

Supplementary Table S2 Sequences used for the phylogenetic analysis of *Volvopluteus* based on ITS.

species	specimen	ITS	location
<i>Volvopluteus. asiaticus</i>	TNSF15191 TYPE	HM562206	Japan
<i>Vp. asiaticus</i>	LEF 332246	OP862868	Russia
<i>Vp. earlei</i>	MA22816	HM562204	Spain
<i>Vp. earlei</i>	TO AV133	HM246496	Italy
<i>Vp. earlei</i>	OKA TR649	MW033389	Türkiye
<i>Vp. earlei</i>	Mamet7	HM562205	Democratic Republic of the Congo
<i>Vp. earlei</i>	XJ1378	MW811445	China
<i>Vp. earlei</i>	XJ1379	MW811446	China
<i>Vp. michiganensis</i>	MICH11761 TYPE	NR119876	
<i>Vp. michiganensis</i>	LE 311991	MK049912	Russia
<i>Vp. michiganensis</i>	Smith32 590	HM562195	USA
<i>Vp. michiganensis</i>	UBC F 32158	MF954699	Canada
<i>Vp. michiganensis</i>	HMJAU57043	MW242664	China
<i>Vp. michiganensis</i>	HMJAU57045	MW242665	China
<i>Vp. michiganensis</i>	HMJAU57046	MW242668	China
<i>Vp. michiganensis</i>	HMJAU57048	MW242669	China
<i>Vp. gloiocephalus</i>	TO AV136	HM246495	Italy
<i>Vp. gloiocephalus</i>	OKA TR659	MW033399	Türkiye
<i>Vp. gloiocephalus</i>	AJ239	HM562202	Spain
<i>Vp. gloiocephalus</i>	AFTOL ID 890	DQ494701	USA
<i>Vp. gloiocephalus</i>	PDD 103792	MN738645	NewZealand
<i>Vp. gloiocephalus</i>	LOU18619	HM562207	Portugal
<i>Vp. deliciosus</i>	GDGM74751	MK944280	China
<i>Vp. deliciosus</i>	GDGM73195_TYPE	MK944281	China
<i>Vp. canalipes</i>	UES10301	MW743282	Mexico
<i>Vp. sp</i>	AG97	PV588613	Pakistan
<i>Vp. sp</i>	AG32	PV588612	Pakistan
<i>Vp. sp</i>	XJ1457	OR125621	China
<i>Vp. sp</i>	XJ1441	OR125620	China
<i>Vp. sp</i>	XJ1420	OR125619	China
<i>Vp. yunnanensis</i>	SH41 2024a	PQ809775	China
<i>Vp. yunnanensis</i>	SH41 2024b	PQ764862	China
<i>Vp. longipes</i>	HKAS135865	PQ451544	China
<i>Vp. longipes</i>	HKAS135864	PQ451543	China
<i>Vp. longipes</i>	HKAS135863	PQ451542	China
<i>Vp. platensis</i>	HKAS135867	PQ451546	China
<i>Vp. platensis</i>	HKAS135866	PQ451545	China
<i>Vp. gloiocephalus</i>	HKAS71087	PQ283957	China
<i>Vp. gloiocephalus</i>	HKAS82935	PQ283962	China
<i>Vp. gloiocephalus</i>	HKAS90369	PQ283964	China
<i>Vp. gloiocephalus</i>	HKAS82836	PQ283939	China
<i>Vp. platensis</i>	HKAS127528	PZ103590	China
<i>Vp. gloiocephalus</i>	HKAS127781	PQ283945	China
<i>Vp. gloiocephalus</i>	HKAS133862	PQ283949	China
<i>Vp. earlei</i>	HKAS133863	PQ283953	China
<i>Vp. yunnanensis</i>	HKAS150905	PZ103591	China
<i>Vp. yunnanensis</i>	HKAS151182	PZ103592	China
<i>Vp. asiaticus</i>	HKAS151185	PZ103593	China
<i>Vp. asiaticus</i>	TNSF15191 TYPE	PQ283970	Japan
<i>Vp. striatellus</i>	BJTC FM2151	PX115610	China
<i>Vp. striatellus</i>	BJTC FM2826 TYPE	PX115611	China
<i>Pluteus cervinus</i>	HKAS104344	PX642608	Germany