

Supplementary Table S3 Voucher information and GenBank accession numbers of the samples used in the phylogenetic analyses of *Tricholoma* (Datasets III and IV). New Species described in this study are indicated in bold.

Taxon	Voucher	Locality	GenBank Acc. No.					Reference
			ITS	EF1- α	RPB2	MCMC7	mtSSU	
<i>T. acerbum</i>	MB-002943	Germany	MF034293	–	–	–	–	Reschke et al. 2018
<i>T. acerbum</i>	MC00-204	Slovenia	LT000134	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. aff. acerbum</i>	CMMF003497	Quebec, Canada	MW627899	–	–	–	–	Landry et al. 2022
<i>T. aff. acerbum</i>	CMMF024669	Quebec, Canada	MW628087	–	–	–	–	Landry et al. 2022
<i>T. aestuans</i>	C-F-59265	Denmark	LT000007	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. aestuans</i>	MC97-072 (Neotype)	Sweden	LT000153	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. aestuans</i>	QFB30952	Quebec, Canada	MW627954	–	–	–	–	Landry et al. 2022
<i>T. albobrunneum</i>	HMAS42679	Japan	PQ963049	PV002651	PV002590	–	PQ998411	this study
<i>T. albobrunneum</i>	HMAS79274	Qinghai, China	PQ963050	–	–	–	–	this study
<i>T. albobrunneum</i>	KUN-HKAS 138821	Yunnan, China	PQ963051	PV002652	PV002591	–	PQ998412	this study
<i>T. albobrunneum</i>	KUN-HKAS 68189	Yunnan, China	MW724479	MW730063	MW729914	MW730185	MW732385	Ding et al. 2023
<i>T. albobrunneum</i>	KUN-HKAS 69909	Yunnan, China	PQ963052	PV002653	–	PV002569	PQ998413	this study
<i>T. albobrunneum</i>	KUN-HKAS 71269	Yunnan, China	MW724336	MW729930	MW729803	MW730078	MW732266	Ding et al. 2023
<i>T. albobrunneum</i>	MC99-060	France	LT000077	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. albobrunneum</i>	QFB32594	Quebec, Canada	MW628036	–	–	–	–	Landry et al. 2022
<i>T. albobrunneum</i>	KUN-HKAS 57016	Yunnan, China	MW724391	–	–	–	–	Ding et al. 2023
<i>T. aff. albobrunneum</i>	CMMF024667	Quebec, Canada	MW628092	–	–	–	–	Landry et al. 2022
<i>T. aff. albobrunneum</i>	QFB32636	Quebec, Canada	MW627973	–	–	–	–	Landry et al. 2022
<i>T. album</i>	MB-006323	Germany	MW724421	MW730014	–	MW730151	–	Ding et al. 2023
<i>T. album</i>	MB-006366	Germany	MW724416	MW730009	–	MW730146	–	Ding et al. 2023
<i>T. album</i>	MC95-159	Denmark	LT000008					Heilmann-Clausen et al. 2017
<i>T. alpinum</i>	220909-4	Japan	LC636226	–	–	–	–	Aoki et al., 2022
<i>T. alpinum</i>	220930-2 (Holotype)	Japan	LC636230	–	–	–	–	Aoki et al., 2022
<i>T. alpinum</i>	TUA-89	Japan	LC636227	–	–	–	–	Aoki et al., 2022
<i>T. ammophilum</i>	CMMF002723	Quebec, Canada	MW628043	–	–	–	–	Landry et al. 2022
<i>T. ammophilum</i>	HMAS61639	Gansu, China	PQ963053	–	–	–	–	this study
<i>T. ammophilum</i>	WTU-F-073083 (Holotype)	USA	MW597140	–	–	–	–	Trudell & Parker 2021
<i>T. anatolicum</i>	S-3-2	Turkey	AB699644	–	–	–	–	Ota et al. 2012
<i>T. anatolicum</i>	TM-5	Morocco	AB699646	–	–	–	–	Ota et al. 2012
<i>T. apium</i>	C-F-41884	Denmark	LT000009	–	–	–	–	Sánchez-García et al. 2014
<i>T. apium</i>	JHC95049	Sweden	LT000154	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. apium</i>	QFB32626	Quebec, Canada	MW627893	–	–	–	–	Landry et al. 2022

<i>T. apium</i>	WTU-F-073049/SAT-16-319-05	OR, USA	MW597268	–	–	–	–	Trudell et al. 2022
<i>T. argenteum</i>	TRTC155217	Quebec, Canada	OP221714	–	–	–	–	Landry et al. 2022
<i>T. argyraceum</i>	CMMF006041	Quebec, Canada	MW627961	–	–	–	–	Landry et al. 2022
<i>T. argyraceum</i>	HMAS37341	Heilongjiang, China	PQ963054	PV002654	PV002592	–	PQ998414	this study
<i>T. argyraceum</i>	HMAS57883	Beijing, China	PQ963055	PV002655	PV002593	–	PQ998415	this study
<i>T. argyraceum</i>	KUN-HKAS 106294	Sichuan, China	PQ963056	–	–	–	–	this study
<i>T. argyraceum</i>	KUN-HKAS 106661	Sichuan, China	MW724415	MW730008	MW729875	MW730145	MW732336	Ding et al. 2023
<i>T. argyraceum</i>	KUN-HKAS 138830	Sichuan, China	PQ963057	PV002656	PV002594	–	PQ998416	this study
<i>T. argyraceum</i>	MB-003509	Germany	MW724417	MW730010	MW729876	MW730147	MW732337	Ding et al. 2023
<i>T. argyraceum</i>	MB-003519	Germany	MW724418	MW730011	MW729877	MW730148	MW732338	Ding et al. 2023
<i>T. argyraceum</i>	MEN9491 (Epitype)	Netherlands	LT000198	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. argyraceum</i>	WTU-F-073051/SAT-17-040-02	CA, USA	MW597270	–	–	–	–	Trudell et al. 2022
<i>T. arvernense</i>	CMMF024674	Quebec, Canada	ON256899	–	–	–	–	Landry et al. 2022
<i>T. arvernense</i>	MC98020	Norway	LT000119	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. arvernense</i>	MC98120	France	LT000078	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. arvernense</i>	WTU F-073004/SAT-12-247-03	AK, USA	MW597188	–	–	–	–	Trudell et al. 2022
<i>T. asiaticum</i>	KUN-HKAS 52260	Yunnan, China	MW724377	MW729972	MW729841	MW730111	MW732304	Ding et al. 2023
<i>T. asiaticum</i>	KUN-HKAS 71694	Yunnan, China	PQ963058	PV002658	PV002595	PV002570	PQ998417	this study
<i>T. asiaticum</i>	KUN-HKAS 81826	Yunnan, China	–	PV002657	PV002596	PV002571	PQ998418	this study
<i>T. asiaticum</i>	KUN-HKAS 92443 (Holotype)	Yunnan, China	MW724376	MW729971	MW729840	MW730110	MW732303	Ding et al. 2023
<i>T. atratum</i>	NYBG-REH8263 (Holotype)	Costa Rica	MH704866	–	–	–	–	Ovrebo et al. 2019
<i>T. atratum</i>	REH8008	Costa Rica	MH704864	–	–	–	–	Ovrebo et al. 2019
<i>T. atrodiscum</i>	CMMF004050	Quebec, Canada	MW627901	–	–	–	–	Landry et al. 2022
<i>T. atrodiscum</i>	TRTC155021	Quebec, Canada	OP221715	–	–	–	–	Landry et al. 2022
<i>T. atrofibrillosum</i>	WTU-F-073048/SAT-16-244-15 (Holotype)	AK, USA	MW597267	–	–	–	–	Trudell et al. 2022
<i>T. atosquamosum</i>	CMMF005376	Quebec, Canada	MW628134	–	–	–	–	Landry et al. 2022
<i>T. atosquamosum</i>	DBG:27983	USA	MF034279	–	–	–	–	Reschke et al. 2018
<i>T. atosquamosum</i>	KUN-HKAS 106310	Yunnan, China	MW724462	MW730050	–	–	MW732372	Ding et al. 2023
<i>T. atosquamosum</i>	KUN-HKAS 97211	Sichuan, China	MW724388	MW729983	MW729852	MW730122	MW732314	Ding et al. 2023
<i>T. atosquamosum</i>	KUN-HKAS 97910	Sichuan, China	MW724382	MW729977	MW729846	MW730116	MW732309	Ding et al. 2023
<i>T. atosquamosum</i>	O_F_159872	Norway	LT222019	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. atroviolaceum</i>	C44 EC253	USA	AY750166	–	–	–	–	Cline et al. 2005
<i>T. atroviolaceum</i>	WTU-F-073061/ADP 121018-1	WA, USA	MW597280	–	–	–	–	Trudell et al. 2022
<i>T. aff. atroviolaceum</i>	AF 0001640	Xizang, China	MW724455	–	–	–	–	Ding et al. 2023
<i>T. atrovirens</i>	HMGAU22354	Belarus	PQ963059	–	–	–	–	this study
<i>T. atrovirens</i>	KUN-HKAS 106668	Sichuan, China	MW724412	–	–	–	–	Ding et al. 2023

