

TABLE 1 Taxa used in this study and GenBank accession numbers.

Species	Strain number	LSU	ITS	<i>tef1-α</i>	<i>rpb2</i>	<i>tub2</i>
<i>Angustimassarina populi</i>	MFLUCC 13–0034	KP888642	KP899137	KR075164	NA	N/A
<i>Anteaglonium globosum</i>	ANM 925.2	GQ221879	N/A	GQ221925	N/A	N/A
<i>Anteaglonium parvulum</i>	MFLUCC 14–0821	KU922915	N/A	KU922921	N/A	N/A
<i>Aquastroma magniostiolatum</i>	CBS 139680	NG_056936	LC014540	AB808486	N/A	N/A
<i>Corynespora cassiicola</i>	CBS 100822	GU301808	N/A	GU349052	N/A	N/A
<i>Corynespora torulosa</i>	CPC 15989	NG_058866	NR_145181	N/A	N/A	N/A
<i>Decaisnella formosa</i>	BCC 25617	GQ925847	N/A	GU479850	N/A	N/A
<i>Decaisnella formosa</i>	BCC 25616	GQ925846	N/A	GU479851	N/A	N/A
<i>Exosporium stylobatum</i>	CBS 160.30	JQ044447	JQ044428	N/A	N/A	N/A
<i>Forliomyces uniseptata</i>	MFLUCC 15–0765	KU721762	KU721772	N/A	N/A	N/A
<i>Hermatomyces amphispurus</i>	CBS 146610	LR812664	LR812664	N/A	N/A	N/A
<i>Hermatomyces amphispurus</i>	CBS 146613	LR812662	LR812662	LR812657	LR812668	LR812673
<i>Hermatomyces amphispurus</i>	CBS 146614	LR812666	LR812666	LR812660	LR812671	LR812676
<i>Hermatomyces anomianthi</i>	MFLUCC 21–0202	OK655817	OL413437	OM117546	N/A	N/A
<i>Hermatomyces bauhiniae</i>	MFLUCC 16–0395	MK443378	MK443382	MK443384	MK443386	N/A
<i>Hermatomyces biconisporus</i>	KUMCC 17–0183	MH260296	MH275063	MH412771	MH412755	N/A
<i>Hermatomyces bifurcatus</i>	CCF 5899	LS398262	LS398262	LS398416	LS398343	LS398441
<i>Hermatomyces bifurcatus</i>	CCF 5900	LS398263	LS398263	LS398417	LS398344	LS398442
<i>Hermatomyces clematidis</i>	MFLUCC 17–2085	MT214556	MT310603	MT394735	MT394684	N/A
<i>Hermatomyces constrictus</i>	CCF 5904	LS398264	LS398264	LS398418	LS398345	LS398443
<i>Hermatomyces indicus</i>	MFLUCC 14–1143	KU764692	KU144920	KU872754	KU712488	N/A
<i>Hermatomyces indicus</i>	MFLUCC 14–1144	KU764693	KU144921	KU872755	KU712489	N/A
<i>Hermatomyces iriomotensis</i>	KH 361	LC194367	LC194483	LC194394	LC194449	N/A
<i>Hermatomyces jinghaensis</i>	HKAS 112167	MW989519	MW989495	MZ042642	N/A	N/A
<i>Hermatomyces krabiensis</i>	MFLUCC 16–0249	KX525742	KX525750	KX525758	KX525754	N/A
<i>Hermatomyces krabiensis</i>	MFLUCC 16–2817	KY559394	N/A	N/A	N/A	N/A
<b><i>Hermatomyces hainanensis</i></b>	<b>GZCC 23–0592</b>	<b>OR091329</b>	<b>OR098708</b>	N/A	N/A	N/A
<i>Hermatomyces megasporus</i>	CCF 5897	N/A	LS398265	LS398419	LS398346	LS398444
<i>Hermatomyces megasporus</i>	CCF 5898	LS398266	LS398266	LS398420	N/A	LS398445
<i>Hermatomyces nabanheensis</i>	KUMCC 16–0149	KY766059	KY766058	KY766061	N/A	N/A
<i>Hermatomyces pandanicola</i>	MFLUCC 16–0251	KX525743	KX525751	KX525759	KX525755	N/A
<i>Hermatomyces reticulatus</i>	CCF 5893	LS398267	LS398267	LS398421	LS398347	LS398446
<i>Hermatomyces reticulatus</i>	MFLUCC 15–0843	KX259523	KX259521	KX259527	KX259529	N/A
<i>Hermatomyces sphaericoides</i>	CCF 5908	LS398273	LS398273	LS398427	LS398352	LS398450
<i>Hermatomyces sphaericoides</i>	CCF 5895	LS398270	LS398270	LS398424	LS398350	LS398447
<i>Hermatomyces sphaericus</i>	PMA 116080	LS398281	LS398281	LS398431	LS398356	LS398454
<i>Hermatomyces sphaericus</i>	PMA 116081	N/A	LS398283	LS398432	LS398357	LS398455
<i>Hermatomyces sphaericus</i>	PRC 4105	N/A	LS398286	N/A	N/A	N/A
<i>Hermatomyces sphaericus</i>	PRC 4104	N/A	LS398278	LS398430	LS398355	LS398453
<i>Hermatomyces sphaericus</i>	KZP 462	N/A	LS398287	LS398434	LS398359	LS398457
<i>Hermatomyces sphaericus</i>	MFLUCC 16–2818	KY559393	N/A	N/A	N/A	N/A
<i>Hermatomyces sphaericus</i>	MFLUCC 16–0266	KX525740	KX525748	KX525756	KX525752	N/A
<i>Hermatomyces sphaericus</i>	MFLUCC 14–1140	KU764695	KU144917	KU872757	KU712486	N/A
<i>Hermatomyces trangensis</i>	BCC 80741	KY790600	KY790598	KY790606	KY790604	N/A

