

Table S1: Taxon sampling (A. *Peltigera* section *Polydactylon*; B. *Peltigera*, other sections; C. other genera) with associated voucher information or published source; and corresponding sequences used in this study, and, when applicable, the cyanobiont *rbcLX* haplotype or phylogroup that the specified mycobiont sample associates with. XXXX indicate newly generated sequences, whereas GB identification numbers refer to published sequences. For *rbcLX* sequences of cyanobionts, the genus and species names of the mycobiont, which it associates with, are provided, when available. When free living or of unknown source, the name of the cyanobiont is provided. Asterisks refer to sequences resulting from collapsing of Nostoc sequences associating with several species in ?. In theses cases, we provide the identity of the species of the sequence we used, but not all the other species that associate with this haplotype. For the complete set of species, see Fig. 4 and ?.

Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EF72.1</i>	<i>rbcLX</i>	<i>rbcLX</i> phylogroup or haplotype
A. <i>Peltigera</i> section <i>Polydactylon</i>									
<i>P. dolichorhiza</i>	P894	Bolivia; M. Kukwa 9232; UGDA-17709	XXXX	–	–	–	–	XXXX	HT33
<i>P. dolichorhiza</i>	P29	Costa Rica; J. Miadlikowska et al. s.n.; DUKE	XXXX	–	–	–	–	XXXX	HT42
<i>P. dolichorhiza</i>	P893	Bolivia; M. Kukwa 9740; UGDA-17730	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	V
<i>P. dolichorhiza</i>	N999	Reunion Island; N. Magain & E. Sérusiaux s.n.; LG	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XIX
<i>P. dolichorhiza</i>	P28	Costa Rica; J. Miadlikowska et al. s.n.; DUKE	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XIXa
<i>P. dolichorhiza</i>	P348	Mexico; M. A. Herrera-Campos 13382; MEXU	XXXX	666666866	666667205	666666969	666667081	XXXX	XIXb
<i>P. dolichorhiza</i>	P879	Rwanda E. Sérusiaux PA7; LG	XXXX	–	–	–	–	XXXX	XIXb
<i>P. dolichorhiza</i>	N1942	Panama; B. Goffinet 753; CONN	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XIXc
<i>P. dolichorhiza</i>	P1574	Brazil, Minas Gerais; J. Miadlikowska et al. s.n.; CGMS-34450	XXXX	–	–	–	–	XXXX	XIXd
<i>P. dolichorhiza</i>	P355	Mexico; M. A. Herrera-Campos 135; MEXU	XXXX	–	–	–	–	XXXX	XIXd
<i>P. dolichorhiza</i>	P1596	Brazil, Minas Gerais; J. Miadlikowska et al. s.n.; CGMS-34453	XXXX	XXXX	XXXX	XXXX	XXXX	–	N/A

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Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EFT2.1</i>	<i>rbcLX</i>	<i>rbcLX</i> phylogroup or haplotype
<i>P. dolichorhiza</i> 2	P1567	Brazil, Minas Gerais; J. Miadlikowska et al. s.n.; CGMS-34530	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XIXc
<i>P. dolichorhiza</i> 2	P1575	Brazil, Minas Gerais; J. Miadlikowska et al. s.n.; CGMS-34456	XXXX	–	–	–	–	XXXX	XIXd
<i>P. "hawaiiensis"</i>	P1236	USA, Hawaii; B. McCune 22196; McCune Private Coll.	XXXX	XXXX	–	XXXX	–	XXXX	XIX
<i>P. hymenina</i>	P430	Canada, Newfoundland; J. Lendemer 10397; H	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	VIIIb
<i>P. hymenina</i>	N357	Spain, Tenerife; E. Sérusiaux s.n.; LG	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XIXb
<i>P. hymenina</i>	N2054	Norway; H. Bratli 4604; O-65885	XXXX	–	–	–	–	XXXX	XVI
<i>P. hymenina</i>	P1214	USA, Oregon; D. Kofranek 3729; McCune Private Coll.	XXXX	–	–	–	–	XXXX	XVI
<i>P. hymenina</i>	P1226	USA, Oregon; B. McCune 26281; McCune Private Coll.	XXXX	–	–	–	–	XXXX	XVI
<i>P. hymenina</i>	P516	Portugal, Azores; E. Sérusiaux s.n.; LG	XXXX	XXXX	XXXX	–	XXXX	XXXX	XVI
<i>P. hymenina</i>	P517	Portugal, Azores; E. Sérusiaux s.n.; LG	XXXX	–	–	–	–	XXXX	XVI
<i>P. hymenina</i>	P539	Norway; N. Magain s.n.; LG	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XVI
<i>P. hymenina</i>	P7	Iceland; J. Miadlikowska et al. s.n. 12540; DUKE	XXXX	–	–	–	–	XXXX	XVI
<i>P. hymenina</i>	P80	Iceland; T. Ahlti 69347; H	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XVI
<i>P. hymenina</i>	P851	Iceland; H. G. Kristinsson 48978; AMNH-28943	XXXX	–	–	–	–	XXXX	XVI
<i>P. hymenina</i>	P870	Denmark; V. Alstrup s.n.; H	XXXX	–	–	–	–	XXXX	XVI