<i>T. atrovirens</i>	KUN-HKAS 79747	Yunnan, China	MW724335	MW729929	MW729802	MW730077	MW732265	Ding et al. 2023
<i>T. atrovirens</i>	KUN-HKAS 97949	Sichuan, China	MW724389	MW729984	MW729853	MW730123	MW732315	Ding et al. 2023
<i>T. aurantiipes</i>	MB-003000	Yunnan, China	MF034227	–	–	–	–	Reschke et al. 2018
<i>T. aurantio-olivaceum</i>	MICH-12313/AHS-17666 (Holotype)	WA, USA	MN809569	–	–	–	–	Trudell et al. 2022
<i>T. aurantio-olivaceum</i>	WTU-F-073038/ADP 141028-1	WA, USA	MW597257	–	–	–	–	Trudell et al. 2022
<i>T. aurantio-olivaceum</i>	WTU-F-073063/ADP 161109-2	WA, USA	MW597282	–	–	–	–	Trudell et al. 2022
<i>T. aurantiophyllum</i>	HAKS107581	Yunnan, China	MW724400	MW729995	MW729864	MW730133	MW732324	Ding et al. 2023
<i>T. aurantiophyllum</i>	KUN-HKAS 74948	Yunnan, China	MW724348	MW729942	MW729815	MW730089	MW732277	Ding et al. 2023
<i>T. aurantium</i>	KUN-HKAS 106284	Yunnan, China	PQ963060	–	–	–	–	this study
<i>T. aurantium</i>	KUN-HKAS 106523	Xinjiang, China	MW724395	MW729990	MW729859	MW730128	MW732320	Ding et al. 2023
<i>T. aurantium</i>	KUN-HKAS 106548	Xinjiang, China	MW724414	MW730007	–	MW730144	MW732335	Ding et al. 2023
<i>T. aurantium</i>	KUN-HKAS 94389	Ontario, Canada	MW724367	MW729962	MW729833	–	–	Ding et al. 2023
<i>T. aurantium</i>	KUN-HKAS 94390	Ontario, Canada	PQ963061	PV002659	PV002597	PV002572	PQ998419	this study
<i>T. aurantium</i>	MB-102121	Germany	MF034300	–	–	–	–	Reschke et al. 2018
<i>T. aurantium</i>	MC97-227	Denmark	LT000012	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. aurantium</i>	QFB32640	Quebec, Canada	MW628069	–	–	–	–	Landry et al. 2022
<i>T. aurantium</i>	WTU-F-073021/ADP 100619-1	WA, USA	MW597204	–	–	–	–	Trudell et al. 2022
<i>T. auratum</i>	ISK1	Japan	AB289662	–	–	–	–	Kikuchi et al., 2007
<i>T. auratum</i>	Tk1	Japan	AB289663	–	–	–	–	Kikuchi et al., 2007
<i>T. austrocolossus</i>	PERTH:8473536	Australia	MT537035	–	–	–	–	Direct submission
<i>T. badicephalum</i>	CMMF024676	Quebec, Canada	MW627907	–	–	–	–	Landry et al. 2022
<i>T. badicephalum</i>	QFB31071	Quebec, Canada	MW628054	–	–	–	–	Landry et al. 2022
<i>T. badicephalum</i>	WTU-F-073095 (Epitype)	USA	MW597309	–	–	–	–	Trudell & Parker 2021
<i>T. badicephalum</i>	UBC-17553/PK3153	BC, USA	MW597209	–	–	–	–	Trudell et al. 2022
<i>T. badicephalum</i>	WTU-F-073045/SAT-16-238-15	AK, USA	MW597264	–	–	–	–	Trudell et al. 2022
<i>T. bakamatsutake</i>	HMAS70231	Gansu, China	PQ963062	–	–	–	–	this study
<i>T. bakamatsutake</i>	KUN-HKAS 106301	Yunnan, China	MW724449	–	–	MW730164	–	Ding et al. 2023
<i>T. bakamatsutake</i>	KUN-HKAS 106313	Yunnan, China	MW724402	MW729997	MW729866	MW730135	MW732326	Ding et al. 2023
<i>T. bakamatsutake</i>	KUN-HKAS 107570	Yunnan, China	MW724468	MW730054	MW729906	MW730178	MW732376	Ding et al. 2023
<i>T. bakamatsutake</i>	KUN-HKAS 107573	Yunnan, China	PQ963063	–	–	–	–	this study
<i>T. bakamatsutake</i>	KUN-HKAS 134985	Yunnan, China	PQ963064	–	–	–	–	this study
<i>T. bakamatsutake</i>	NF3020	Japan	LC458760	–	–	–	–	Direct submission
<i>T. basirubens</i>	MC01-209	Croatia	LT000001	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. basirubens</i>	TL5303	Sweden	LT000158	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. batschii</i>	MB-003027	Germany	MF034298	–	–	–	–	Reschke et al. 2018
<i>T. bonii</i>	HMJAU35946	Heilongjiang, China	MW724393	–	–	–	–	Ding et al. 2023

<i>T. bonii</i>	KUN-HKAS 106563	Yunnan, China	MW724399	MW729994	MW729863	MW730132	MW732323	Ding et al. 2023
<i>T. bonii</i>	KUN-HKAS 78979	Yunnan, China	MW724326	MW729920	–	MW730069	MW732256	Ding et al. 2023
<i>T. bonii</i>	KUN-HKAS 82876	Yunnan, China	PQ963065	–	–	–	–	this study
<i>T. bonii</i>	LUG-F8450 (Holotype)	Italy	LT000101	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. aff. bonii</i>	QFB28707	Quebec, Canada	MN992540	–	–	–	–	Landry et al. 2022
<i>T. boreosulphurescens</i>	ANT112-HRL2116	Quebec, Canada	MN992535	–	–	–	–	Landry et al. 2022
<i>T. boreosulphurescens</i>	IK971187	Finland	LT000199	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. boreosulphurescens</i>	SAE9507	Sweden	LT000159	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. borgsjoeense</i>	CMMF002309	Quebec, Canada	MW627992	–	–	–	–	Landry et al. 2022
<i>T. borgsjoeense</i>	JHC95067	Sweden	LT000160	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. borgsjoeense</i>	JV95307	Sweden	LT000161	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. borgsjoeense</i>	QFB32646	Quebec, Canada	MW627912	–	–	–	–	Landry et al. 2022
<i>T. boudieri</i>	CMMF024687	Quebec, Canada	MW628110	–	–	–	–	Landry et al. 2022
<i>T. boudieri</i>	KUN-HKAS 104331	North Macedonia	–	PV002660	PV002598	PV002573	PQ998420	this study
<i>T. boudieri</i>	KUN-HKAS 138819	China	–	PV002661	PV002599	PV002574	PQ998421	this study
<i>T. boudieri</i>	KUN-HKAS 74089	Yunnan, China	MW724322	MW729917	MW729791	MW730065	MW732252	Ding et al. 2023
<i>T. boudieri</i>	KUN-HKAS 97185	Sichuan, China	PQ963066	–	–	–	–	this study
<i>T. boudieri</i>	KUN-HKAS 99439	Sichuan, China	–	–	–	–	PQ998422	this study
<i>T. boudieri</i>	KUN-HKAS 99445	Sichuan, China	PQ963160	–	–	–	PQ998423	this study
<i>T. boudieri</i>	MC01-600 (Epitype)	Slovenia	LT000136	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. bresadolanium</i>	CL94-166	Sweden	LT000162	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. bresadolanium</i>	MC96-264	Italy	LT000103	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. brunneiceps</i>	KUN-HKAS 108098	Yunnan, China	MW724475	–	–	–	–	Ding et al. 2023
<i>T. brunneiceps</i>	KUN-HKAS 134966 (Holotype)	Yunnan, China	PQ963067	PV002662	PV002600	–	PQ998424	this study
<i>T. brunneiceps</i>	KUN-HKAS 134968	Yunnan, China	PQ963068	–	PV002601	–	–	this study
<i>T. brunneiceps</i>	KUN-HKAS 134969	Yunnan, China	PQ963069	PV002663	PV002602	–	PQ998425	this study
<i>T. brunneiceps</i>	KUN-HKAS 134973	Yunnan, China	–	PV002664	PV002603	–	PQ998426	this study
<i>T. brunneiceps</i>	KUN-HKAS 138818	Yunnan, China	PQ963070	PV002665	–	–	–	this study
<i>T. brunneiceps</i>	KUN-HKAS 138820	Yunnan, China	PQ963071	–	–	–	–	this study
<i>T. brunneiceps</i>	KUN-HKAS 140760	Yunnan, China	PQ963072	–	–	–	–	this study
<i>T. brunneiceps</i>	KUN-HKAS 73277	Yunnan, China	MW724340	MW729935	–	MW730082	MW732270	Ding et al. 2023
<i>T. brunneiceps</i>	KUN-HKAS 74195	Yunnan, China	MW724330	MW729924	MW729797	MW730073	MW732260	Ding et al. 2023
<i>T. brunneoluteum</i>	QFB32628	Quebec, Canada	MW628070	–	–	–	–	Landry et al. 2022
<i>T. bryogenum</i>	MC97-101	Sweden	AY462034	–	–	–	–	Comandini et al. 2004
<i>T. bryogenum</i>	O-F52108	Norway	LT222026	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. aff. bryogenum</i>	WTU-F-049202/SAT-00-324-03	WA, USA	MW597238	–	–	–	–	Trudell et al. 2022

<i>T. aff. bryogenum</i>	WTU-F-073001/SAT-13-272-06	AK, USA	MW597185	—	—	—	—	Trudell et al. 2022
<i>T. caligatum</i>	—	Mexico	AF309519	—	—	—	—	Chapela & Garbelotto 2004
<i>T. caligatum</i>	—	Mexico	AF309518	—	—	—	—	Chapela & Garbelotto 2004
<i>T. caligatum</i>	PH99519	France	LT000079	—	—	—	—	Heilmann-Clausen et al. 2017
<i>T. caligatum</i>	SCM:B-4194	Spain	AB699666	—	—	—	—	Ota et al. 2012
<i>T. aff. caligatum</i> -1	CMMF003508	Quebec, Canada	MW628088	—	—	—	—	Landry et al. 2022
<i>T. aff. caligatum</i> -1	QFB32948	Quebec, Canada	MW628084	—	—	—	—	Landry et al. 2022
<i>T. aff. caligatum</i> -2	CMMF003007	Quebec, Canada	MW628051	—	—	—	—	Landry et al. 2022
<i>T. castaneiceps</i>	KUN-HKAS 101281 (Holotype)	Yunnan, China	MW724443	—	—	—	MW732358	Ding et al. 2023
<i>T. castaneiceps</i>	KUN-HKAS 138822	Yunnan, China	—	PV002666	PV002604	PV002575	PQ998427	this study
<i>T. cedretorum</i>	MC99049	France	LT000074	—	—	—	—	Heilmann-Clausen et al. 2017
<i>T. cf. acre</i>	CMMF003100	Quebec, Canada	MW628093	—	—	—	—	Landry et al. 2022
<i>T. cf. acre</i>	QFB32631	Quebec, Canada	MW627955	—	—	—	—	Landry et al. 2022
‘ <i>T. caligatum</i> ’	—	Costa Rica	AF309520	—	—	—	—	Chapela & Garbelotto 2004
‘ <i>T. caligatum</i> ’	—	USA	AF309522	—	—	—	—	Chapela & Garbelotto 2004
<i>T. cingulatum</i>	CMMF009322	Quebec, Canada	MW627938	—	—	—	—	Landry et al. 2022
<i>T. cingulatum</i>	KUN-HKAS 106634	Sichuan, China	MW724406	MW730000	MW729868	MW730137	MW732328	Ding et al. 2023
<i>T. cingulatum</i>	KUN-HKAS 106635	Sichuan, China	MW724407	MW730001	MW729869	MW730138	MW732329	Ding et al. 2023
<i>T. cingulatum</i>	MB-003515	Germany	MW724425	MW730017	MW729880	—	MW732342	Ding et al. 2023
<i>T. cingulatum</i>	MC96-134 (Neotype)	Denmark	LT000015	—	—	—	—	Heilmann-Clausen et al. 2017
<i>T. citrinum</i>	KUN-HKAS 39071	Yunnan, China	PQ963073	—	PV002606	—	PQ998428	this study
<i>T. citrinum</i>	KUN-HKAS 39072	Yunnan, China	—	PV002667	PV002605	—	PQ998429	this study
<i>T. citrinum</i>	KUN-HKAS 71086 (Holotype)	Yunnan, China	MW724356	MW729950	—	MW730097	MW732286	Ding et al. 2023
<i>T. citrinum</i>	MB-305716	Yunnan, China	MF034262	—	—	—	—	Reschke et al. 2018
<i>T. colossum</i>	MB-002363	Germany	MF034285	—	—	—	—	Reschke et al. 2018
<i>T. colossum</i>	MC01205	Slovenia	LT000137	—	—	—	—	Heilmann-Clausen et al. 2017
<i>T. colossum</i>	MC97-047	Sweden	LT000164	—	—	—	—	Heilmann-Clausen et al. 2017
<i>T. colposii</i>	MEXU 30413 (Holotype)	Mexico	OM732326	—	—	—	—	Ayala-Vásquez et al. 2022
<i>T. colposii</i>	MEXU 30414	Mexico	OM732327	—	—	—	—	Ayala-Vásquez et al. 2022
<i>T. columbetta</i>	CMMF000833	Quebec, Canada	MW627940	—	—	—	—	Landry et al. 2022
<i>T. columbetta</i>	MC95-181 (Neotype)	Denmark	LT000017	—	—	—	—	Heilmann-Clausen et al. 2017
<i>T. costaricense</i>	NYBG-REH7997 (Holotype)	Costa Rica	MH704863	—	—	—	—	Ovrebo et al. 2019
<i>T. costaricense</i>	NYBG-REH8418	Costa Rica	MH704867	—	—	—	—	Ovrebo et al. 2019
<i>T. cheilocystidiatum</i>	KUN-HKAS 101291	Yunnan, China	MW724445	MW730036	MW729893	MW730161	—	Ding et al. 2023
<i>T. cheilocystidiatum</i>	KUN-HKAS 138826	Yunnan, China	PQ963074	—	—	—	—	this study
<i>T. cheilocystidiatum</i>	KUN-HKAS 140337	Yunnan, China	PQ963075	—	—	—	—	this study

