

**Table S1.** Strains and sequence accession numbers included in this study.

Taxon	Strain number <sup>1</sup>	GenBank accession number				
		LSU <sup>3</sup>	ITS	<i>tub2</i>	<i>rpb2</i>	<i>tef1</i>
<i>Allocurbitaria botulispora</i>	CBS 234.92 <sup>T</sup>	LN907416	LT592932	LT593001	LT593070	
<i>Amniculicola aquatica</i>	MFLUCC 16-1123 <sup>T</sup>	MK106096				MK109800
<i>A. guttulata</i>	MFLUCC 18-1038 <sup>T</sup>	MN913712	MT627726			MT954389
<i>A. immersa</i>	CBS 123083	NG_056964				GU456273
<i>A. lignicola</i>	CBS 123094 <sup>T</sup>	MH874798				GU456278
<i>A. longissima</i>	CB L22	GU266240	AY204596			
<i>A. longissima</i>	CCM-F11791	AY204594	AY204597			
<i>A. microspora</i>	<b>FMR 17946<sup>2</sup></b> <b>CBS 148919<sup>T</sup></b>	<b>ON008450</b>	<b>ON006460</b>			<b>ON101726</b>
<i>A. parva</i>	CBS 123092 <sup>T</sup>	FJ795497	MH863272			GU349065
<i>Arthopyrenia salicis</i>	CBS 368.94	KF443410				
<i>Chaetomella endophytica</i>	SDBR-CMU300 <sup>T</sup>	MG406984	MG406985			
<i>C. raphigera</i>	BPI 843541 <sup>T</sup>	AY487077	AY487076			
<i>C. raphigera</i>	CBS 130.64	MH870019	MH858390			
<i>C. raphigera</i>	BPI 843551	AY487086	AY487085			
<i>C. zambiensis</i>	CBS 137978 <sup>T</sup>	MH878619	NR_156280			
<i>Cucurbitaria berberidis</i>	CBS 142401	MF795756	MF795756	MF795886	MF795798	
<i>C. berberidis</i>	CBS 130007 <sup>T</sup>	KC506793	LT717673	LT717676	LT854936	
<i>Elongatopedicellata aquatica</i>	<b>FMR 17834</b> <b>CBS 148920<sup>T</sup></b>	<b>ON008448</b>				
<i>E. lignicola</i>	MFLUCC 15-0642 <sup>T</sup>	KX421368				
<i>Flabellascoma aquaticum</i>	KUMCC 15-0258 <sup>T</sup>	NG_068307	NR_166305		MN328895	MN328898

<i>F. fusiforme</i>	MFLUCC 18-1019	MT627660	MT627741		MT878452	MT95440
<i>Fouskomenomyces cupreorufescens</i>	A20 <sup>T</sup>	AY616236	AY616232			
<i>F. mimiticus</i>	FMR 16958 <sup>T</sup>	LR824585	LR824586			LR824584
<i>Leptosphaeria dolium</i>	CBS 125979	JF740283	JF740208			
<i>L. dolium</i>	CBS 505.75 <sup>T</sup>	GQ387576	JF740205			GU349069
<i>Lophiostoma crenatum</i>	CBS 629.86 <sup>T</sup>	DQ678069			KT216552	DQ677912
<i>L. macrostomum</i>	KT 635				JN993484	
<i>L. semiliberum</i>	KT 828	AB619014	JN942970		JQ012895	LC001759
<i>Murispora aquatica</i>	MFLU 19-0990 <sup>T</sup>	MN325075	MN325085			MN337969
<i>M. cicognanii</i>	MFLUCC 14-0953 <sup>T</sup>	NG_059609	NR_155381			MK109804
<i>M. fagicola</i>	MFLUCC 13-0600 <sup>T</sup>	NG_060797	NR_155379			KT709188
<i>M. fissilispora</i>	FMR 17151 <sup>T</sup>	LR824597	LR824594			LR824591
<i>M. haswksworthii</i>	MFLUCC 14-0918 <sup>T</sup>	KT709180	NR_138414			KT709192
<i>M. medicaginicola</i>	MFLUCC 13-0762 <sup>T</sup>	NG_059609	NR_155380			KT709191
<i>M. rubicunda</i>	IFRD 2017 <sup>T</sup>	FJ795507				GU456289
<i>Neocucurbitaria acerina</i>	MFLUCC 16-1450 <sup>T</sup>	NG_059784	NR_154254			
<i>N. aquatica</i>	CBS 297.74 <sup>T</sup>	EU754177	LT623221	LT623238	LT623278	
<i>N. quercina</i>	CBS 115095 <sup>T</sup>	GQ387619	LT623220	LT623237	LT623277	
<i>N. unguis hominis</i>	CBS 111112	GQ387623	LT623222	LT623239	LT623279	
<i>N. unguis hominis</i>	UTHSC: DI16-213 <sup>T</sup>		LT717672	LT717675	LT717682	
<i>Neopyrenochaeta acicola</i>	CBS 812.95 <sup>T</sup>	GQ387602	LT623218	LT623232	LT623271	
<i>N. annellidica</i>	MFLU 11-1105 <sup>T</sup>	MT183502	MT185538			
<i>N. inflorescentiae</i>	CBS 119222 <sup>T</sup>	EU552153	EU552153	LT623233	LT623272	

