

Table S1. Taxa, isolate information and accession numbers for sequences retrieved from GenBank. New sequences determined for this study and taxonomic novelties are given bold.

Taxon	Strain	Status	Country	Host	Substrate	GenBank accessions	
						ITS	28S
<i>Adautomilanezia caesalpiniae</i>	CC-LAMIC 102/12	T	Brazil	<i>Caesalpinia echinata</i>	wood	KX821777	KU170671
<i>Achrochaeta talbotii</i>	ICMP 15161		New Zealand	unidentified	decaying wood	MT454480	MT454495
<i>Anacacumisporium appendiculatum</i>	HMAS 245593	T	China	broad-leaved tree	dead stems	KP347129	KT001553
<i>Bahusutrabeeja dwaya</i>	CBS 261.77	T	India	<i>Coffea arabica</i>	dead twig	MH861059	MH872829
<i>Brunneodinemasporium brasiliense</i>	CBS 112007	T	Brazil	unidentified	decaying leaf	JQ889272	JQ889288
<i>Brunneodinemasporium jonesii</i>	GZCC 16-0050	T	China	unidentified	decaying wood	KY026058	KY026055
<i>Cacumisporium capitulatum</i>	FMR 11339		Spain	unidentified	decaying wood	HF677176	HF677190
<i>Calvolachnella guaviyunis</i>	CBS 134695	T	Uruguay	<i>Myrcianthes pungens</i>	bark	KJ834524	KJ834525
<i>Catenularia cubensis</i>	S.M.H. 3258		Costa Rica	unidentified	decaying wood	<b>MW987826</b>	AF466067
<i>Catenularia angulospora</i>	MFLUCC 18-1331 <sup>#</sup>		China	unidentified	submerged wood	MK828638	MK835840
<b><i>Catenularia catenulata</i></b>	S-298		China	unidentified	submerged wood	—	MK835839
<b><i>Catenularia catenulata</i></b>	DLUCC 0891	T	China	unidentified	submerged wood	MK828637	MK835838
<b><i>Catenularia minor</i></b>	PRM 900544*	T	Thailand	unidentified	bamboo culm	<b>MW987827</b>	<b>MW987822</b>
<i>Chaetosphaeria conirostris</i>	S.M.H. 2183	T	Costa Rica	unidentified	decaying wood	—	AF466066
<i>Chaetosphaeria curvispora</i>	ICMP 18255		New Zealand	unidentified	decaying wood	—	GU180636
<i>Chaetosphaeria fusiformis</i>	CBS 101429		Czech Republic	<i>Abies alba</i>	decaying bark	AF178554	AF178554
<i>Chaetosphaeria innumera</i>	M.R. 1175		Czech Republic	<i>Fagus sylvatica</i>	decaying wood	AF178551	AF178551
<i>Chaetosphaeria lignomollis</i>	S.M.H. 3015	T	Puerto Rico	unidentified	decaying wood	EU037896	AF466073
<i>Chaetosphaeria mangrovei</i>	MCD 069	T	Thailand	mangrove	decaying wood	MG813821	MG813820
<i>Chaetosphaeria metallicans</i>	PDD 92539	T	New Zealand	<i>Nothofagus</i> sp.	decaying wood	EU037893	EU037899
<i>Chaetosphaeria myriocarpa</i>	CBS 264.76	N	The Netherlands	unidentified	decaying wood	AF178552	AF178552
<i>Chaetosphaeria pygmaea</i>	M.R. 1365		Czech Republic	<i>Fagus sylvatica</i>	decaying wood	AF178545	AF178545
<b><i>Chalarodes obpyramidata</i></b>	PDD 119364	T	New Zealand	<i>Nothofagus</i> sp.	wood	<b>MW987828</b>	<b>MW987823</b>
<i>Chloridium caesium</i>	CBS 102339		Austria	<i>Salix cinerea</i>	decaying wood	AF178564	AF178564
<i>Chloridium gonytrichii</i>	CBS 195.60		South Africa	unidentified	unknown	MH857954	MH869503
<i>Chloridium virescens</i>	CBS 152.53		France	<i>Acer</i> sp.	unknown	MH857142	MH868678
<i>Codinaea paniculata</i>	CBS 145098	T	France	unidentified	submerged wood	MT118230	MT118201
<i>Codinaeopsis gonytrichodes</i>	CBS 593.93		Japan	unidentified	decaying plant material	AF178556	AF178556
<i>Conicomycetes pseudotransvaalensis</i>	HHUF 29956	T	Japan	<i>Machilus japonica</i>	dead twig	LC001710	LC001708
<i>Cryptophiale hamulata</i>	MFLUCC 18-0098	E	Thailand	unidentified	decaying leaf	—	MG386756
<i>Cryptophiale udagawae</i>	GZCC 18-0047		China	unidentified	decaying wood	MN104608	MN104619
<i>Cryptophialoidea fasciculata</i>	MFLU 18-1499		Thailand	unidentified	submerged wood	MH758195	MH758208
<i>Dendrophoma cytisporoides</i>	CBS 144107		Germany	<i>Buxus sempervivens</i>	decaying bark	MT118234	MT118205
<i>Dictyochoaeta callimorpha</i>	ICMP 15155		New Zealand	unidentified	decaying wood	MT454484	MT454499
<i>Dictyochoaeta fuegiana</i>	ICMP 15153	T	New Zealand	unidentified	decaying wood	MT454487	EF063574
<i>Dictyochoaeta querna</i>	CBS 145503		Czech Republic	<i>Quercus cerris</i>	acorn	MT454489	MT454503
<i>Dictyochoaeta terminalis</i>	GZCC 18-0085	T	China	unidentified	decaying leaves	MN104613	MN104624