<i>T. cheilocystidiatum</i>	KUN-HKAS 140762	Yunnan, China	PQ963159	–	–	–	–	this study
<i>T. cheilocystidiatum</i>	KUN-HKAS 97051 (Holotype)	Yunnan, China	MW724366	MW729961	MW729832	MW730105	–	Ding et al. 2023
<i>T. cheilocystidiatum</i>	KUN-HKAS 97661	Yunnan, China	MW724398	MW729993	MW729862	MW730131	–	Ding et al. 2023
<i>T. davisiae</i>	CMMF024679	Quebec, Canada	MW627920	–	–	–	–	Landry et al. 2022
<i>T. davisiae</i>	WTU-F-073016/ADP 040923-1	ID, USA	MW597200	–	–	–	–	Trudell et al. 2022
<i>T. dryophilum</i>	SFSU/KMS360	CA, USA	MW597218	–	–	–	–	Trudell et al. 2022
<i>T. dryophilum</i>	WTU-F-073055/SAT-17-041-02 (Epitype)	CA, USA	MW597274	–	–	–	–	Trudell et al. 2022
<i>T. dulciolens</i>	H:7002022 (Holotype)	Sweden	AB738883	–	–	–	–	Direct submission
<i>T. dulciolens</i>	QFB32608	Quebec, Canada	MW628133	–	–	–	–	Landry et al. 2022
<i>T. dulciolens</i>	QFB32627	Quebec, Canada	MW628003	–	–	–	–	Landry et al. 2022
<i>T. dulciolens</i>	QFB32651	Quebec, Canada	MW627882	–	–	–	–	Landry et al. 2022
<i>T. dulciolens</i>	QFB33137	Quebec, Canada	ON256901	–	–	–	–	Landry et al. 2022
<i>T. dulciolens</i>	WTU-F-073066/NS-3162	AK, USA	MW597285	–	–	–	–	Trudell et al. 2022
<i>T. elegans</i>	OTA:61947	New Zealand	JX178630	–	–	–	–	Teasdale et al. 2013
<i>T. elegans</i>	TENN:063711	New Zealand	KJ417316	–	–	–	–	Sánchez-García et al. 2014
<i>T. elliposporum</i>	KUN-HKAS 134998 (Holotype)	Yunnan, China	PQ963076	PV002668	PV002607	PV002576	PQ998430	this study
<i>T. elliposporum</i>	KUN-HKAS 134999	Yunnan, China	PQ963077	PV002669	PV002608	PV002577	PQ998431	this study
<i>T. equestre</i>	HMJAU22249	Gomel, Belarus	MW724392	MW729988	MW729857	–	MW732319	Ding et al. 2023
<i>T. equestre</i>	KUN-HKAS 101190	Yunnan, China	PQ963078	–	–	–	–	this study
<i>T. equestre</i>	KUN-HKAS 106283	Yunnan, China	MW724433	–	–	–	–	Ding et al. 2023
<i>T. equestre</i>	KUN-HKAS 106484	Yunnan, China	MW724349				MW732278	Ding et al. 2023
<i>T. equestre</i>	KUN-HKAS 138813	Yunnan, China	PQ963079	–	–	–	–	this study
<i>T. equestre</i>	KUN-HKAS 138814	Yunnan, China	PQ963080	–	–	–	–	this study
<i>T. equestre</i>	KUN-HKAS 138815	Yunnan, China	PQ963081	–	–	–	–	this study
<i>T. equestre</i>	KUN-HKAS 138816	Yunnan, China	PQ963082	–	–	–	–	this study
<i>T. equestre</i>	KUN-HKAS 49645	Yunnan, China	MW724470	MW730055	MW729907	MW730179	MW732377	Ding et al. 2023
<i>T. equestre</i>	KUN-HKAS 63047	Yunnan, China	MW724448	MW730038	MW729895	MW730163	MW732361	Ding et al. 2023
<i>T. equestre</i>	KUN-HKAS 87994	Yunnan, China	PQ963083	–	–	–	–	this study
<i>T. equestre</i>	KUN-HKAS 97074	Sichuan, China	PQ963084	–	–	–	–	this study
<i>T. equestre</i>	KUN-HKAS 97909	Sichuan, China	MW724383					Ding et al. 2023
<i>T. equestre</i>	KUN-HKAS 99397	Sichuan, China	MW724384	MW729979	MW729848	MW730118	–	Ding et al. 2023
<i>T. equestre</i>	MB-301506	Yunnan, China	MF034239	–	–	–	–	Reschke et al. 2018
<i>T. equestre</i>	MB-305549	Yunnan, China	MF034257					Reschke et al. 2018
<i>T. equestre</i>	MC94-027	Denmark	LT000018	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. equestre</i>	MC96-155	Denmark	LT000020	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. equestre</i>	WTU-F-012824/SAT-03-308-05	USA, OR	MW597235	–	–	–	–	Trudell et al. 2022

<i>T. equestre</i>	WTU-F-073025/ew-11-X-2014	WA, USA	MW597226	–	–	–	–	Trudell et al. 2022
<i>T. equestre</i> s.l.	QFB30951	Quebec, Canada	MW628095	–	–	–	–	Landry et al. 2022
<i>T. equestre</i> s.l.	QFB32616	Quebec, Canada	MW627969	–	–	–	–	Landry et al. 2022
‘ <i>T. equestre</i> ’	EqFrW	France	HM590874	–	–	–	–	Moukha et al. 2013
<i>T. aff. equestre</i>	GO-2009-070	Mexico	KT875117	–	–	–	–	Direct submission
<i>T. aff. equestre</i>	HC-PNNT-280	Mexico	KT875116					Direct submission
<i>T. felschii</i>	AGF21 (Holotype)	Costa Rica	MH704855	–	–	–	–	Ovrebo et al. 2019
<i>T. felschii</i>	CSU-CLO4562	USA	MH704857	–	–	–	–	Ovrebo et al. 2019
<i>T. filamentosum</i>	C-F-96191	Slovenia	LT000138	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. filamentosum</i>	MB-000950	Germany	MW724422	MW730015	MW729878	MW730152	MW732339	Ding et al. 2023
<i>T. filamentosum</i>	MB-002942	Germany	MW724423	MW730016	MW729879	MW730153	MW732340	Ding et al. 2023
<i>T. flavovirens</i>	AP35	Portugal	EU186305	–	–	–	–	Direct submission
<i>T. flavovirens</i>	FLAS-F-60270	USA	MF153057	–	–	–	–	Direct submission
<i>T. flavovirens</i>	TNS:F-15544	Japan	AB712397	–	–	–	–	Ota et al. 2012
<i>T. focale</i>	CMMF002625	Quebec, Canada	MW627922	–	–	–	–	Landry et al. 2022
<i>T. focale</i>	JV97-239 (Neotype)	Sweden	LT000166	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. focale</i>	KUN-HKAS 106309	Yunnan, China	MW724460	MW730049	MW729902	MW730175	–	Ding et al. 2023
<i>T. focale</i>	UBC-F-21190/PK6734	BC, USA	MW597216	–	–	–	–	Trudell et al. 2022
<i>T. forteflavescens</i>	KUN-HKAS 93511 (Holotype)	Yunnan, China	MF034207	–	–	–	–	Landry et al. 2022
<i>T. forteflavescens</i>	MB-301985	Yunnan, China	MF034246	–	–	–	–	Reschke et al. 2018
<i>T. fracticum</i>	KMS436	USA	AF377238	–	–	–	–	Bidartondo & Bruns 2002
<i>T. frondosae</i> type I	KUN-HKAS 87149	Yunnan, China	MW724346	–	MW729813	–	MW732276	Ding et al. 2023
<i>T. frondosae</i> type I	KUN-HKAS 98072	Sichuan, China	MW724365	MW729960	MW729831	MW730104	MW732294	Ding et al. 2023
<i>T. frondosae</i> type I	MC95-130	Sweden	LT000167	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. frondosae</i> type II	MC00-225	Slovenia	LT000140	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. frondosae</i> type II	MC96-235	Denmark	LT000023	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. fucatum</i>	MB-102537	Austria	MF034233	–	–	–	–	Reschke et al. 2018
<i>T. fucatum</i>	MC97-149 (Neotype)	Sweden	LT000170	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. fulvimarginatum</i>	NY00814999/Halling_3234	Quebec, Canada	OP221720	–	–	–	–	Landry et al. 2022
<i>T. fulvimarginatum</i>	QFB32593	Quebec, Canada	MW628035	–	–	–	–	Landry et al. 2022
<i>T. fulvocastaneum</i>	KUN-HKAS 107567	Yunnan, China	MW724465	MW730052	MW729904	MW730176	MW732374	Ding et al. 2023
<i>T. fulvocastaneum</i>	KUN-HKAS 107568	Yunnan, China	MW724466	MW730053	MW729905	MW730177	MW732375	Ding et al. 2023
<i>T. fulvocastaneum</i>	KUN-HKAS 107571	Yunnan, China	MW724469	–	–	–	–	Ding et al. 2023
<i>T. fulvocastaneum</i>	KUN-HKAS 134989	Yunnan, China	PQ963085	PV002670	PV002610	–	PQ998432	this study
<i>T. fulvocastaneum</i>	KUN-HKAS 134990	Yunnan, China	PQ963086	PV002671	PV002609	–	PQ998433	this study
<i>T. fulvocastaneum</i>	TFM:M-R26	Japan	AB699663					Ota et al. 2012

