

Supplementary Table S3 Bayesian posterior probability support probability inferred by Bayesian Phylogenetics & Phylogeography (BPP) for species independence within the genus *Pluteus*. * indicates that the species includes sequences from type material. Bold indicates new species described in this study.

Sect	Taxon	i	ii	iii	iv
Pluteus	<i>P. cervinus</i> *		1	1	1
Celluloderma	<i>P. phlebophorus</i>		1	1	1
Celluloderma	<i>P. squarrosus</i> *		1	1	1
Celluloderma	<i>P. eliae</i>		1	1	0.99998
Celluloderma	<i>P. phlebofuscus</i>		1	1	1
Celluloderma	<i>P. rugosidiscus</i>		1	1	1
Celluloderma	<i>P. chrysophlebius</i>		1	1	1
Celluloderma	<i>P. brunneodiscus</i> *		1	1	1
Celluloderma	<i>P. iguazuensis</i>		1	1	1
Celluloderma	<i>P. aurantiorugosus</i>		1	1	1
Celluloderma	<i>P. aurantioruber</i> *		1	1	1
Celluloderma	<i>P. halonatus</i>		1	1	1
Celluloderma	<i>P. hirtellus</i> *		1	1	1
Celluloderma	<i>P. horakianus</i> *		1	1	1
Celluloderma	<i>P. calidophilus</i>*		1	1	1
Celluloderma	<i>P. flavostipitatus</i> *		1	1	1
Celluloderma	<i>P. fuscodiscus</i> *		1	1	1
Celluloderma	<i>P. insidiosus</i>		1	1	1
Celluloderma	<i>P. farensis</i> *		1	1	1
Celluloderma	<i>P. atroreticulatus</i>*		1	1	1
Celluloderma	<i>P. asperulus</i>*		1	1	1
Celluloderma	<i>P. ephebeus</i>		1	1	1
Celluloderma	<i>P. brunneosquamulosus</i> *		1	1	0.99998
Celluloderma	<i>P. doulianus</i>*		1	1	1
Celluloderma	<i>P. brunneoalbus</i> *		1	1	1
Celluloderma	<i>P. sp3</i>		1	1	1
Celluloderma	<i>P. hispidulopsis</i> *		1	1	1
Celluloderma	<i>P. daqinggouensis</i> *		1	1	1
Celluloderma	<i>P. paucicystidiatus</i> *		1	1	1
Celluloderma	<i>P. sp1</i>		1	1	1
Celluloderma	<i>P. lalepiorum</i> *		1	1	1
Celluloderma	<i>P. nanus</i>		1	1	1
Celluloderma	<i>P. romellii</i> *		1	1	1
Celluloderma	<i>P. anatolicus</i> *		1	1	1
Celluloderma	<i>P. chimminiensis</i> *		1	1	1
Celluloderma	<i>P. liaoheensis</i> *		1	1	1
Celluloderma	<i>P. castaneorugosus</i> *		1	1	1
Celluloderma	<i>P. pseudoinsidiosus</i> *		1	1	1
Celluloderma	<i>P. lucidus</i> *		1	1	1
Celluloderma	<i>P. chandrasrikuliae</i> *		1	1	1
Celluloderma	<i>P. assimilatus</i> *		1	1	1
Celluloderma	<i>P. squamulososulcatus</i> *		1	1	1
Celluloderma	<i>P. thomsonii</i>		1	1	1
Celluloderma	<i>P. fuscipruinatus</i> *		1	1	1
Celluloderma	<i>P. aff. argentinensis</i>		1	1	1
Celluloderma	<i>P. karstedtia</i> *		1	1	1
Celluloderma	<i>P. aesontiensis</i> *	0.99997		1	0.99988
Celluloderma	<i>P. vellingae</i> *	0.99996		1	1
Celluloderma	<i>P. podospilloides</i> *	0.99995		1	1
Celluloderma	<i>P. sp2</i>	0.99995		1	1