<i>N. thailandica</i>	MFLU 17-1461 <sup>T</sup>	NG_068716	MT214376		MT235825	
<i>Neovaginatisspora aquadulcis</i>	<b>FMR 18914</b> <b>CBS 148921<sup>T</sup></b>	<b>ON008451</b>	<b>ON006463</b>		<b>ON101724</b>	<b>ON101727</b>
<i>N. clematidis</i>	MFLU 17-2149 <sup>T</sup>	NG_073846	MT310606			MT394738
<i>N. fuckelii</i>	SICAUCC 20-0008	MT427734	MT427731	MT441924		MT441923
<i>Pilidium acerinum</i>	CBS 736.68 <sup>T</sup>	MH870939	NR_119500			
<i>P. anglicum</i>	CBS 143402 <sup>T</sup>	NG_058522	NR_156670			
<i>P. cuprensens</i>	<b>FMR 17839</b> <b>CBS 148922<sup>T</sup></b>	<b>ON008449</b>	<b>ON006459</b>			
<i>P. eucalyptorum</i>	CPC:26594 <sup>T</sup>	NG_059618	NR_145311			
<i>P. lythri</i>	BPI 1107275 <sup>T</sup>	AY487095	AY487094			
<i>P. lythri</i>	BJ-4	MH322002	MH322003			
<i>P. novae zelandiae</i>	CPC:35872 <sup>T</sup>	NG_068665	NR_165928			
<i>P. pseudoconcaum</i>	CBS 136433 <sup>T</sup>	NG_058050	NR_137128			
<i>P. septatum</i>	BCC 79016 <sup>T</sup>	NG_060185	NR_156616			
<i>Platystomum scabridisporum</i>	BC 2235	GQ925844			GU479830	GU479857
<i>P. scabridisporum</i>	BC 2236	GQ925845			GU479829	GU479856
<i>Pleospora herbarum</i>	CBS 191.86 <sup>T</sup>	JX681120	NR_111243		KC584471	
<i>P. typhicola</i>	CBS 132.69	JF740325		KT389843	KC584505	
<i>Pseudolophiostoma obtusisporum</i>	KT 2838 <sup>T</sup>	LC312548	LC312518			LC312576
<i>P. tropicum</i>	KT 3134 <sup>T</sup>	LC312551	LC312522		LC312609	LC312580
<i>Pseudopyrenochaeta lycopersici</i>	CBS 306.65 <sup>T</sup>	EU754205	NR_103581	LT717674	LT717680	
<i>P. terrestris</i>	CBS 282.72 <sup>T</sup>	LT623216	LT623228	LT623246	LT623287	
<i>Pseudosigmoidea alnicola</i>	CBS 145034 <sup>T</sup>	NG_070465	NR_163379			