<i>T. fulvomaculatum</i>	KUN-HKAS 107572 (Holotype)	Xizang, China	MW724472	MW730057	MW729909	MW730180	MW732379	Ding et al. 2023
<i>T. fulvomaculatum</i>	KUN-HKAS 107576	Xizang, China	MW724473	MW730058	MW729910	MW730181	MW732380	Ding et al. 2023
<i>T. fulvum</i>	CMMF005952	Quebec, Canada	MW628101	—	—	—	—	Landry et al. 2022
<i>T. fulvum</i>	JHC04-251	Sweden	LT000171	—	—	—	—	Heilmann-Clausen et al. 2017
<i>T. fulvum</i>	MB-000915	Austria	MF034211	—	—	—	—	Reschke et al. 2018
<i>T. fulvum</i>	QFB29718	Quebec, Canada	MN992649	—	—	—	—	Landry et al. 2022
<i>T. fulvum</i>	QFB32586	Quebec, Canada	MW627924	—	—	—	—	Landry et al. 2022
<i>T. fulvum</i> s.l.	WTU-F-073007/SAT-13-273-13	AK, USA	MW597191	—	—	—	—	Trudell et al. 2022
<i>T. fumosoluteum</i>	2385-QFB-25771	Canada	KJ705245	—	—	—	—	Direct submission
<i>T. fumosoluteum</i>	CMMF004866	Quebec, Canada	MW627913	—	—	—	—	Landry et al. 2022
<i>T. fumosoluteum</i>	CMMF010550	Quebec, Canada	MW628042	—	—	—	—	Landry et al. 2022
<i>T. grave</i>	CMMF002586	Quebec, Canada	ON256906	—	—	—	—	Landry et al. 2022
<i>T. grave</i>	CMMF014763	Quebec, Canada	MW628135	—	—	—	—	Landry et al. 2022
<i>T. griseofulvum</i>	KUN-HKAS 106652 (Holotype)	Sichuan, China	MW724408	MW730002	MW729870	MW730139	MW732330	Ding et al. 2023
<i>T. griseofulvum</i>	KUN-HKAS 106653	Sichuan, China	MW724409	MW730003	MW729871	MW730140	MW732331	Ding et al. 2023
<i>T. griseoviolaceum</i>	SFSU-F-000786/KMS352 (Holotype)	CA, USA	MN809562	—	—	—	—	Trudell et al. 2022
<i>T. guldeniae</i>	MB-002988	Austria	MF034223	—	—	—	—	Reschke et al. 2018
<i>T. guldeniae</i>	MC95103 (Holotype)	Norway	FJ544860	—	—	—	—	Christensen & Heilmann-Clausen 2009
<i>T. hemisulphureum</i>	FLAS-F-60367	USA	MF153084	—	—	—	—	Dierect submission
<i>T. hemisulphureum</i>	JV08-364	Estonia	LT000065	—	—	—	—	Heilmann-Clausen et al. 2017
<i>T. hemisulphureum</i>	QFB28692	Quebec, Canada	MN992537	—	—	—	—	Landry et al. 2022
<i>T. aff. hemisulphureum</i>	WTU-F-073075/SAT-15-229-06	NM, USA	MW597293	—	—	—	—	Trudell et al. 2022
<i>T. highlandense</i>	HMAS96585	Yunnan, China	PQ963087	PV002672	PV002611	—	PQ998434	this study
<i>T. highlandense</i>	KUN-HKAS 70192 (Holotype)	Yunnan, China	KY488549	MW729939	MW729811	MW730086	MW732274	Ding et al. 2023
<i>T. highlandense</i>	KUN-HKAS 74293	Yunnan, China	KY488546	MW729919	MW729793	MW730067	MW732254	Ding et al. 2023
<i>T. highlandense</i>	KUN-HKAS 76215	Sichuan, China	KY488548	MW729933	MW729806	MW730080	MW732268	Ding et al. 2023
<i>T. ilkkæ</i>	S-F173364	Sweden	LT222028	—	—	—	—	Heilmann-Clausen et al. 2017
<i>T. ilkkæ</i>	S-F513823 (Holotype)	Sweden	LT222029	—	—	—	—	Heilmann-Clausen et al. 2017
<i>T. imbricatoides</i>	CMMF005038	Quebec, Canada	MW628018	—	—	—	—	Landry et al. 2022
<i>T. imbricatoides</i>	QFB30736	Quebec, Canada	MW628048	—	—	—	—	Landry et al. 2022
<i>T. imbricatum</i>	DBG:18278	CU, USA	MF034265	—	—	—	—	Reschke et al. 2018
<i>T. imbricatum</i>	KMS296	USA	AF377242	—	—	—	—	Bidartondo & Bruns 2002
<i>T. imbricatum</i>	KUN-HKAS 112559	Yunnan, China	MW724476	MW730060	—	—	MW732382	Ding et al. 2023
<i>T. imbricatum</i>	KUN-HKAS 134975	Yunnan, China	PQ963088	PV002673	PV002612	PV002578	PQ998435	this study
<i>T. imbricatum</i>	KUN-HKAS 87886	Xizang, China	MW724327	MW729921	MW729794	MW730070	MW732257	Ding et al. 2023
<i>T. imbricatum</i>	MB-301505	Yunnan, China	MF034238	—	—	—	—	Reschke et al. 2018

<i>T. imbricatum</i>	MC94-046 (Neotype)	Denmark	LT000024	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. aff. imbricatum</i>	WTU-F-012825/SAT-03-308-03	OR, USA	MW597236	–	–	–	–	Trudell et al. 2022
<i>T. inamoenum</i>	JHC95-042 (Neotype)	Sweden	LT000173	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. inamoenum</i>	KUN-HKAS 58046	Yunnan, China	MW724430	MW730023	–	–	–	Ding et al. 2023
<i>T. inamoenum</i>	KUN-HKAS 79926	Xizang, China	MW724431	–	–	–	–	Ding et al. 2023
<i>T. inamoenum</i>	QFB32577	Quebec, Canada	MW627999	–	–	–	–	Landry et al. 2022
<i>T. inamoenum</i>	WTU-F-073068/SAT-14-238-15	AK, USA	MW597287	–	–	–	–	Trudell et al. 2022
<i>T. inocybeoides</i>	KUN-HKAS 106285	Yunnan, China	PQ963089	–	–	–	–	this study
<i>T. inocybeoides</i>	KUN-HKAS 106315	Gansu, China	PQ963090	PV002674	PV002613	–	–	this study
<i>T. inocybeoides</i>	KUN-HKAS 106525	Xinjiang, China	MW724396	MW729991	MW729860	MW730129	MW732321	Ding et al. 2023
<i>T. inocybeoides</i>	KUN-HKAS 89215	Sichuan, China	MW724375	MW729970	MW729839	MW730109	MW732302	Ding et al. 2023
<i>T. inocybeoides</i>	MB-003516	Germany	–	MW730018	MW729881	–	MW732343	Ding et al. 2023
<i>T. inocybeoides</i>	MC03-229	Denmark	LT000025	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. intermedium</i>	CMMF002990	Quebec, Canada	MW628040	–	–	–	–	Landry et al. 2022
<i>T. intermedium</i>	WTU-F-073028/ADP 141006-1	WA, USA	MZ054353	–	–	–	–	Trudell et al. 2022
<i>T. japonicum</i>	MR27	Japan	AB036900	–	–	–	–	Direct submission
<i>T. japonicum</i>	WTU-F-073074/NS-3319	WA, USA	MW597292	–	–	–	–	Trudell et al. 2022
<i>T. joachimii</i>	TRgmb00060	Italy	LT000106	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. joachimii</i>	BILAS51238	Lithuania	KY937184	–	–	–	–	Iršėnaitė et al. 2022
‘ <i>T. joachimii</i> ’	JoFr	France	HM590876	–	–	–	–	Moukha et al. 2013
<i>T. josserandii</i>	MC99-053	France	LT000081	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. josserandii</i>	MC99-056	France	LT000082	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. lascivum</i>	MB-303096	Ukraine	MF034316	–	–	–	–	Reschke et al. 2018
<i>T. lascivum</i>	MC00-519	Denmark	LT000028	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. lishanense</i>	KUN-HKAS 105390	Liaoning, China	MW724441	MW730033	–	–	MW732356	Ding et al. 2023
<i>T. luridum</i>	MB-002901	Austria	MF034217	–	–	–	–	Reschke et al. 2018
<i>T. luteomaculosum</i>	SFSU/KMS292	CA, USA	MW597221	–	–	–	–	Trudell et al. 2022
<i>T. luteomaculosum</i> type I	CSU-CLO4623b	USA	MH704858	–	–	–	–	Ovrebo et al. 2019
<i>T. luteomaculosum</i> type I	CSU-CLO4632	USA	MH704859	–	–	–	–	Ovrebo et al. 2019
<i>T. luteomaculosum</i> type II	trh1187	USA	AF458448	–	–	–	–	Horton 2002
<i>T. luteomaculosum</i> type II	UBC F19693	Canada	HM240543	–	–	–	–	Direct submission
<i>T. lutescens</i>	WTU-F-073078/SAT-14-239-16 (Holotype)	AK, USA	MW597296	–	–	–	–	Trudell et al. 2022
<i>T. lutescens</i>	WTU-F-065768/SAT-11-241-08	AK, USA	MW597245	–	–	–	–	Trudell et al. 2022
<i>T. macrosporum</i>	KUN-HKAS 107577 (Holotype)	Sichuan, China	MW724474	MW730059	MW729911	MW730182	MW732381	Ding et al. 2023
<i>T. macrosporum</i>	KUN-HKAS 154384	Sichuan, China	PX992532	–	–	–	–	this study
<i>T. magnivelare</i>	NYSf2421 (Holotype)	USA	LT220177	–	–	–	–	Trudell et al. 2017