Celluloderma	<i>P. podospileus</i>	0.99926	1	1
Celluloderma	<i>P. cystidiosus</i> *	0.99926	1	1
Celluloderma	<i>P. sternbergii</i> *	0.99845	0.99993	0.99963
Celluloderma	<i>P. pallescens</i>	0.99825	1	1
Celluloderma	<i>P. cinereofuscus</i>	0.99818	0.99993	0.99975
Celluloderma	<i>P. eludens</i> *	0.99748	1	1
Celluloderma	<i>P. ludwigii</i> *	0.99536	1	0.99992
Celluloderma	<i>P. tenebromarginatus</i> *	0.99341	1	0.99992
Celluloderma	<i>P. parvisporus</i>	0.98812	1	1
Celluloderma	<i>P. fulvibadius</i>	0.9819	1	0.99999
Celluloderma	<i>P. austrofulvus</i> *	0.97287	1	0.99999
Celluloderma	<i>P. fuscopunctatus</i> *	0.90564	0.99978	0.99896
Celluloderma	<i>P. fenlzii</i>	0.89189	0.99994	0.99975
Celluloderma	<i>P. mammillatus</i>	0.89189	0.99994	0.99975
Hispidoderma	<i>P. roseipes</i>	1	1	1
Hispidoderma	<i>P. punctatus</i>	1	1	1
Hispidoderma	<i>P. conizatus</i>	1	1	1
Hispidoderma	<i>P. longistriatus</i>	1	1	1
Hispidoderma	<i>P. lauracearum</i> *	1	1	1
Hispidoderma	<i>P. albivillus</i> *	1	1	1
Hispidoderma	<i>P. atroflavipes</i>*	1	1	1
Hispidoderma	<i>P. cf. velutinus</i>	1	1	1
Hispidoderma	<i>P. umbrosus</i>	1	1	1
Hispidoderma	<i>P. thomensis</i> *	1	1	1
Hispidoderma	<i>P. flavofulgineus</i> *	1	1	1
Hispidoderma	<i>P. velutinus</i>	1	1	1
Hispidoderma	<i>P. subroseus</i> *	1	1	1
Hispidoderma	<i>P. umbrosoides</i> *	1	1	1
Hispidoderma	<i>P. tenuipileus</i> *	1	0.99073	1
Hispidoderma	<i>P. ornatus</i> *	1	1	0.999
Hispidoderma	<i>P. baishanzuensis</i> *	1	1	1
Hispidoderma	<i>P. aureus</i> *	1	1	1
Hispidoderma	<i>P. variabilicolor</i> *	1	1	1
Hispidoderma	<i>P. neochrysaegis</i>	1	1	1
Hispidoderma	<i>P. semibulbosus</i>	1	0.99073	1
Hispidoderma	<i>P. costatus</i> *	1	1	1
Hispidoderma	<i>P. chrysaegis</i>	1	1	1
Hispidoderma	<i>P. hesperius</i> *	0.99999	1	0.99994
Hispidoderma	<i>P. sp</i>	0.99994	1	0.996
Hispidoderma	<i>P. pallidosquamulosus</i> *	0.99994	1	1
Hispidoderma	<i>P. ussuriensis</i> *	0.9998	1	0.999
Hispidoderma	<i>P. leoninus</i> *	0.99966	1	0.99994
Hispidoderma	<i>P. pumae</i> *	0.99966	1	0.99994
Hispidoderma	<i>P. hinnuleus</i> *	0.99962	1	0.995
Hispidoderma	<i>P. hengduanensis</i>*	0.99944	1	0.999
Hispidoderma	<i>P. piceicola</i> *	0.99944	1	0.999
Hispidoderma	<i>P. ultraputripiceae</i> *	0.99939	1	1
Hispidoderma	<i>P. dianae</i> *	0.99917	1	1
Hispidoderma	<i>P. heteromarginatus</i>	0.99678	1	1
Hispidoderma	<i>P. pulcherrimus</i> *	0.99678	1	1
Hispidoderma	<i>P. ochraceoleoninus</i> *	0.99187	1	0.997
Hispidoderma	<i>P. croceus</i> *	0.99167	1	0.998
