0.1347	-0.17405	0.19324	-0.06414	0.01685	0.32527
Alternaria	0.30241	0.00848	-0.11148	-0.14336	0.07552	-0.03586	-0.43501	0.11741
Paraphaeo	0.45484	0.14447	-0.11777	-0.05843	0.19619	-0.02449	0.25241	0.35762
Phoma	0.53057	0.28017	-0.08892	-0.19316	0.08874	-0.12465	0.13203	0.40394
Coprinopsi	0.22164	-0.01697	0.14553	0.11033	0.11059	0.13922	0.21829	0.37101
Beauveria	-0.07889	-0.23672	-0.29152	-0.16838	-0.16899	-0.20683	-0.04738	0.29073
Botrytis	0.08062	-0.20626	-0.18977	-0.07369	-0.1316	-0.21515	-0.09034	0.49193
Nothophor	0.24356	0.34668	-0.00298	-0.03577	0.19509	0.05763	0.26519	0.30653
Didymella	0.46724	0.13372	-0.02007	-0.02153	0.20552	0.02101	-0.07315	0.1926
Vishniacozy	0.14291	0.03855	0.28607	0.24934	0.47435	0.46642	-0.31573	-0.16509
Purpureoci	-0.00324	-0.23639	-0.16808	-0.12801	0.03447	0.00293	-0.27586	0.06206
Xylaria	0.09274	0.05356	-0.21811	-0.11201	0.02485	-0.11608	-0.09168	-0.12443

Phaeosph aeria	Cladospori um	Heteroph oma	Sporormie lla	Preussia	Mucor	Thelebolu s	Penicilliu m	Ascochyta
0.09332	0.05449	0.14501	-0.165	-0.05647	-0.20622	0.03269	-0.01508	0.33367
0.22832	0.0889	0.05521	-0.12639	0.09937	-0.07167	-0.07903	-0.05522	0.13943
0.11642	0.11843	-0.04708	-0.31938	0.03571	-0.16357	-0.30257	-0.18616	-0.27328
0.0848	0.18654	-0.13965	-0.14573	0.10202	-0.06003	-0.16377	-0.12048	-0.14349
0.25102	0.16068	-0.05424	-0.36094	-0.02991	-0.15551	-0.29011	-0.19271	-0.10487
-0.07291	0.17271	-0.07114	-0.45634	-0.13233	-0.13197	-0.42069	-0.29585	-0.23699
0.38499	-0.01838	0.03053	0.37112	0.26626	0.05075	0.12576	0.10531	0.09197
0.39215	0.4161	0.31789	0.42209	0.19787	0.08327	0.44879	0.26192	0.44149
--	0.14692	-0.15964	0.16952	0.05393	0.02783	0.14665	0.18924	0.2643
0.14692	--	0.30346	0.06691	0.12175	0.57162	0.44031	0.13123	0.27222
-0.15964	0.30346	--	0.16434	0.44154	0.31754	0.39353	0.33324	0.17097
0.16952	0.06691	0.16434	--	0.21126	0.15006	0.52435	0.43358	0.25834
0.05393	0.12175	0.44154	0.21126	--	0.19255	0.38254	0.47589	0.21241
0.02783	0.57162	0.31754	0.15006	0.19255	--	0.3802	0.13662	0.20034
0.14665	0.44031	0.39353	0.52435	0.38254	0.3802	--	0.56687	0.53106
0.18924	0.13123	0.33324	0.43358	0.47589	0.13662	0.56687	--	0.38811
0.2643	0.27222	0.17097	0.25834	0.21241	0.20034	0.53106	0.38811	--
0.02868	0.13271	0.41158	-0.07773	-0.03904	0.03668	0.27397	0.11375	0.36641
0.43795	-0.27136	-0.0011	0.1613	-0.14153	-0.40302	0.0448	0.07013	0.255
0.07693	0.06767	0.14598	-0.15173	-0.1049	-0.16675	0.20766	0.28601	0.28887
0.39664	0.06291	0.18168	0.19281	0.1216	-0.30356	0.21169	0.19176	0.33864
0.36207	0.05632	0.38925	0.22943	0.20169	-0.08183	0.34911	0.38311	0.53169
0.22677	0.27324	0.17037	0.11688	-0.02561	0.03549	0.2193	0.01304	0.11106
0.29021	0.19637	0.27326	0.34829	0.16542	0.13585	0.5512	0.43521	0.34109
0.19908	0.31707	0.10845	0.20193	-0.02514	0.22704	0.47747	0.19209	0.39015
0.37654	0.37221	0.22722	0.01899	0.07764	0.23919	0.18257	0.13159	0.46628
0.26807	-0.0253	-0.03656	-0.0566	-0.1876	-0.31057	0.04072	0.17154	0.40036
0.027	0.12437	0.02467	-0.41632	-0.13394	-0.06558	-0.15092	-0.07342	0.02134
0.11297	-0.04585	0.01424	-0.08717	-0.04024	-0.09611	0.07786	0.03821	0.03892
-0.18507	0.23265	0.26316	0.13368	0.23485	0.24704	0.2335	0.23379	0.24286