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TABLE 1 (Continued)

Species	Strain number	LSU	ITS	<i>tef1-α</i>	<i>rpb2</i>	<i>tub2</i>
<i>Hermatomyces trangensis</i>	BCC 80742	KY790601	KY790599	KY790607	KY790605	N/A
<i>Hermatomyces tucumanensis</i>	CCF 5912	LS398288	LS398288	LS398435	LS398360	LS398458
<i>Hermatomyces tucumanensis</i>	CCF 5915	LS398290	LS398290	LS398437	LS398362	N/A
<i>Hermatomyces turbinatus</i>	MFLUCC 21–0038	MW989518	MW989494	MZ042641	MZ042638	MZ042645
<i>Hermatomyces verrucosus</i>	CCF 5903	LS398292	LS398292	LS398439	LS398364	LS398462
<i>Hermatomyces verrucosus</i>	CCF 5892	LS398291	LS398291	LS398438	LS398363	LS398461
<i>Kirschsteiniethelia acutispora</i>	MFLU 21–0127	ON980758	OP120780	N/A	N/A	N/A
<i>Kirschsteiniethelia aethiops</i>	CBS 109.53	AY016361	N/A	N/A	N/A	N/A
<i>Kirschsteiniethelia aethiops</i>	MFLUCC 16–1104	MH182589	MH182583	N/A	N/A	N/A
<i>Kirschsteiniethelia aethiops</i>	S-783	MH182595	MH182586	N/A	N/A	N/A
<i>Kirschsteiniethelia aethiops</i>	MFLUCC 15–0424	KU500578	KU500571	N/A	N/A	N/A
<i>Kirschsteiniethelia aquatica</i>	MFLUCC 17–1685	MH182594	MH182587	N/A	N/A	N/A
<i>Kirschsteiniethelia arasbaranica</i>	IRAN 2509C	KX621987	KX621986	N/A	N/A	N/A
<i>Kirschsteiniethelia arasbaranica</i>	IRAN 2508C	KX621984	KX621983	N/A	N/A	N/A
<i>Kirschsteiniethelia cangshanensis</i>	MFLUCC 16–1350	MH182592	MH182584	N/A	N/A	N/A
<i>Kirschsteiniethelia crustacea</i>	MFLU 21–0129	MW851854	MW851849	N/A	N/A	N/A
<i>Kirschsteiniethelia dushanensis</i>	GZCC 19–0415	N/A	OP377845	N/A	N/A	N/A
<i>Kirschsteiniethelia extensa</i>	MFLU 21–0126	ON980757	OP120779	N/A	N/A	N/A
<i>Kirschsteiniethelia fluminicola</i>	MFLUCC 16–1,263	MH182588	MH182582	N/A	N/A	N/A
<i>Kirschsteiniethelia lignicola</i>	MFLUCC 10–0036	HQ441568	HQ441567	N/A	N/A	N/A
<i>Kirschsteiniethelia nabanheensis</i>	HJAUP C2004	OQ023273	OQ023197	N/A	N/A	N/A