<i>T. magnivelare</i>	QFB32638	Quebec, Canada	MW628047	—	—	—	—	Landry et al. 2022
<i>T. manzanitae</i>	MICH 12322/TJB-4084	CA, USA	MN809570	—	—	—	—	Trudell et al. 2022
<i>T. manzanitae</i>	MICH 12322/TJB-4084 (Holotype)	CA, USA	MW597230	—	—	—	—	Trudell et al. 2022
<i>T. marquettense</i>	TRTC150873 (Holotype)	Quebec, Canada	OP221716	—	—	—	—	Landry et al. 2022
<i>T. marquettense</i>	WTU-F-012690/PBM2052	WA, USA	MZ054355	—	—	—	—	Trudell et al. 2022
<i>T. mastoideum</i>	KUN-HKAS 88051	Yunnan, China	OK036717	—	—	—	—	Cui et al. 2022
<i>T. mastoideum</i>	KUN-HKAS 97096 (Holotype)	Sichuan, China	MW724357	MW729951	MW729823	—	MW732287	Ding et al. 2023
<i>T. mastoideum</i>	KUN-HKAS 97105	Sichuan, China	MW724362	MW729956	MW729827	—	—	Ding et al. 2023
<i>T. matsutake</i>	KUN-HKAS 106299	Yunnan, China	MW724403	—	—	—	—	Ding et al. 2023
<i>T. matsutake</i>	KUN-HKAS 107569	Yunnan, China	MW724467	—	—	—	—	Ding et al. 2023
<i>T. matsutake</i>	KUN-HKAS 134992	Yunnan, China	PQ963091	—	—	—	—	this study
<i>T. matsutake</i>	KUN-HKAS 16977	Sichuan, China	PQ963092	—	—	—	PQ998436	this study
<i>T. matsutake</i>	KUN-HKAS 17632	Yunnan, China	PQ963093	—	—	—	PQ998437	this study
<i>T. matsutake</i>	KUN-HKAS 32450	Sichuan, China	PQ963094	PV002675	PV002614	—	PQ998438	this study
<i>T. matsutake</i>	KUN-HKAS 57470	Yunnan, China	MW724350	MW729945	MW729818	MW730092	MW732280	Ding et al. 2023
<i>T. matsutake</i>	KUN-HKAS 98323	Sichuan, China	MW724385	MW729980	MW729849	MW730119	MW732311	Ding et al. 2023
<i>T. matsutake</i>	TNS:F-12850	Japan	AB699630	—	—	—	—	Ota et al. 2012
<i>T. matsutake</i>	TUR-JuV23362F	Finland	LT000071	—	—	—	—	Direct submission
<i>T. mcneilii</i>	QFB32579	Quebec, Canada	MW628115	—	—	—	—	Landry et al. 2022
<i>T. mcneilii</i>	QFB32581	Quebec, Canada	MW627953	—	—	—	—	Landry et al. 2022
<i>T. megalophaeum</i>	WTU-F-047868/SAT-00-297-38a	WA, USA	MW597237	—	—	—	—	Trudell et al. 2022
<i>T. megalophaeum</i>	WTU-F-073080/NS-18-XI-2016	CA, USA	MW597299	—	—	—	—	Trudell et al. 2022
<i>T. melleum</i>	KUN-HKAS 103101	Sichuan, China	PQ963095	PV002676	—	—	PQ998439	this study
<i>T. melleum</i>	KUN-HKAS 93514 (Holotype)	Yunnan, China	MF034210	—	—	—	—	Reschke et al. 2018
<i>T. mesoamericanum</i>	FCME21585 (Holotype)	Mexico	KX037037	—	—	—	—	Trudell et al. 2017
<i>T. michiganense</i>	CMMF024668	Quebec, Canada	MW628066	—	—	—	—	Landry et al. 2022
<i>T. michiganense</i>	CMMF024672	Quebec, Canada	MW627970	—	—	—	—	Landry et al. 2022
<i>T. moseri</i>	F-C0002152F/M-8521 (Holotype)	MEX, USA	MW597300	—	—	—	—	Trudell et al. 2022
<i>T. moseri</i>	WTU-F-065670/SAT-11-154-01	WA, USA	MW597243	—	—	—	—	Trudell et al. 2022
<i>T. moseri</i>	WTU-F-073047/SAT-13-151-03	ID, USA	MW597266	—	—	—	—	Trudell et al. 2022
<i>T. moseri</i>	WTU-F-073057/ADP 160430-3	WA, USA	MW597276	—	—	—	—	Trudell et al. 2022
<i>T. muricatum</i>	SFSU-F-000785/KMS368 (Holotype)	CA, USA	MN809563	—	—	—	—	Trudell et al. 2022
<i>T. murrillianum</i>	NY586560 (Holotype)	USA	LT220179	—	—	—	—	Trudell et al. 2017
<i>T. murrillianum</i>	SAT-16-319-01	USA	KY660032	—	—	—	—	Trudell et al. 2017
<i>T. murrillianum</i>	NY 586560/WAM 1044	OR, USA	MN809572	—	—	—	—	Trudell et al. 2022
<i>T. muscarioides</i>	KUN-HKAS 134993	Sichuan, China	PQ963096	PV002677	PV002615	—	PQ998440	this study

<i>T. muscarioides</i>	KUN-HKAS 69737	Yunnan, China	MW724358	MW729952	MW729824	MW730098	MW732288	Ding et al. 2023
<i>T. muscarioides</i>	KUN-HKAS 93512 (Holotype)	Yunnan, China	MF034208	–	–	–	–	Reschke et al. 2018
<i>T. muscarium</i>	KUN-HKAS 106307	Yunnan, China	MW724442	MW730034	–	MW730159	MW732357	Ding et al. 2023
<i>T. muscarium</i>	KUN-HKAS 76274	Yunnan, China	MW724339	MW729934	MW729807	MW730081	MW732269	Ding et al. 2023
<i>T. muscarium</i>	KUN-HKAS 82035	Yunnan, China	PQ963097	PV002678	PV002616	–	PQ998441	this study
<i>T. muscarium</i>	TNS:F39016	Japan	MF034263	–	–	–	–	Reschke et al. 2018
<i>T. mutabile</i>	trh916	USA	AF458444	–	–	–	–	Horton 2002
<i>T. mutabile</i>	WTU-F-073040/ADP 141014-1	ID, USA	MW597259	–	–	–	–	Trudell et al. 2022
<i>T. aff. mutabile</i>	QFB32607	Quebec, Canada	MW627891	–	–	–	–	Landry et al. 2022
<i>T. aff. mutabile</i>	QFB32633	Quebec, Canada	MW627934	–	–	–	–	Landry et al. 2022
<i>T. nigrosquamosum</i>	KUN-HKAS 138836	Gansu,China	PQ963098	–	–	–	–	this study
<i>T. nigrosquamosum</i>	KUN-HKAS 23947	Sichuan, China	PQ963099	–	–	–	–	this study
<i>T. nigrosquamosum</i>	KUN-HKAS 46041	Xizang, China	PQ963100	–	PV002617	–	PQ998442	this study
<i>T. nigrosquamosum</i>	KUN-HKAS 57199	Xizang, China	KY488550	MW729944	MW729817	MW730091	MW732279	Ding et al. 2023
<i>T. nigrosquamosum</i>	KUN-HKAS 82513	Xizang, China	KY488551	–	–	–	–	Yang et al. 2017
<i>T. nigrosquamosum</i>	KUN-HKAS 82533	Xizang, China	KY488552	MW729949	MW729822	MW730096	MW732284	Ding et al. 2023
<i>T. nigrum</i>	WTU-F-000660/SAT-00-314-38	WA, USA	MW597231	–	–	–	–	Trudell et al. 2022
<i>T. nigrum</i>	WTU-F-073070/SAT-15-289-11	WA, USA	MW597288	–	–	–	–	Trudell et al. 2022
<i>T. odorum</i>	CMMF005981	Quebec, Canada	MW627962	–	–	–	–	Landry et al. 2022
<i>T. odorum</i>	QFB32614	Quebec, Canada	MW628090	–	–	–	–	Landry et al. 2022
<i>T. olivaceiceps</i>	KUN-HKAS 101280 (Holotype)	Yunnan, China	PQ963101	PV002679	PV002618	–	PQ998443	this study
<i>T. olivaceiceps</i>	KUN-HKAS 97665	Yunnan, China	–	PV002680	PV002619	–	–	this study
<i>T. olivaceiceps</i>	KUN-HKAS 97670	Yunnan, China	PQ963102	PV002681	–	–	PQ998444	this study
<i>T. olivaceobrunneum</i>	TRTC150865 (Holotype)	Quebec, Canada	OP221717	–	–	–	–	Landry et al. 2022
<i>T. olivaceifolium</i>	KUN-HKAS 107574 (Holotype)	Xizang, China	MW724471	MW730056	MW729908	–	MW732378	Ding et al. 2023
<i>T. olivaceifolium</i>	KUN-HKAS 39073	Yunnan, China	PQ963103	–	–	–	–	this study
<i>T. olivaceifolium</i>	KUN-HKAS 54922	Yunnan, China	MW724432	MW730024	MW729884	–	MW732348	Ding et al. 2023
<i>T. olivaceoluteolum</i>	KUN-HKAS 105345	Yunnan, China	PQ963104	PV002682	PV002620	–	PQ998445	this study
<i>T. olivaceoluteolum</i>	KUN-HKAS 138809	China	PQ963105	PV002683	PV002621	–	PQ998446	this study
<i>T. olivaceoluteolum</i>	KUN-HKAS 53266	Yunnan, China	PQ963106	PV002684	PV002622	–	PQ998447	this study
<i>T. olivaceoluteolum</i>	KUN-HKAS 68691	Yunnan, China	MW724353	–	–	–	–	Ding et al. 2023
<i>T. olivaceoluteolum</i>	KUN-HKAS 89668	Yunnan, China	MW724378	MW729973	MW729842	MW730112	MW732305	Ding et al. 2023
<i>T. olivaceoluteolum</i>	KUN-HKAS 93510 (Holotype)	Yunnan, China	NR_160586	–	–	–	–	Reschke et al. 2018
<i>T. olivaceonigrum</i>	TMI 26359	Japan	LC335842	–	–	–	–	Ushijimaa et al. 2021
<i>T. olivaceonigrum</i>	TMI 26360 (Holotype)	Japan	LC260648	–	–	–	–	Ushijimaa et al. 2021
<i>T. olivaceotinctum</i>	KUN-HKAS 107583	Sichuan, China	PQ963107	–	–	–	–	this study