<i>P. excentricum</i>	CBS 469.95 <sup>T</sup>	MH874174	MH862538		
<i>P. ibarakiensis</i>	NBRC 107891 <sup>T</sup>	LC146759	LC146758		
<i>P. robusta</i>	<b>FMR 17416</b>	<b>ON008447</b>	<b>ON006458</b>		
<i>Pyrenochaeta nobilis</i>	CBS 407.76 <sup>T</sup>	EU754206	EU930011	KT389845	LT623276
<i>Pyrenochaetopsis americana</i>	UTHSC: DI16-225 <sup>T</sup>	LN907368	LT592912	LT592981	LT593050
<i>P. aquatica</i>	FMR 17327	LR216649	LR216648	LR897788	LR216647
<i>P. botulispora</i>	UTHSC: DI16-298	LN907432	LT592941	LT593010	LT593080
<i>P. chromolaenae</i>	MFLU 17-1446 <sup>T</sup>	MT214469	NR_168876		MT235824
<i>P. confluens</i>	CBS 142459 <sup>T</sup>	LN907446	LT592950	LT593019	LT593089
<i>P. cylindrispora</i>	<b>FMR 18801</b> <b>CBS 148924</b>	<b>ON008446</b>	<b>ON006461</b>	<b>ON101729</b>	<b>ON101725</b>
<i>P. decipiens</i>	CBS 343.85 <sup>T</sup>	GQ387624	LT623223	LT623240	LT623280
<i>P. globosa</i>	UTHSC: DI16-275 <sup>T</sup>	LN907418	LT592934	LT593003	LT593072
<i>P. indica</i>	CBS 124454 <sup>T</sup>	GQ387626	LT623224	LT623241	LT623281
<i>P. kuksensis</i>	CBS 146534	MT371397	NR_172539	MT372662	MT372656
<i>P. leptospora</i>	CBS 101635 <sup>T</sup>	GQ387627	JF740262	LT623242	LT623282
<i>P. microspora</i>	UTHSC: DI16-198	LN907341	LT592899	LT592968	LT593037
<i>P. paucisetosa</i>	UTHSC: DI16-193 <sup>T</sup>	LN907336	LT592897	LT592966	LT593035
<i>P. perfecta</i>	<b>FMR 18913</b> <b>CBS 148923<sup>T</sup></b>	<b>ON008445</b>	<b>ON006462</b>	<b>ON101728</b>	<b>ON168928</b>
<i>P. poae</i>	CBS 136769 <sup>T</sup>	KJ869175	KJ869117	KJ869243	LT623286
<i>P. setosissima</i>	CBS 119739 <sup>T</sup>	GQ387632	LT623227	LT623245	LT623285
<i>P. sinensis</i>	LC12199	MK348581	MK348586	MK348221	MK355077
<i>P. tabarestanensis</i>	CBS 139506	KF803343	KF730241	KX789523	
<i>P. terricola</i>	HGUP1802	MH697393	MH697394	MH697392	MH697395