<i>Kirschsteiniethelia nabanheensis</i>	HJAUP C2006	OQ023275	OQ023274	N/A	N/A	N/A
<i>Kirschsteiniethelia phoenicis</i>	MFLUCC 18–0216	MG860484	MG859978	N/A	N/A	N/A
<b><i>Kirschsteiniethelia ramus</i></b>	<b>GZCC 23–0596</b>	<b>OR091333</b>	<b>OR098711</b>	<b>OR494046</b>	<b>OR494049</b>	N/A
<i>Kirschsteiniethelia rostrata</i>	MFLUCC 15–0619	KY697276	KY697280	N/A	N/A	N/A
<i>Kirschsteiniethelia rostrata</i>	MFLUCC 16–1124	MH182590	N/A	N/A	N/A	N/A
<i>Kirschsteiniethelia septemseptata</i>	MFLU 21–0126	ON980757	OP120779	N/A	N/A	N/A
<i>Kirschsteiniethelia spatiosa</i>	MFLU 21–0128	N/A	OP077294	N/A	N/A	N/A
<i>Kirschsteiniethelia submersa</i>	MFLUCC 15–0427	KU500577	KU500570	N/A	N/A	N/A
<i>Kirschsteiniethelia submersa</i>	S-481	MH182591	N/A	N/A	N/A	N/A
<i>Kirschsteiniethelia submersa</i>	S-601	MH182593	MH182585	N/A	N/A	NA
<i>Kirschsteiniethelia tectonae</i>	MFLUCC 12–0050	KU764707	KU144916	N/A	N/A	N/A
<i>Kirschsteiniethelia thailandica</i>	MFLUCC 20–0116	MT984443	MT985633	N/A	N/A	N/A
<i>Kirschsteiniethelia thujina</i>	JF 13210	KM982718	KM982716	N/A	N/A	N/A
<i>Kirschsteiniethelia xishuangbannaensis</i>	ZHKUCC 22–0220	OP303181	OP289566	N/A	N/A	N/A
<i>Kirschsteiniethelia xishuangbannaensis</i>	ZHKUCC 22–0221	OP303182	OP289563	N/A	N/A	N/A
<i>Lignosphaeria fusispora</i>	MFLUCC 11–0377	KP888646	KP889140	N/A	N/A	N/A
<i>Lignosphaeria thailandica</i>	MFLUCC 11–0376	KP888645	KP889139	N/A	N/A	N/A
<i>Lonicericola fuyuanensis</i>	MFLU 19–2,850	NG_073809	NR_172419	MN938324	N/A	N/A
<i>Lonicericola hyaloseptispora</i>	KUMCC 18–0149	NG_066434	NR_164294	N/A	N/A	N/A
<i>Lonicericola qujingensis</i>	GMB 1386	NG_154015	NR_182717	OM857556	N/A	N/A
<i>Multilocularia bambusae</i>	MFLUCC 11–0180	NG_059654	NR_148099	KU705656	N/A	N/A
<i>Multiseptospora thailandica</i>	MFLUCC 11–0183	NG_059554	NR_148080	KU705657	N/A	N/A
<i>Multiseptospora thysanolaenae</i>	MFLUCC 11–0202	NG_059655	NA	KU705658	N/A	N/A

(Continued)

TABLE 1 (Continued)