<i>T. olivaceotinctum</i>	KUN-HKAS 107586	Sichuan, China	MW724405	MW729999	–	–	–	Ding et al. 2023
<i>T. olivaceotinctum</i>	KUN-HKAS 50898	Sichuan, China	MW724372	MW729967	MW729837	MW730107	MW732299	Ding et al. 2023
<i>T. olivaceotinctum</i>	KUN-HKAS 99374	Sichuan, China	MW724380	MW729975	MW729844	MW730114	MW732307	Ding et al. 2023
<i>T. olivaceotinctum</i>	MC97103 (Holotype)	Sweden	FJ544861	–	–	–	–	Christensen & Heilmann-Clausen 2009
<i>T. aff. olivaceotinctum</i>	HMAS46639	Xizang, China	PQ963108	–	–	–	–	this study
<i>T. aff. olivaceotinctum</i>	WTU-F-073041/ADP 151103-1	WA, USA	MW597260	–	–	–	–	Trudell et al. 2022
<i>T. olivaceum</i>	KUN-HKAS 136507	Yunnan, China	PQ963109	PV002685	PV002623	PV002580	PQ998448	this study
<i>T. olivaceum</i>	KUN-HKAS 68600	Yunnan, China	MW724351	MW729946	MW729819	MW730093	MW732281	Ding et al. 2023
<i>T. olivaceum</i>	KUN-HKAS 71335	Yunnan, China	MW724338	MW729932	MW729805	MW730079	MW732267	Ding et al. 2023
<i>T. olivaceum</i>	KUN-HKAS 93513 (Holotype)	Yunnan, China	MF034209	–	–	–	–	Reschke et al. 2018
<i>T. olivaceum</i>	KUN-HKAS 97080	Yunnan, China	MW724337	MW729931	MW729804	–	–	Ding et al. 2023
<i>T. orienticum</i>	KUN-HKAS 138810	Yunnan, China	PQ963110	–	–	–	–	this study
<i>T. orienticum</i>	KUN-HKAS 55189 (Holotype)	Yunnan, China	MW724379	MW729974	MW729843	MW730113	MW732306	Ding et al. 2023
<i>T. orienticum</i>	KUN-HKAS 78949	Yunnan, China	PQ963111	–	PV002624	–	PQ998449	this study
<i>T. orienticolossum</i>	KUN-HAKS99341 (Holotype)	Sichuan, China	MT124443	–	–	–	–	Xu et al. 2020
<i>T. orienticolossum</i>	KUN-HKAS 98045	Sichuan, China	MT124444	MW729958	MW729829	MW730102	MW732292	Ding et al. 2023
<i>T. orientifulvum</i>	KUN-HAKS107156	Yunnan, China	MT124445	–	–	–	–	Xu et al. 2020
<i>T. orientifulvum</i>	KUN-HAKS107157 (Holotype)	Yunnan, China	MT114682	–	–	–	–	Xu et al. 2020
<i>T. orientifulvum</i>	KUN-HKAS 105381	Liaoning, China	MW724438	MW730030	MW729889	–	–	Ding et al. 2023
<i>T. orientifulvum</i>	KUN-HKAS 105383	Liaoning, China	MW724439	MW730031	MW729890	–	MW732354	Ding et al. 2023
<i>T. rubrocastaneum</i>	KUN-HKAS 134978 (Holotype)	Yunnan, China	PQ963112	PV002686	PV002625	PV002581	PQ998450	this study
<i>T. rubrocastaneum</i>	KUN-HKAS 97076	Sichuan, China	MW724321	MW729916	MW729790	MW730064	MW732251	Ding et al. 2023
<i>T. rubrocastaneum</i>	KUN-HKAS 97827	Sichuan, China	MW724381	MW729976	MW729845	MW730115	MW732308	Ding et al. 2023
<i>T. orirubens</i>	JHC01-200	Slovenia	LT000141	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. orirubens</i>	JHC93-261	Denmark	LT000030	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. pallens</i>	CMMF003782	Quebec, Canada	MW628013	–	–	–	–	Landry et al. 2022
<i>T. pallens</i>	QFB33134	Quebec, Canada	ON256907	–	–	–	–	Landry et al. 2022
<i>T. palustre</i>	AFTOL-ID 497	USA	DQ494699	–	–	–	–	Matheny et al. 2006
<i>T. palustre</i>	QFB32641	Quebec, Canada	MW628111	–	–	–	–	Landry et al. 2022
<i>T. pardinum</i>	C-F-96190	Slovenia	LT000142	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. pardinum</i>	MB-006381	Germany	MW724424	–	–	–	MW732341	Ding et al. 2023
<i>T. aff. pardinum</i>	WTU-F-073035/E.Cline 03-X-2015	WA, USA	MW597254	–	–	–	–	Trudell et al. 2022
<i>T. aff. pardinum</i>	WTU-F-073071/SAT-13-314-01	OR, USA	MW597289	–	–	–	–	Trudell et al. 2022
<i>T. gansuense</i>	KUN-HKAS 106316 (Holotype)	Gansu, China	PQ963113	PV002687	PV002626	–	–	this study
<i>T. gansuense</i>	KUN-HKAS 138831	Gansu, China	PQ963114	–	–	–	–	this study
<i>T. pessundatum</i>	CMMF003403	Quebec, Canada	MW628053	–	–	–	–	Landry et al. 2022

<i>T. pessundatum</i>	JV04-482 (Epitype)	Denmark	LT000032	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. platyphyllum</i>	WTU-F-012695/PBM814	WA, USA	OM506548	–	–	–	–	Trudell et al. 2022
<i>T. platyphyllum</i>	WTU-F-073003/SAT-13-313-16	OR, USA	MW597187	–	–	–	–	Trudell et al. 2022
<i>T. populinum</i>	HMAS37293	Heilongjiang, China	PQ963115	PV002688	PV002627	–	PQ998451	this study
<i>T. populinum</i>	HMAS37412	Hebei, China	–	PV002689	PV002628	–	PQ998452	this study
<i>T. populinum</i>	HMAS50718	Sichuan, China	PQ963116	–	–	–	–	this study
<i>T. populinum</i>	HMAS50948	Xizang, China	PQ963117	PV002690	PV002629	–	PQ998453	this study
<i>T. populinum</i>	HMAS63562	Beijing, China	PQ963158	–	–	–	–	this study
<i>T. populinum</i>	KUN-HKAS 106292	Yunnan, China	PQ963118	–	–	–	–	this study
<i>T. populinum</i>	KUN-HKAS 106293	Yunnan, China	PQ963119	–	–	–	–	this study
<i>T. populinum</i>	KUN-HKAS 106656	Sichuan, China	MW724410	MW730004	MW729872	MW730141	MW732332	Ding et al. 2023
<i>T. populinum</i>	KUN-HKAS 106657	Sichuan, China	MW724411	MW730005	MW729873	MW730142	MW732333	Ding et al. 2023
<i>T. populinum</i>	MB-301648	Yunnan, China	MF034242	–	–	–	–	Reschke et al. 2018
<i>T. populinum</i>	MC00-236	Slovenia	LT000143	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. portentosum</i>	CMMF002744	Quebec, Canada	MW628067	–	–	–	–	Landry et al. 2022
<i>T. portentosum</i>	CMMF005168	Quebec, Canada	MW628120	–	–	–	–	Landry et al. 2022
<i>T. portentosum</i>	KUN-HKAS 71728	Yunnan, China	MW724343	MW729938	MW729810	MW730085	MW732273	Ding et al. 2023
<i>T. portentosum</i>	KUN-HKAS 74375	Yunnan, China	MW724461	–	MW729903	–	–	Ding et al. 2023
<i>T. portentosum</i>	KUN-HKAS 97075	Sichuan, China	MW724478	MW730062	MW729913	MW730184	MW732384	Ding et al. 2023
<i>T. portentosum</i>	MC96-156 (Neotype)	Denmark	LT000035	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. portentosum</i>	QFB32599	Quebec, Canada	MW628008	–	–	–	–	Landry et al. 2022
<i>T. portentosum</i> s.l.	WTU-F-073013/ADP 031026-2	WA, USA	MW597197	–	–	–	–	Trudell et al. 2022
<i>T. portentosum</i> s.l.	WTU-F-073024/E. Cline 11-X-2014	WA, USA	MW597225	–	–	–	–	Trudell et al. 2022
<i>T. psammopus</i>	KUN-HKAS 106302	Inner Mongolia, China	MW724436	MW730028	MW729887	–	MW732352	Ding et al. 2023
<i>T. psammopus</i>	KUN-HKAS 106314	Gansu, China	MW724458	MW730046	MW729899	MW730172	MW732369	Ding et al. 2023
<i>T. psammopus</i>	KUN-HKAS 107579	Gansu, China	PQ963120	PV002691	PV002630	PV002582	PQ998454	this study
<i>T. psammopus</i>	KUN-HKAS 138825	Yunnan, China	PQ963121	–	–	–	–	this study
<i>T. psammopus</i>	MC04-600	Slovenia	LT000145	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. psammopus</i>	MC96-345	Italy	LT000108	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. pseudoterreum</i>	CMMF006864	Quebec, Canada	MW627947	–	–	–	–	Landry et al. 2022
<i>T. pseudoterreum</i>	QFB32637	Quebec, Canada	MW628106	–	–	–	–	Landry et al. 2022
<i>T. pullum</i>	QFB32634	Quebec, Canada	ON256910	–	–	–	–	Landry et al. 2022
<i>T. qiaomianjun</i>	KUN-HKAS 101303 (Holotype)	Yunnan, China	OK036719				–	Cui et al. 2022
<i>T. qiaomianjun</i>	KUN-HKAS 136499	Yunnan, China	–	PV002692	PV002631	–	PQ998455	this study
<i>T. qiaomianjun</i>	KUN-HKAS 63020	Yunnan, China	–	MW730035	MW729892	MW730160	MW732359	Ding et al. 2023
<i>T. qiaomianjun</i>	KUN-HKAS 74156	Yunnan, China	–	MW729918	MW729792	MW730066	MW732253	Ding et al. 2023

<i>T. quercetorum</i>	4494	Canada	KJ705247	–	–	–	–	Direct submission
<i>T. quercetorum</i>	C-F-96263	Portugal	LT000125	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. quercetorum</i>	GDOR 872 (Neotype)	Italy	MW477457	–	–	–	–	Carbone et al. 2020
<i>T. rapipes</i>	MC03228	Denmark	LT000037	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. rapipes</i>	MC98-106 (Epitype)	France	LT000085	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. robustipes</i>	CMMF002303	Quebec, Canada	MW627932	–	–	–	–	Landry et al. 2022
<i>T. robustipes</i>	QFB32601	Quebec, Canada	MW628006	–	–	–	–	Landry et al. 2022
<i>T. roseoacerbum</i>	IK881120	Finland	LT000072	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. roseoacerbum</i>	KUN-HKAS 87995	Yunnan, China	PQ963122	–	–	–	–	this study
<i>T. roseoacerbum</i>	KUN-HKAS 88046	Yunnan, China	MW724332	MW729926	MW729799	MW730075	MW732262	Ding et al. 2023
<i>T. roseoacerbum</i>	QFB32619	Quebec, Canada	MW628060	–	–	–	–	Landry et al. 2022
<i>T. rubiginosum</i>	KUN-HKAS 106303	Yunnan, China	MW724450	MW730039	MW729896	MW730165	MW732362	Ding et al. 2023
<i>T. rubiginosum</i>	KUN-HKAS 134980 (Holotype)	Yunnan, China	PQ963123	PV002693	PV002632	–	PQ998456	this study
<i>T. rufenum</i>	MC96-376	Italy	LT000109	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. rufobrunneum</i>	KUN-HKAS 49069	Sichuan, China	OL331894	–	–	–	–	Ding et al. 2022
<i>T. rufobrunneum</i>	KUN-HKAS90808 (Holotype)	Yunnan, China	OL331895					Ding et al. 2022
<i>T. sapineum</i>	QFB32647	Canada	MW627929					Lebeuf et al. 2024
<i>T. sapineum</i>	CMMF009312	Canada	MW627878					Lebeuf et al. 2024
<i>T. saponaceum</i>	AFTOL-ID 672	–	DQ494700					Matheny et al. 2006
<i>T. saponaceum</i> '	C-F23337	Denmark	LT000038	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. saponaceum</i> '	MB-002941	Germany	MF034221	–	–	–	–	Reschke et al. 2018
<i>T. saponaceum</i>	CMMF000669	Quebec, Canada	MW627886	–	–	–	–	Landry et al. 2022
<i>T. saponaceum</i> s.l.	WTU-F-073053/SAT-16-237-20	AK, USA	MW597272	–	–	–	–	Trudell et al. 2022
<i>T. saponaceum</i>	DBG:18233	USA	MF034195	–	–	–	–	Reschke et al. 2018
<i>T. saponaceum</i>	KUN-HKAS 141955	Yunnan, China	PQ963124	–	–	–	–	this study
<i>T. saponaceum</i>	KUN-HKAS 68655	Yunnan, China	MW724352	MW729947	MW729820	MW730094	MW732282	Ding et al. 2023
<i>T. saponaceum</i>	KUN-HKAS 70214	Yunnan, China	MW724345	MW729940	MW729812	MW730087	MW732275	Ding et al. 2023
<i>T. saponaceum</i>	KUN-HKAS 99360	Sichuan, China	MW724386	MW729981	MW729850	MW730120	MW732312	Ding et al. 2023
<i>T. saponaceum</i>	KUN-HKAS 99361	Sichuan, China	MW724387	MW729982	MW729851	MW730121	MW732313	Ding et al. 2023
<i>T. scalpturatum</i>	KUN-HKAS 106916	North Macedonia	PQ963125	PV002694	PV002633	–	PQ998457	this study
<i>T. scalpturatum</i>	MB-003485	Germany	MW724426	MW730019	MW729882	MW730154	MW732344	Ding et al. 2023
<i>T. scalpturatum</i>	MB-003513	Germany	MW724427	MW730020	–	–	MW732345	Ding et al. 2023
<i>T. scalpturatum</i>	MC95-165 (Neotype)	Sweden	LT000187	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. sciodes</i>	MB-002928	Germany	MF034290	–	–	–	–	Reschke et al. 2018
<i>T. sciodes</i>	MC94-007	Denmark	LT000044	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. sejunctum</i>	MC95-187	Denmark	LT000046	–	–	–	–	Heilmann-Clausen et al. 2017