<i>Dinemasporium cruciferum</i>	HHUF 30001		Japan	<i>Arundo donax</i>	unknown	AB900895	AB934039
<i>Dinemasporium decipiens</i>	CBS 592.73		Suriname	n/a	soil under <i>Elaeis guineensis</i>	JQ889275	JQ889291
<i>Dinemasporium pseudoindicum</i>	CBS 127402	T	USA	n/a	soil of tallgrass prairie	JQ889277	JQ889293
<i>Ellisembia aurea</i>	CBS 144403	T	France	<i>Sambucus nigra</i>	decaying wood	MH836375	MH836376
<i>Ellisembia folliculata</i>	CBS 101317		France	<i>Salix</i> sp.	decaying wood	—	AF261071
<i>Eucalyptostroma eucalypti</i>	CBS 142074	T	Malaysia	<i>Eucalyptus pellita</i>	leaf spots	KY173408	KY173500
<i>Exserticlava vasiformis</i>	TAMA 450		Japan	unidentified	plant debris	—	AB753846
<b><i>Fuscocatenula submersa</i></b>	MFLUCC 18-1342	T	China	unidentified	submerged wood	MK828634	MK835835
<b><i>Fuscocatenula submersa</i></b>	S-844		China	unidentified	submerged wood	—	MK835834
<i>Infundibulomyces cupulatus</i>	BCC 11929	T	Thailand	<i>Lagerstroemia</i> sp.	dead leaf	EF113976	EF113979
<i>Infundibulomyces oblongisporus</i>	BCC 13400	T	Thailand	unidentified, angiosperm	leaf litter	EF113977	EF113980
<i>Kionochaeta castaneae</i>	GZCC 18-0025	T	China	<i>Castanea mollissima</i>	decaying seed shell	MN104610	MN104621
<i>Kionochaeta microspora</i>	GZCC 18-0036	T	China	unidentified	decaying wood	MN104607	MN104618
<i>Kionochaeta ramifera</i>	MUCL 39164		Cuba	unidentified	leaf	MW144421	MW144404
<i>Menispora caesia</i>	CBS 144659		Czech Republic	unidentified	decaying wood	MW984578	MW984560
<i>Menispora ciliata</i>	CBS 122131	T	Czech Republic	<i>Acer campestre</i>	decaying wood	EU488736	MH874726
<i>Menispora tortuosa</i>	DAOM 231154		n/a	unidentified	n/a	KT225527	AY544682
<i>Menisporopsis breviseta</i>	GZCC 18-0071	T	China	unidentified	decaying leaves	MN104612	MN104623
<i>Menisporopsis dushanensis</i>	GZCC 18-0084	T	China	unidentified	decaying leaves	MN104615	MN104626
<i>Menisporopsis theobromae</i>	MFLUCC 15-0055		Thailand	unidentified	submerged decaying wood	KX609957	KX609954
<i>Nawawia filiformis</i>	MFLUCC 17-2394		Thailand	unidentified	decaying wood	MH758196	MH758209
<i>Neopseudolachnella acutispora</i>	MAFF 244358	T	Japan	<i>Pleioblastus chino</i>	dead twigs	AB934065	AB934041
<i>Neopseudolachnella magnispora</i>	MAFF 244359	T	Japan	<i>Sasa kurilensis</i>	dead twigs	AB934066	AB934042
<i>Paliphora intermedia</i>	CBS 896.97	I	Australia	unidentified	leaf litter	MH862682	EF204501
<i>Paragaeumannomyces garethjonesii</i>	MFLUCC 15-1012	T	Thailand	Fabaceae	seed pod	KY212751	KY212759
<i>Paragaeumannomyces panamensis</i>	S.M.H. 3596	T	Panama	unidentified	decaying wood	AY906948	MT118218
<i>Paragaeumannomyces rubicundus</i>	S.M.H. 3221	T	Costa Rica	unidentified	decaying wood	MT118242	MT118224
<i>Paragaeumannomyces sabinianus</i>	ILLS121384	T	USA	unidentified	decaying wood	MT118243	MT118225
<i>Phaeostalagmus cyclosporus</i>	CBS 663.70		The Netherlands	<i>Quercus</i> sp.	decaying bark	MH859892	MH871680
<i>Phialosporostilbe scutiformis</i>	MFLUCC 17-0227	T	China	unidentified	submerged decaying wood	MH758194	MH758207
<i>Polynema podocarp</i>	CBS 144415	T	New Zealand	<i>Podocarpus totara</i>	unknown	MH327797	MH327833
<i>Pseudodinemasporium fabiforme</i>	CBS 140010		Malaysia	<i>Acacia mangium</i>	leaf spots	KR611889	KR611906
<i>Pseudolachnea fraxini</i>	CBS 113701	T	Sweden	<i>Fraxinus excelsior</i>	unknown	JQ889287	JQ889301
<i>Pseudolachnea hispidula</i>	MAFF 244365		Japan	<i>Morus bombycis</i>	dead twig	AB934072	AB934048
<i>Pseudolachnella asymmetrica</i>	MAFF 244366	T	Japan	<i>Phyllostachys nigra</i> var. <i>henonis</i>	dead twig	AB934073	AB934049
<i>Pseudolachnella scolecospora</i>	MAFF 244379		Japan	<i>Sasa</i> sp.	dead twigs	AB934086	AB934062
<i>Pyrigemmula aurantiaca</i>	CBS 126743	T	Hungary	<i>Vitis vinifera</i>	bark	HM241692	HM241692
<i>Rattania setulifera</i>	GUFCC 15501	T	India	<i>Calamus thwaitesii</i>	leaves	GU191794	HM171322
<i>Sporoschisma hemipsilum</i>	MUCL 56487		Martinique	unidentified	wood	<b>MW987829</b>	<b>MW987824</b>
<i>Sporoschisma longicatenatum</i>	MFLUCC 16-0180	T	Thailand	unidentified	submerged decaying wood	KX505871	KX358077
<i>Sporoschisma mirabile</i>	CBS 144794		France	<i>Alnus glutinosa</i>	submerged wood	<b>MW987830</b>	<b>MW987825</b>