Hispidoderma	<i>P. granularis</i>	0.97318	0.99994	0.997
Hispidoderma	<i>P. aff. umbrosus</i>	0.97318	0.99994	0.997
Hispidoderma	<i>P. insularis</i> *	0.96069	0.9998	0.998

Hispidoderma	<i>P. favrei*</i>	0.96068	0.9998	0.998	0.99868
Hispidoderma	<i>P. hubregtseorum*</i>	0.94781	0.99989	1	0.99974
Hispidoderma	<i>P. jilinensis*</i>	0.32822	0.97737	0.843	0.88405
Hispidoderma	<i>P. spaniophyllus*</i>	0.32822	0.97737	0.843	0.88405
Pluteus	<i>P. hongoi</i>	1	1		1
Pluteus	<i>P. concentricus</i>	1	1		1
Pluteus	<i>P. xylophilus</i>	1	1		1
Pluteus	<i>P. leucoborealis*</i>	1	1		1
Pluteus	<i>P. spegazzinianus</i>	1	1		1
Pluteus	<i>P. eos*</i>	1	1		1
Pluteus	<i>P. sandalioticus</i>	1	1		1
Pluteus	<i>P. griseostriatus*</i>	1	1		1
Pluteus	<i>P. purpureofuscus*</i>	1	1		1
Pluteus	<i>P. aff. pouzarianus1</i>	1	1		1
Pluteus	<i>P. elaphinus*</i>	1	1		1
Pluteus	<i>P. conformis*</i>	1	1		1
Pluteus	<i>P. puttemansii*</i>	1	1		1
Pluteus	<i>P. atropungens</i>	1	0.9367		0.62486
Pluteus	<i>P. saupei*</i>	1	1		1
Pluteus	<i>P. aff. pouzarianus2</i>	1	1		1
Pluteus	<i>P. nigrinus*</i>	1	1		1
Pluteus	<i>P. laricinus</i>	1	0.9367		0.62486
Pluteus	<i>P. petasatus</i>	1	1		1
Pluteus	<i>P. olivaceofibrillosus*</i>	1	1		1
Pluteus	<i>P. griseodiscus*</i>	1	1		1
Pluteus	<i>P. losulus</i>	1	1		1
Pluteus	<i>P. pellitus</i>	1	1		1
Pluteus	<i>P. cervinus*</i>	1	1		1
Pluteus	<i>P. alniphilus*</i>	0.99998	1		1
Pluteus	<i>P. primus*</i>	0.99996	1		1
Pluteus	<i>P. atromarginatus</i>	0.99996	1		1
Pluteus	<i>P. thoenii*</i>	0.99993	1		1
Pluteus	<i>P. exilis*</i>	0.99991	1		1
Pluteus	<i>P. rangifer*</i>	0.99991	1		1
Pluteus	<i>P. pouzarianus*</i>	0.99988	1		1
Pluteus	<i>P. orestes*</i>	0.99985	1		1
Pluteus	<i>P. hibbettii*</i>	0.99961	1		1
Pluteus	<i>P. brunneidiscus*</i>	0.9996	1		1
Pluteus	<i>P. methvenii*</i>	0.99956	1		1
Pluteus	<i>P. oreibatus*</i>	0.99908	1		1
Pluteus	<i>P. sepiicolor*</i>	0.99728	0.99979		0.99841
Pluteus	<i>P. fumidus*</i>	0.99636	0.99979		0.99841
Pluteus	<i>P. arizonicus*</i>	0.99542	1		1
Pluteus	<i>P. atrofibrillosus*</i>	0.98549	1		1
Pluteus	<i>P. similis</i>	0.98545	1		1
Pluteus	<i>P. kovalenkoi*</i>	0.98521	1		0.99999
Pluteus	<i>P. shikae*</i>	0.98439	1		0.99999
Pluteus	<i>P. izurun*</i>	0.96673	1		1
Pluteus	<i>P. meridionalis*</i>	0.9579	1		1
Pluteus	<i>P. americanus*</i>	0.94236	0.99528		0.93717
Pluteus	<i>P. salicinus</i>	0.94236	0.99528		0.93717
Pluteus	<i>P. padanilus*</i>	0.94083	0.99969		0.99653
Pluteus	<i>P. glaucotinctus</i>	0.93623	0.99969		0.99653
<i>Pruinoderma</i>	<i>P. poliocnemis</i>	1	1		1