<i>T. sejunctum</i>	MC96-314	Italy	LT000110	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. serratifolium</i>	QFB32610	Quebec, Canada	MW628075	–	–	–	–	Landry et al. 2022
<i>T. serratifolium</i>	QFB33133	Quebec, Canada	ON256896	–	–	–	–	Landry et al. 2022
<i>T. sinense</i>	KUN-HKAS 105356	Yunnan, China	MW724435	MW730027	–	MW730157	MW732351	Ding et al. 2023
<i>T. sinense</i>	KUN-HKAS 69669 (Holotype)	Yunnan, China	PQ963126	PV002695	PV002634	–	PQ998458	this study
<i>T. sinense</i>	KUN-HKAS 69777	Yunnan, China	MW724451	MW730040	MW729897	MW730166	MW732363	Ding et al. 2023
<i>T. sinense</i>	KUN-HKAS 73361	Yunnan, China	MW724341	MW729936	MW729808	MW730083	MW732271	Ding et al. 2023
<i>T. sinoacerbum</i>	GDGM:44680 (Holotype)	Guangdong, China	KT160219	–	–	–	–	Hosen et al. 2016
<i>T. sinoacerbum</i>	KUN-HKAS 105349	Yunnan, China	MW724434	MW730026	MW729886	–	MW732350	Ding et al. 2023
<i>T. sinoacerbum</i>	KUN-HKAS 105388	Liaoning, China	MW724440	MW730032	MW729891	–	MW732355	Ding et al. 2023
<i>T. sinoacerbum</i>	KUN-HKAS 138829	Yunnan, China	PQ963127	–	–	–	–	this study
<i>T. sinoacerbum</i>	KUN-HKAS 140006	Yunnan, China	PQ963128	–	–	–	–	this study
<i>T. sinoacerbum</i>	KUN-HKAS 141012	Yunnan, China	PQ963129	–	–	–	–	this study
<i>T. sinoacerbum</i>	KUN-HKAS 141279	Yunnan, China	PQ963130	–	–	–	–	this study
<i>T. sinoacerbum</i>	KUN-HKAS 78806	Hubei, China	MW724325	–	–	MW730068	MW732255	Ding et al. 2023
<i>T. sinoportentosum</i>	HMAS53246	Xizang, China	PQ963131	PV002696	PV002635	–	PQ998459	this study
<i>T. sinoportentosum</i>	KUN-HKAS 135004	Yunnan, China	PQ963132	PV002697	PV002636	–	PQ998460	this study
<i>T. sinoportentosum</i>	KUN-HKAS 138812	Xizang, China	PQ963133	–	–	–	–	this study
<i>T. sinoportentosum</i>	KUN-HKAS 46084 (Holotype)	Yunnan, China	MF034326					Reschke et al. 2018
<i>T. sinoportentosum</i>	KUN-HKAS 90838	Yunnan, China	MW724359	MW729953	MW729825	MW730099	MW732289	Ding et al. 2023
<i>T. sinoportentosum</i>	KUN-HKAS 90900	Sichuan, China	MW724360	MW729954	MW729826	MW730100	MW732290	Ding et al. 2023
<i>T. sinoportentosum</i>	MB-302073	Yunnan, China	MF034250	–	–	–	–	Reschke et al. 2018
<i>T. smithii</i>	DBG:CLO4513 (Holotype)	USA	MG719957	–	–	–	–	Ovrebo & Hughes 2018
<i>T. smithii</i>	WTU-F-073073/SAT-18-234-15	NM, USA	MW597291	–	–	–	–	Trudell et al. 2022
<i>T. sichuanense</i>	KUN-HKAS 103571	Sichuan, China	PQ963134	–	–	–	–	this study
<i>T. sichuanense</i>	KUN-HKAS 105344 (Holotype)	Sichuan, China	MW724413	MW730006	MW729874	MW730143	MW732334	Ding et al. 2023
<i>T. sichuanense</i>	KUN-HKAS 105540	Yunnan, China	MW724447	–	–	–	–	Ding et al. 2023
<i>T. sichuanense</i>	KUN-HKAS 106308	Sichuan, China	MW724404	MW729998	MW729867	MW730136	MW732327	Ding et al. 2023
<i>T. sichuanense</i>	KUN-HKAS 138817	Yunnan, China	PQ963135	–	–	–	–	this study
<i>T. sichuanense</i>	KUN-HKAS 49388	Sichuan, China	MW724371	MW729966	MW729836	MW730106	MW732298	Ding et al. 2023
<i>T. sichuanense</i>	KUN-HKAS 98270	Sichuan, China	PQ963136	–	–	–	–	this study
<i>T. squarrulosum</i>	JHC93-224	Denmark	LT000047	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. squarrulosum</i>	JHC93-262	Denmark	LT000048	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. stans</i>	KUN-HKAS 82121	Yunnan, China	MW724344	–	–	–	–	Ding et al. 2023
<i>T. stans</i>	KUN-HKAS 87940	Yunnan, China	MW724329	MW729923	MW729796	MW730072	MW732259	Ding et al. 2023
<i>T. stans</i>	KUN-HKAS 99382	Sichuan, China	MW724390	MW729985	MW729854	MW730124	MW732316	Ding et al. 2023

<i>T. stans</i>	MC95-145 (Epitype)	Sweden	LT000189	—	—	—	—	Heilmann-Clausen et al. 2017
<i>T. stans</i>	QFB32597	Quebec, Canada	MW627910	—	—	—	—	Landry et al. 2022
<i>T. stiparophyllum</i>	CMMF007411	Quebec, Canada	MW628064	—	—	—	—	Landry et al. 2022
<i>T. stiparophyllum</i>	CMMF014811	Quebec, Canada	MW628089	—	—	—	—	Landry et al. 2022
<i>T. stiparophyllum</i>	HMAS96586	Inner Mongolia, China	PQ963137	PV002698	PV002637	—	PQ998461	this study
<i>T. stiparophyllum</i>	HMJAU7821	Inner Mongolia, China	MW724464	—	—	—	—	Ding et al. 2023
<i>T. stiparophyllum</i>	KUN-HKAS 135000	Xizang, China	PQ963138	PV002699	PV002638	—	PQ998462	this study
<i>T. stiparophyllum</i>	MB-002925	Germany	MW724419	MW730012	—	MW730149	—	Ding et al. 2023
<i>T. stiparophyllum</i>	MB-003514	Germany	MW724420	MW730013	—	MW730150	—	Ding et al. 2023
<i>T. stiparophyllum</i>	MC95-117	Sweden	LT000190	—	—	—	—	Heilmann-Clausen et al. 2017
<i>T. subacutum</i>	WTU-F-000665/SAT-00-263-26	WA, USA	MZ054354	—	—	—	—	Trudell et al. 2022
<i>T. subacutum</i>	WTU-F-073005/SAT-13-313-14	OR, USA	MW597189	—	—	—	—	Trudell et al. 2022
<i>T. subannulatum</i>	WTU-F-073044/SAT-16-318-01	OR, USA	MW597263	—	—	—	—	Trudell et al. 2022
<i>T. subannulatum</i>	WTU-F-073059/04MWB111008	WA, USA	MW597278	—	—	—	—	Trudell et al. 2022
<i>T. subaureum</i>	TRTC150868 (Type)	Quebec, Canada	OP221719	—	—	—	—	Landry et al. 2022
<i>T. subluteum</i>	2139-QFB-25830	Canada	KJ705255	—	—	—	—	Direct submission
<i>T. subluteum</i>	CMMF014836	Quebec, Canada	MW627931	—	—	—	—	Landry et al. 2022
<i>T. subsejunctum</i>	CMMF002304	Quebec, Canada	MW628049	—	—	—	—	Landry et al. 2022
<i>T. subsejunctum</i>	CMMF014821	Quebec, Canada	MW627890	—	—	—	—	Landry et al. 2022
<i>T. subsejunctum</i>	WTU-F-073002/SAT-13-273-05	AK, USA	MW597186	—	—	—	—	Trudell et al. 2022
<i>T. subumbrinum</i>	MICH 12330/AHS-17671 (Holotype)	WA, USA	MN809571	—	—	—	—	Trudell et al. 2022
<i>T. subumbrinum</i>	QFB33140	Quebec, Canada	ON256903	—	—	—	—	Landry et al. 2022
<i>T. aff. subumbrinum</i>	CMMF024673	Quebec, Canada	MW628129	—	—	—	—	Landry et al. 2022
<i>T. sudum</i>	JV96-306	Denmark	LT000050	—	—	—	—	Heilmann-Clausen et al. 2017
<i>T. sudum</i>	MC98-601 (Neotype)	Denmark	LT000051	—	—	—	—	Heilmann-Clausen et al. 2017
<i>T. sulphurescens</i> type I	MB-102501	Germany	MF034302	MW730021	MW729883	—	—	Ding et al. 2023
<i>T. sulphurescens</i> type I	MC99-063	France	LT000089	—	—	—	—	Heilmann-Clausen et al. 2017
<i>T. sulphurescens</i> type II	TRgmb00062	Italy	LT000113	—	—	—	—	Heilmann-Clausen et al. 2017
<i>T. sulphureum</i>	WTU-F-073018/ADP 041005-1	WA, USA	MZ054352	—	—	—	—	Trudell et al. 2022
<i>T. sulphureum</i> type I	KUN-HKAS 53473	Germany	MW724354	—	—	—	MW732285	Ding et al. 2023
<i>T. sulphureum</i> type I	KUN-HKAS 55509	Yunnan, China	MW724369	MW729964	MW729835	—	MW732296	Ding et al. 2023
<i>T. sulphureum</i> type II	AF0001459	Xizang, China	MW724453	MW730041	—	MW730167	MW732364	Ding et al. 2023
<i>T. sulphureum</i> type II	JHC07-236	Denmark	LT000053	—	—	—	—	Heilmann-Clausen et al. 2017
<i>T. sulphureum</i> type II	KUN-HKAS 106305	Yunnan, China	MW724463	MW730051	—	—	MW732373	Ding et al. 2023
<i>T. sulphureum</i> type II	KUN-HKAS 106906	North Macedonia	PQ963139	—	—	—	—	this study
<i>T. sulphureum</i> type II	KUN-HKAS 137072	Yunnan, China	PQ963140	PV002700	—	—	PQ998463	this study