Dematiopl eospora	Tranzschel iella	Alternaria	Paraphae osphaeria	Phoma	Coprinopsi s	Beauveria	Botrytis	Nothopho ma
0.19383	0.36958	0.30241	0.45484	0.53057	0.22164	-0.07889	0.08062	0.24356
0.07339	0.16602	0.00848	0.14447	0.28017	-0.01697	-0.23672	-0.20626	0.34668
-0.23258	-0.1347	-0.11148	-0.11777	-0.08892	0.14553	-0.29152	-0.18977	-0.00298
-0.38954	-0.17405	-0.14336	-0.05843	-0.19316	0.11033	-0.16838	-0.07369	-0.03577
-0.01633	0.19324	0.07552	0.19619	0.08874	0.11059	-0.16899	-0.1316	0.19509
-0.15532	-0.06414	-0.03586	-0.02449	-0.12465	0.13922	-0.20683	-0.21515	0.05763
-0.14031	0.01685	-0.43501	0.25241	0.13203	0.21829	-0.04738	-0.09034	0.26519
0.2853	0.32527	0.11741	0.35762	0.40394	0.37101	0.29073	0.49193	0.30653
0.02868	0.43795	0.07693	0.39664	0.36207	0.22677	0.29021	0.19908	0.37654
0.13271	-0.27136	0.06767	0.06291	0.05632	0.27324	0.19637	0.31707	0.37221
0.41158	-0.0011	0.14598	0.18168	0.38925	0.17037	0.27326	0.10845	0.22722
-0.07773	0.1613	-0.15173	0.19281	0.22943	0.11688	0.34829	0.20193	0.01899
-0.03904	-0.14153	-0.1049	0.1216	0.20169	-0.02561	0.16542	-0.02514	0.07764
0.03668	-0.40302	-0.16675	-0.30356	-0.08183	0.03549	0.13585	0.22704	0.23919
0.27397	0.0448	0.20766	0.21169	0.34911	0.2193	0.5512	0.47747	0.18257
0.11375	0.07013	0.28601	0.19176	0.38311	0.01304	0.43521	0.19209	0.13159
0.36641	0.255	0.28887	0.33864	0.53169	0.11106	0.34109	0.39015	0.46628
--	0.2796	0.2864	0.40492	0.46141	0.11716	0.26501	0.28031	0.07457
0.2796	--	0.37435	0.6562	0.68758	0.05911	0.19613	0.14845	0.26398
0.2864	0.37435	--	0.24708	0.45848	-0.21882	0.2696	0.26435	0.20729
0.40492	0.6562	0.24708	--	0.69729	0.37302	0.34213	0.29852	0.33895
0.46141	0.68758	0.45848	0.69729	--	0.10718	0.39275	0.21294	0.41392
0.11716	0.05911	-0.21882	0.37302	0.10718	--	0.17632	0.31522	0.00386
0.26501	0.19613	0.2696	0.34213	0.39275	0.17632	--	0.32222	0.03162
0.28031	0.14845	0.26435	0.29852	0.21294	0.31522	0.32222	--	0.16279
0.07457	0.26398	0.20729	0.33895	0.41392	0.00386	0.03162	0.16279	--
0.44911	0.40697	0.39791	0.47921	0.49909	0.04477	0.10133	0.30981	0.24325
0.18213	0.01888	0.29728	-0.03899	-0.11373	-0.08824	-0.02622	-0.0683	0.04914
0.10436	0.16568	0.40617	0.04238	0.14526	-0.23277	0.36928	0.21953	0.03407
0.2707	-0.08011	0.18387	0.24263	0.19441	-0.09187	0.23321	-0.09976	0.03015

Didymella	Vishniacoz yma	Purpureoc illium	Xylaria
0.46724	0.14291	-0.00324	0.09274
0.13372	0.03855	-0.23639	0.05356
-0.02007	0.28607	-0.16808	-0.21811
-0.02153	0.24934	-0.12801	-0.11201
0.20552	0.47435	0.03447	0.02485
0.02101	0.46642	0.00293	-0.11608
-0.07315	-0.31573	-0.27586	-0.09168
0.1926	-0.16509	0.06206	-0.12443
0.26807	0.027	0.11297	-0.18507
-0.0253	0.12437	-0.04585	0.23265
-0.03656	0.02467	0.01424	0.26316
-0.0566	-0.41632	-0.08717	0.13368
-0.1876	-0.13394	-0.04024	0.23485
-0.31057	-0.06558	-0.09611	0.24704
0.04072	-0.15092	0.07786	0.2335
0.17154	-0.07342	0.03821	0.23379
0.40036	0.02134	0.03892	0.24286
0.44911	0.18213	0.10436	0.2707
0.40697	0.01888	0.16568	-0.08011
0.39791	0.29728	0.40617	0.18387
0.47921	-0.03899	0.04238	0.24263
0.49909	-0.11373	0.14526	0.19441
0.04477	-0.08824	-0.23277	-0.09187
0.10133	-0.02622	0.36928	0.23321
0.30981	-0.0683	0.21953	-0.09976
0.24325	0.04914	0.03407	0.03015
--	0.18213	0.24284	0.06961
0.18213	--	0.08132	0.2282
0.24284	0.08132	--	-0.16823
0.06961	0.2282	-0.16823	--