Species	Strain number	LSU	ITS	<i>tef1-α</i>	<i>rpb2</i>	<i>tub2</i>
<i>Neoaquastroma bauhiniiae</i>	MFLUCC 16–0398	NG_067814	NR_165217	MH028247	N/A	N/A
<i>Neoaquastroma guttulatum</i>	MFLUCC 14–0917	KX949740	KX949739	KX949742	N/A	N/A
<i>Parabambusicola aquatica</i>	MFLUCC 18–1140	NG_073791	NR_171877	N/A	N/A	N/A
<i>Parabambusicola bambusina</i>	MAFF 239462	AB807536	LC014578	AB808511	N/A	N/A
<i>Parabambusicola thysanolaenae</i>	KUMCC 18–0147	NG_066435	NR_164044	MK098209	N/A	N/A
<i>Paradictyoarthrinium diffractum</i>	MFLUCC 12–0557	KP744497	KP744454	N/A	N/A	N/A
<i>Paradictyoarthrinium tectonicola</i>	MFLUCC 12–0556	KP744499	KP744456	N/A	N/A	N/A
<i>Paramonodictys dispersa</i>	KUNCC 10788	OQ146988	ON261165	OQ943185	N/A	N/A
<i>Paramonodictys dispersa</i>	KUNCC 10782	OQ146982	ON261159	OQ943183	N/A	N/A
<i>Paramonodictys dispersa</i>	KUNCC 10783	OQ146983	ON261160	OQ943184	N/A	N/A
<b><i>Paramonodictys globosa</i></b>	<b>GZCC 23–0594</b>	<b>OR091331</b>	N/A	<b>OR494045</b>	<b>OR494048</b>	N/A
<i>Paramonodictys hongheensis</i>	KUMCC 21–0343	NG_081549	ON350762	OL505582	N/A	N/A
<i>Paramonodictys hongheensis</i>	KUMCC 21–0346	OL436224	OL436235	OL505583	N/A	N/A
<i>Paramonodictys solitarius</i>	GZCC 20–0007	MN897835	MN901152	MT023012	N/A	N/A
<i>Paramonodictys yunnanensis</i>	KUMCC 21–0337	OL436226	OL436231	OL505585	N/A	N/A
<i>Paramonodictys yunnanensis</i>	KUMCC 21–0347	OL436228	OL436233	OL505586	N/A	N/A
<i>Paratrimmatostroma kunmingense</i>	KUN HKAS 102224	MK098196	MK098192	MK098208	N/A	N/A
<i>Phaeoseptum aquaticum</i>	CBS 123113	JN644072	N/A	N/A	N/A	N/A
<i>Phaeoseptum terricola</i>	MFLUCC 10–0102	MH105779	N/A	MH105781	N/A	N/A
<i>Phyllobathelium anomalum</i>	MPN 242	GU327722	N/A	N/A	N/A	N/A
<i>Phyllobathelium firmum</i>	ERP 3175	GU327723	N/A	N/A	N/A	N/A
<i>Pleopunctum bauhiniiae</i>	MFLUCC 17–2091	NG_073849	NR_170810	MT394632	N/A	N/A
<i>Pleopunctum ellipsoideum</i>	MFLU 19–0685	MK804517	MK804512	MK828510	N/A	N/A
<b><i>Pleopunctum guizhouense</i></b>	<b>GZCC 23–0595</b>	<b>OR091332</b>	<b>OR098710</b>	N/A	N/A	N/A
<i>Pleopunctum heveae</i>	MFLUCC 21–0146a	OL782070	OL780491	N/A	N/A	N/A
<i>Pleopunctum heveae</i>	MFLUCC 21–0146b	OL782071	OL780492	N/A	N/A	N/A
<i>Pleopunctum megalosporum</i>	KUNCC 10785	OQ146985	ON261162	OQ943186	N/A	N/A
<i>Pleopunctum megalosporum</i>	KUNCC 10442	OQ146986	OQ135180	OQ943187	N/A	N/A
<i>Pleopunctum menglaense</i>	KUMCC 21–0025	ON009102	ON009118	ON009261	N/A	N/A
<i>Pleopunctum menglaense</i>	KUMCC 21–0026	ON009103	ON009119	ON009262	N/A	N/A
<i>Pleopunctum multicellularum</i>	KUNCC 10789	OQ146989	ON261166	OQ943190	N/A	N/A
<i>Pleopunctum multicellularum</i>	KUNCC 10781	OQ146981	ON261158	OQ943189	N/A	N/A
<i>Pleopunctum multicellularum</i>	KUNCC 10778	OQ146978	ON261155	N/A	N/A	N/A
<i>Pleopunctum pseudoellipsoideum</i>	MFLU 19–0686	MK804518	MK804513	MK828511	N/A	N/A
<i>Pleopunctum pseudoellipsoideum</i>	KUMCC 21–0820	ON009100	ON009116	ON009259	N/A	N/A
<i>Pleopunctum pseudoellipsoideum</i>	HKAS122915	ON009101	ON009117	ON009260	N/A	N/A
<i>Pleopunctum rotundatum</i>	KUNCC 10787	OQ146987	ON261164	OQ943194	N/A	N/A
<i>Pleopunctum rotundatum</i>	KUNCC 10780	OQ146980	ON261157	OQ943193	N/A	N/A
<i>Pleopunctum thailandicum</i>	MFLUCC 21–0039	MZ198896	MZ198894	MZ172461	N/A	N/A
<i>Preussia flanaganii</i>	CBS 112.73	NG_064098	NR_077168	N/A	N/A	N/A
<i>Preussia funiculata</i>	CBS 659.74	GU301864	N/A	N/A	N/A	N/A
<i>Preussia lignicola</i>	CBS 363.69	DQ384098	GQ203783	N/A	N/A	N/A
<i>Preussia lignicola</i>	CBS 264.69	GU301872	N/A	N/A	N/A	N/A
<i>Preussia minima</i>	CBS 524.50	MH868263	MH856741	N/A	N/A	N/A