<i>T. sulphureum</i> type II	KUN-HKAS 138808	Yunnan, China	PQ963141	PV002701	PV002639	PV002583	PQ998464	this study
<i>T. sulphureum</i> type II	KUN-HKAS 54444	Yunnan, China	PQ963142	PV002702	PV002640	PV002584	PQ998465	this study
<i>T. sulphureum</i> type III	HO70098	Norway	AF377245	–	–	–	–	Bidartondo & Bruns 2002
<i>T. sulphureum</i> type III	TF06045	France	LT000091	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. aff. sulphurescens</i>	CMMF024665	Quebec, Canada	MW628082	–	–	–	–	Landry et al. 2022
<i>T. tangerinum</i>	KUN-HKAS 138838	Gansu, China	PQ963143	PV002703	PV002641	PV002585	PQ998466	this study
<i>T. tangerinum</i>	KUN-HKAS 49355 (Holotype)	Sichuan, China	MW724370	MW729965	–	–	MW732297	Ding et al. 2023
<i>T. terreum</i>	CMMF003152	Quebec, Canada	MW628103	–	–	–	–	Landry et al. 2022
<i>T. terreum</i>	CMMF007442	Quebec, Canada	MW628132	–	–	–	–	Landry et al. 2022
<i>T. terreum</i>	CMMF007501	Quebec, Canada	MW627951	–	–	–	–	Landry et al. 2022
<i>T. terreum</i>	HMAS61725	Shaanxi, China	PQ963144	PV002704	PV002642	–	PQ998467	this study
<i>T. terreum</i>	HMAS61965	Hebei, China	–	PV002705	PV002643	–	PQ998468	this study
<i>T. terreum</i>	KUN-HKAS 138832	Yunnan, China	PQ963145	–	–	–	–	this study
<i>T. terreum</i>	KUN-HKAS 52233	China, Yunnan	MW724355	–	–	–	–	Ding et al. 2023
<i>T. terreum</i>	KUN-HKAS 69401	Yunnan, China	MW724333	MW729927	MW729800	MW730076	MW732263	Ding et al. 2023
<i>T. terreum</i>	KUN-HKAS 69914	Yunnan, China	MW724459	MW730048	MW729901	MW730174	MW732371	Ding et al. 2023
<i>T. terreum</i>	KUN-HKAS 71184	Yunnan, China	PQ963146	PV002706	PV002644	PV002586	PQ998469	this study
<i>T. terreum</i>	MB-006378	Germany	MW724428	MW730022	–	–	MW732346	Ding et al. 2023
<i>T. terreum</i>	MEN95192 (Epitype)	Germany	LT000098	–	–	–	–	Heilmann-Clausen et al. 2017
‘ <i>T. terreum</i> ’	MICH53128	USA	JN389295	–	–	–	–	Direct submission
<i>T. tianshanense</i>	HMUT1112	Xinjiang, China	OL584020	PV002707	PV002645	PV002587	–	Zhao et al. 2022 and this study
<i>T. triste</i>	AF0001608	Xizang, China	MW724454	MW730042	–	MW730168	MW732365	Ding et al. 2023
<i>T. triste</i>	DBG:22631	USA	MF034270	–	–	–	–	Reschke et al. 2018
<i>T. triste</i>	KUN-HKAS 135003	Yunnan, China	PQ963147	–	–	–	–	this study
<i>T. triste</i>	KUN-HKAS 138833	Yunnan, China	PQ963148	PV002708	PV002646	PV002588	PQ998470	this study
<i>T. triste</i>	KUN-HKAS 138834	Xizang, China	PQ963149	PV002709	PV002647	PV002589	PQ998471	this study
<i>T. triste</i>	KUN-HKAS 138835	Xinjiang, China	PQ963150	–	–	–	–	this study
<i>T. triste</i>	KUN-HKAS 46008	Xizang, China	PQ963151	–	–	–	–	this study
<i>T. triste</i>	KUN-HKAS 68012	Yunnan, China	MW724374	MW729969	–	–	MW732301	Ding et al. 2023
<i>T. triste</i>	L-E7754 (Neotype)	Germany	LT000099	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. triste</i>	QFB33138	Quebec, Canada	ON256893	–	–	–	–	Landry et al. 2022
<i>T. turgidum</i>	KUN-HKAS 77500 (Holotype)	Yunnan, China	PQ963152	–	PV002648	–	–	this study
<i>T. turgidum</i>	KUN-HKAS 78943	Yunnan, China	PQ963153	PV002710	PV002649	–	–	this study
‘ <i>T. ulvinenii</i> ’	JuV13229F	Finland	LT000068	–	–	–	–	Heilmann-Clausen et al. 2017
‘ <i>T. ulvinenii</i> ’	JuV26740F	Finland	LT000069	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. umbonatum</i> type I	MC00A01	Denmark	LT000063	–	–	–	–	Heilmann-Clausen et al. 2017

<i>T. umbonatum</i> type II	TRgmb00651	Italy	LT000114	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. ustale</i>	JHC92-299	Denmark	LT000064	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. ustale</i>	MB-002924	Germany	MF034288	–	–	–	–	Reschke et al. 2018
<i>T. aff. ustale</i>	QFB32613	Quebec, Canada	MW627945	–	–	–	–	Landry et al. 2022
<i>T. ustaloides</i>	HMAS54035	Hubei, China	–	PV002711	PV002650	–	PQ998472	this study
<i>T. ustaloides</i>	KUN-HKAS 74246	Yunnan, China	MW724331	MW729925	MW729798	MW730074	MW732261	Ding et al. 2023
<i>T. ustaloides</i>	MC99-067	France	LT000094	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. aff. ustaloides</i>	CMMF003870	Quebec, Canada	MW628086	–	–	–	–	Landry et al. 2022
<i>T. vaccinum</i>	KUN-HKAS 138823	Xinjiang, China	PQ963155	–	–	–	–	this study
<i>T. vaccinum</i>	KUN-HKAS 138824	Xinjiang, China	PQ963154	–	–	–	–	this study
<i>T. vaccinum</i>	KUN-HKAS 87929	Yunnan, China	MW724328	MW729922	MW729795	MW730071	MW732258	Ding et al. 2023
<i>T. vaccinum</i>	KUN-HKAS 98037	Sichuan, China	MW724363	MW729957	MW729828	MW730101	MW732291	Ding et al. 2023
<i>T. vaccinum</i>	KUN-HKAS 98065	Sichuan, China	MW724364	MW729959	MW729830	MW730103	MW732293	Ding et al. 2023
<i>T. vaccinum</i>	MC95-109	Sweden	LT000195	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. vaccinum</i>	QFB31081	Quebec, Canada	MW628029	–	–	–	–	Landry et al. 2022
<i>T. vaccinum</i>	WTU-F-073050/SAT-10-309-01	WA, USA	MW597269	–	–	–	–	Trudell et al. 2022
<i>T. venenatoides</i>	WTU-F-073089 (Holotype)	USA	MW597303	–	–	–	–	Trudell & Parker 2021
<i>T. venenatum</i>	MK01140602	USA	MG719950	–	–	–	–	Ovrebo & Hughes 2018
<i>T. vernaticum</i>	KMS246	USA	AF377203	–	–	–	–	Bidartondo & Bruns 2002
<i>T. vernaticum</i>	SFSU-F-000420/HDT28816 (Holotype)	CA, USA	MN809561	–	–	–	–	Trudell et al. 2022
<i>T. virgatum</i>	CMMF024693	Canada	MW628081					Landry et al. 2022
<i>T. virgatum</i>	MC97-164 (Neotype)	Sweden	LT000197					Heilmann-Clausen et al. 2017
<i>T. virgatum</i>	KUN-HKAS 91176	Hubei, China	MW724368	MW729963	MW729834	–	MW732295	Ding et al. 2023
<i>T. virgatum</i>	KUN-HKAS 97078	Yunnan, China	MW724334	MW729928	MW729801	–	MW732264	Ding et al. 2023
<i>T. virgatum</i>	KUN-HKAS 93474	Yunnan, China	OK036724	–	–	–	–	Cui et al. 2022
<i>T. viridilutescens</i> type I	MC98-061	France	LT000095	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. viridilutescens</i> type I	MC98-080	France	LT000096	–	–	–	–	Heilmann-Clausen et al. 2017
<i>T. viridiolivaceum</i>	OTA:61887	New Zealand	JX178633	–	–	–	–	Teasdale et al. 2013
<i>T. xizangense</i>	KUN-HKAS 91028 (Holotype)	Xizang, China	MW724347	MW729941	MW729814	MW730088	–	Ding et al. 2023
<i>T. xizangense</i>	KUN-HKAS 152698	Xizang, China	PX992533	–	–	–	–	this study
<i>T. yunnanense</i>	KUN-HKAS 106583	Yunnan, China	MW724397	MW729992	MW729861	MW730130	MW732322	Ding et al. 2023
<i>T. yunnanense</i>	KUN-HKAS 106590	Yunnan, China	PQ963156	–	–	–	–	this study
<i>T. yunnanense</i>	KUN-HKAS 106610 (Holotype)	Yunnan, China	MW724401	MW729996	MW729865	MW730134	MW732325	Ding et al. 2023
<i>T. yunnanense</i>	KUN-HKAS 142044	Yunnan, China	PQ963157	–	–	–	–	this study
<i>Tricholoma</i> sp.	CMMF001838	Quebec, Canada	MW627897	–	–	–	–	Landry et al. 2022
<i>Tricholoma</i> sp.	CMMF003664	Quebec, Canada	MW628009	–	–	–	–	Landry et al. 2022

<i>Tricholoma</i> sp.	CMMF003845	Quebec, Canada	MW628109	–	–	–	–	Landry et al. 2022
<i>Tricholoma</i> sp.	QFB32611	Quebec, Canada	MW628072	–	–	–	–	Landry et al. 2022
<i>Tricholoma</i> sp.	UC-2023277/CA343	CA, USA	MW597252	–	–	–	–	Trudell et al. 2022
<i>Tricholoma</i> sp.	UC-2023278/CA389	USA,	MW597253	–	–	–	–	Trudell et al. 2022
<i>Tricholoma</i> sp.	UC-2023282/NS-22-IV-2014	CA, USA	MW597251	–	–	–	–	Trudell et al. 2022
<i>Tricholoma</i> sp. 2	KUN-HKAS 106317	Gansu, China	MW724456	MW730044	MW729898	MW730170	MW732367	Ding et al. 2023
<i>Tricholoma</i> sp. 2	KUN-HKAS 106318	Gansu, China	MW724457	MW730045	–	MW730171	MW732368	Ding et al. 2023
<i>Tricholoma</i> sp. 3	KUN-HKAS 101296	Yunnan, China	MW724446	MW730037	MW729894	MW730162	MW732360	Ding et al. 2023
Outgroups								
<i>Leucopaxillus laterarius</i>	KUN-HKAS 106319	Xinjiang, China	MW724394	MW729989	MW729858	MW730127	–	Ding et al. 2023
<i>Leucopaxillus tricolor</i>	MB-000946	Germany	MW724429	–	–	MW730155	MW732347	Ding et al. 2023