<i>Sporoschisma taitense</i>	KUMCC 15-0241		China	unidentified	submerged wood	KX455865	KX455858
<i>Stanjehughesia hormiscioides</i>	CBS 102664		Ukraine	<i>Fagus sylvatica</i>	decaying wood	—	AF261069
<i>Striatosphaeria castanea</i>	CBS 145352	T	French Guinea	woody liana	decaying periderm	MT118244	MT118229
<i>Striatosphaeria codinaeophora</i>	M.R. 1230		Puerto Rico	<i>Dacryodes excelsa</i>	decaying wood	AF178546	AF178546
<i>Tainosphaeria crassiparies</i>	S.M.H. 1934	T	Puerto Rico	<i>Hymenaea</i> sp.	seed pod	—	AF466089
<i>Tainosphaeria jonesii</i>	GZCC 16-0065	P	China	unidentified	submerged decaying wood	KY026060	KY026057
<i>Tainosphaeria siamensis</i>	MFLUCC 15-0607	T	Thailand	unidentified	submerged decaying wood	KX609956	KX609953
<i>Thozetella fabacearum</i>	MFLUCC 15-1020	T	Thailand	Fabaceae	seed pod	KY212754	KY212762
<i>Thozetella nivea</i>	n/a		unknown	unidentified	unknown	EU825201	EU825200
<i>Thozetella tocklaiensis</i>	CBS 378.58	T	India	<i>Camellia sinensis</i>	decaying flower	MH857817	MH869349
<i>Tracylla aristata</i>	CBS 141404	E	Australia	<i>Eucalyptus regnans</i>	leaf	KX306770	KX306795
<i>Tracylla eucalypti</i>	CBS 144429	T	Colombia	<i>Eucalyptus urophylla</i>	spots on living leaves	MH327810	MH327846
<i>Zanclospora iberica</i>	CBS 130426	T	Spain	unidentified	decaying wood	KY853480	KY853544
<i>Zanclospora novae-zelandiae</i>	ICMP 15781	E	New Zealand	<i>Fuscospora cliffortioides</i>	decaying wood	MW144429	MW144411
<i>Zanclospora xylophila</i>	ICMP 22737	T	New Zealand	unidentified	decaying wood	MW144437	MW144417

Notes:

T, E, I, N and P denote ex-type, ex-epitype, ex-isotype, ex-neotype and ex-paratype strains.

# *Catenularia cubensis* fide Luo et al. (2019)

\* holotype of *Chaetosphaeria trianguloconidia*