(Continued)



TABLE 1 (Continued)

Species	Strain number	LSU	ITS	<i>tef1-α</i>	<i>rpb2</i>	<i>tub2</i>
<i>Preussia</i> sp.	ELV3.11	KF269205	JN418774	N/A	N/A	N/A
<i>Preussia</i> sp.	ELV3.2	KF269206	JN418773	N/A	N/A	N/A
<i>Pseudomonodictys aquatica</i>	MFLUCC 22–0018	ON553406	ON561291	ON556673	N/A	N/A
<i>Pseudomonodictys tectonae</i>	MFLUCC 12–0552	NG_059590	N/A	KT285571	N/A	N/A
<i>Sparticola forlicesenae</i>	MFLUCC 14–1097	KU721763	KU721773	N/A	N/A	N/A
<i>Sparticola forlicesenae</i>	MFLUCC 14–0952	KU721764	KU721774	N/A	N/A	N/A
<i>Sparticola junci</i>	MFLUCC 15–0030	KU721765	KU721775	N/A	N/A	N/A
<i>Sparticola junci</i>	MFLUCC 13–0926	KU721766	KU721776	N/A	N/A	N/A
<i>Sparticola muriformis</i>	MFLUCC 17–0316	KY768862	KY768864	N/A	N/A	N/A
<i>Sparticola triseptata</i>	CBS 614.86	EF165031	N/A	N/A	N/A	N/A
<i>Sporormia fimetaria</i>	UPS:Lundqvist 2302c	GQ203728	GQ203768	N/A	N/A	N/A
<i>Sporormia fimetaria</i>	UPS:dissing Gr.81.194	GQ203729	GQ203769	N/A	N/A	N/A
<b><i>Sparticola irregularis</i></b>	<b>GZCC 23–0593</b>	<b>OR091330</b>	<b>OR098709</b>	<b>OR494044</b>	<b>OR494047</b>	N/A
<i>Sporormurispora atraphaxidis</i>	MFLUCC 17–0742	MG829083	MG828971	N/A	N/A	N/A
<i>Sporormurispora pruni</i>	MFLUCC 17–0803	MG829084	MG828972	N/A	N/A	N/A
<i>Thyridaria macrostomoides</i>	GKM1033	GU385190	N/A	GU327776	N/A	N/A
<i>Thyridaria macrostomoides</i>	GKM1159	GU385185	N/A	GU327778	N/A	N/A
<i>Thyridaria macrostomoides</i>	GKM224N	GU385191	N/A	GU327777	N/A	N/A
<i>Trichophoma cylindrospora</i>	CBS 146340	LR732024	LR732023	N/A	N/A	N/A
<i>Westerdykella angulata</i>	CBS 610.74	NG_057754	NR_155956	N/A	N/A	N/A
<i>Westerdykella dispersa</i>	CBS 297.56	NG_057827	NR_111187	N/A	N/A	N/A
<i>Westerdykella ornata</i>	CBS 379.55	MH869059	MH857522	N/A	N/A	N/A
<i>Xenomonodictys iranica</i>	CBS 147181	MW175406	MW175368	N/A	N/A	N/A