<i>P. rajhradensis</i>	CBS 146846 <sup>T</sup>	MT853182	MT853115	MT857726	MT857727	
<i>P. uberiformis</i>	UTHSC: DI16-277 <sup>T</sup>	LN907420	LT592935	LT593004	LT593074	
<i>Roussoella arundinacea</i>	CBS 146088	MT223928				
<i>R. doimaesalongensis</i>	MFLU 14-0584	NG_068241				
<i>R. euonymi</i>	CBS 143426 <sup>T</sup>	MH107961				
<i>R. guttulata</i>	MFLU 20-0102 <sup>T</sup>	MT734818				
<i>R. hysteroidea</i>	CBS 546.94 <sup>T</sup>	MH874129				
<i>R. intermedia</i>	CBS 170.96 <sup>T</sup>	KF443382				
<i>R. kunmingensis</i>	HKAS 101773 <sup>T</sup>	MH453487				
<i>R. margidorensis</i>	MUT 5329	MN556322				
<i>R. mediterranea</i>	MUTITA 5369 <sup>T</sup>	MN556324				
<i>R. mexicana</i>	NTU 18-099-3	MT071282				
<i>R. mukdahanensis</i>	HKAS 101766	MH453485				
<i>R. pustulans</i>	KT1709 <sup>T</sup>	AB524623				
<i>R. solani</i>	KT 3265 <sup>T</sup>	LC195210				
<i>Sporidesmium australiense</i>	HKU 10833	DQ408554				
<i>Sympoventuria capensis</i>	CBS 120136 <sup>T</sup>	MH874632	NR_121323			
<i>S. melaleuca</i>	CBS 143407 <sup>T</sup>	NG_058520	NR_156668			
<i>Torula herbarum</i>	CBS 379.58	KF443383				
<i>T. herbarum</i>	CBS 111855	KF443386				
<i>Tricladium splendens</i>	CCM-F 16599	GQ477333	AY204635			
<i>T. splendens</i>	CBS 234.46 <sup>T</sup>	MH867695	MH856171			
<i>Vaginatispora amygdali</i>	KT 2248 <sup>T</sup>	LC312553	LC312524	LC312640	LC312611	LC312582
<i>V. nypae</i>	MFLUCC 18-1543 <sup>T</sup>	NG_066313	NR_163340		MK434877	MK360091
<i>V. scabrispora</i>	KT 2443 <sup>T</sup>	LC312554	LC312525	LC312641	LC312612	LC312583

<b><i>Vargamyces aquaticus</i></b>	CBS 636.91 <sup>T</sup>	KY853539	NR_154471
<b><i>V. aquaticus</i></b>	FMR 11587	KY853538	KY853475
<b><i>Venturia inaequalis</i></b>	CBS 814.69 <sup>T</sup>	MH871214	MH859439
<b><i>V. pyrina</i></b>	CBS 120825 <sup>T</sup>	MH874652	EU035468
<b><i>Xeropilidium dennisii</i></b>	TFC 201986 <sup>T</sup>		NR_171225
<b><i>X. dennisii</i></b>	KL159	KX090807	

<sup>1</sup>A Hermann Volgmayr; BC:; **BCC**: BIOTEC Culture Collection; **CBS**: Culture collection of the Westerdijk Biodiversity Institute, Utrecht, The Netherlands; **CCM**: Czech Collections of Microorganisms; **CPC**: Culture Collection of Pedro Crous; **FMR**: Facultat de Medicina, Reus, Spain; **HGUP**: Corresponding author's personal collection deposited in laboratory, housed at Guizhou, China; **HKAS**: Cryptogamic Herbarium of Kunming Institute of Botany, Chinese Academy of Sciences; **IFRD**: Culture Collection, International Fungal Research & Development Centre, Chinese Academy of Forestry, Kunming, China; **KT**: Kazuaki Tanaka; **KUMCC**: Kunming Institute of Botany Culture Collection; **LC**: Corresponding author's personal collection deposited in laboratory, housed at CAS, China; **MFLU (MFLUCC)**: Mae Fah Luang University Herbarium, Chiang Rai, Thailand; **MUT, MUTITA**: Mycoteca Universitatis Taurinensis; **NBRC**: NITE Biological Resource Center; **TFC**: Tartu Fungal Culture Collection; **UTHSC**, Fungus Testing Laboratory at the University of Texas Health Science Center, San Antonio, Texas, USA.

<sup>2</sup>Strains studied by us are indicated in **bold**.

<sup>3</sup>ITS: internal transcribed spacer region 1 and 2 including 5.8S nrDNA; LSU: large subunit of the nrRNA gene; *rpb2*: RNA polymerase II second subunit; *tub2*:  $\beta$ -tubulin; *tef* 1: translation elongation factor.

<sup>T</sup>Ex-type strain.