Newly generated sequences are indicated in bold. \*N/A, data not available in GenBank.

Maximum likelihood (ML) analyses were performed using IQ-TREE web server (Trifinopoulos et al., 2016). Substitution model was automatically tested. Ultrafast bootstrap (BS) analysis was implemented with 1,000 replicates. Maximum likelihood bootstrap values (ML-BS) equal or greater than 75% are marked near each node.

Bayesian inference (BI) analyses were carried out in MrBayes 3.2.6 (Ronquist et al., 2012) using a Markov Chain Monte Carlo (MCMC) algorithm. The best-fit substitution model GRT + I + G was decided for all four gene regions by MrModeltest 2.3 (Nylander, 2008) under the Akaike Information Criterion (AIC). Two parallel runs of four simultaneous Markov chains were performed for 1,000,000 generations. Trees were sampled every 1,000th generations. Burn-in phase was set at 25% and the remaining trees were used for calculating posterior probabilities (PP). PP values equal or greater than 0.95 are marked near each node.

Trees were visualized with FigTree v1.4.4,<sup>3</sup> and the layouts were edited using Adobe Illustrator CS6 software (Adobe Systems, USA).

### 3 Taxonomy

*Hermatomyces hainanensis* J. Ma, Y.Z. Zhang & Y.Z. Lu, sp. nov., Figure 1.

Fungal Names number: FN571666.

Holotype: HKAS 129170.

Etymology: Referring to the location where the species was collected.

*Saprobic* on decaying wood in freshwater habitat. Sexual morph: Undetermined. Asexual morph: hyphomycetous. Colonies on natural substrate sporodochial, effuse, scattered, circular or subcircular, consisting of a brown sterile mycelial outer zone and an abundantly sporulating, dark brown to blackish brown center. Mycelium partly immersed, partly superficial, composed of pale to brown, branched, septate hyphae. Conidiophores 15–19 × 2–5 μm ( $\bar{x}$  = 48 × 32 μm,  $n$  = 15), micronematous to semi-macronematous, unevenly cylindrical, geniculate, subhyaline to brown, septate, thick-walled. Conidiogenous cells 4.5–8 × 2.5–3 μm ( $\bar{x}$  = 6.5 × 2.5 μm,  $n$  = 15), monoblastic, integrated, terminal, subcylindrical, subhyaline to pale brown. Conidia dimorphic, (1) cylindrical conidia 51–67 × 16–24 μm ( $\bar{x}$  = 58.5 × 21 μm,  $n$  = 30), hyaline to subhyaline, often with a distinct dark brown pigmentation from the top downwards or at rim of the conidia, straight or broadly curved, phragmoseptate or muriform, sometimes with oblique septa, constricted at the septa, consisting of two columns from one or two basal cells, rounded at the apex; (2) lenticular conidia 44–52 × 29–39 μm ( $\bar{x}$  = 48 × 32 μm,  $n$  = 30), ellipsoidal in front view, central cells dark brown to blackish brown, peripheral cells subhyaline to pale olivaceous brown, forming a distinct ring, muriform, constricted at the septa, smooth-walled, side views not observed.

<sup>3</sup> <http://tree.bio.ed.ac.uk/software/figtree>