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Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EFT2.1</i>	<i>rbcLX</i>	<i>rbcLX</i> phylogroup or haplotype
<i>P. hymenina</i>	P871	Portugal, Azores; F. Rodrigues 0106/2010-66; B-600173049	XXXX	–	–	–	–	XXXX	XVI
<i>P. hymenina</i>	P872	Portugal, Azores; F. Rodrigues 0106/2010-67; B-600173186	XXXX	–	–	–	–	XXXX	XVI
<i>P. hymenina</i>	P1229	USA, Oregon; B. McCune 30448; McCune Private Coll.	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XVII
<i>P. hymenina</i>	P1247	Canada, British Columbia; C. Björk 17053; UBC	XXXX	–	–	–	–	XXXX	XVII
<i>P. hymenina</i>	P1799	Portugal, Azores; D. Upreti 6915a; MAF	XXXX	XXXX	XXXX	XXXX	XXXX	–	N/A
<i>P. hymenina</i>	P1903	Portugal, Azores; D. Upreti 6916a; MAF	XXXX	XXXX	XXXX	XXXX	–	–	N/A
<i>P. macra</i>	P416	Philippines; L. A. Ejem; H	XXXX	–	–	–	–	XXXX	XII
<i>P. melanorrhiza</i>	P515	Portugal, Azores; E. Sérusiaux s.n.; LG	XXXX	XXXX	XXXX	–	XXXX	XXXX	XVI
<i>P. melanorrhiza</i>	P1798	Portugal, Azores; D. Upreti 6918b; MAF	XXXX	XXXX	XXXX	XXXX	XXXX	–	N/A
<i>P. nana</i> 1	P1281	China, Yunnan; J. Miadlikowska s.n.; DUKE	XXXX	XXXX	XXXX	–	–	XXXX	HT45
<i>P. nana</i> 1	P1666	Japan, Kochi; G. Thor 21255; UPS-383534	XXXX	XXXX	XXXX	–	–	XXXX	VIIc
<i>P. nana</i> 1	P1282	China, Yunnan; J. Miadlikowska s.n.; DUKE	XXXX	–	–	–	–	XXXX	XII
<i>P. nana</i> 1	P1665	China, Sichuan; N. Gustavsson 10; UPS-509502	XXXX	XXXX	XXXX	–	–	XXXX	XII
<i>P. nana</i> 1	P1290	China, Yunnan; J. Miadlikowska s.n.; DUKE	XXXX	XXXX	XXXX	–	–	–	N/A
<i>P. nana</i> 2	P609	New Zealand; S. Stenroos 6037; H	XXXX	XXXX	XXXX	–	XXXX	XXXX	HT37
<i>P. neopolydactyla</i>	GB	Canada, British Columbia; O'Brien et al. 2013						455476535	HT24

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Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EFT2.1</i>	<i>rbcLX</i>	<i>rbcLX</i> phylogroup or haplotype
<i>P. neopolydactyla</i>	GB	USA; O'Brien et al. 2005						82470991	VIIa
<i>P. neopolydactyla</i>	GB	Finland; Steenroos et al. 2006						82779968	VIIa
<i>P. neopolydactyla</i>	GB	Canada, Québec; O'Brien et al. 2013						455476637	VIIa
<i>P. neopolydactyla</i>	GB	Canada, Québec; O'Brien et al. 2013						455476631	XIa
<i>P. neopolydactyla</i>	GB	Finland; Myllys et al. 2007						119690877	XIII
<i>P. neopolydactyla</i>	GB	China; O'Brien et al. 2013						455476643	N/A
<i>P. neopolydactyla</i>	GB	China; O'Brien et al. 2013						455476649	X
<i>P. neopolydactyla</i>	GB	Finland; Myllys et al. 2007						119690880	N/A
<i>P. neopolydactyla</i> 1	P67	USA, North Carolina; J. Hollinger 2732; DUKE	XXXX	–	–	–	–	XXXX	VIIb
<i>P. neopolydactyla</i> 1	N1944	USA, Alaska; B. Goffinet 9424; CONN	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	VIIa
<i>P. neopolydactyla</i> 1	P309	Canada, Québec; J. Miadlikowska et al. s.n.; DUKE	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	VIIa
<i>P. neopolydactyla</i> 1	P411	Russia, Yakutia; T. Ahti 65064; H	XXXX	XXXX	XXXX	XXXX	–	XXXX	VIIa
<i>P. neopolydactyla</i> 1	P844	Norway; N. Magain s.n.; LG	XXXX	–	–	–	–	XXXX	VIIa
<i>P. neopolydactyla</i> 1	P845	Norway; N. Magain s.n.; LG	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	VIIa
<i>P. neopolydactyla</i> 1	N1939	USA, Alabama; B. Goffinet 5209; DUKE	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	VIIb
<i>P. neopolydactyla</i> 1	P640	USA, North Carolina; J. Miadlikowska et al. s.n.; DUKE	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	VIIb
<i>P. neopolydactyla</i> 1	P645	USA, North Carolina; J. Miadlikowska et al. s.n.; DUKE	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	VIIb

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Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EFT2.1</i>	<i>rbcLX</i>	<i>rbcLX</i> phylogroup or haplotype
<i>P. neopolydactyla</i> 1	P1252	USA, Arizona; J. Hollinger 1781; UBC	XXXX	XXXX	XXXX	XXXX	–	XXXX	VIIIc
<i>P. neopolydactyla</i> 1b	P325	Peru; E. Gaya 07.14.10-19; DUKE	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	VIIIb
<i>P. neopolydactyla</i> 2	N1913	China, Yunnan; B. Goffinet 10122; CONN	XXXX	–	–	–	–	XXXX	X
<i>P. neopolydactyla</i> 2	N1914	China, Yunnan; B. Goffinet 10125; CONN	XXXX	–	–	–	–	XXXX	X
<i>P. neopolydactyla</i> 2	N1916	China, Yunnan; B. Goffinet 10126; CONN	XXXX	–	–	–	–	XXXX	X
<i>P. neopolydactyla</i> 2	N1926	China, Yunnan; B. Goffinet 10128; CONN	XXXX	–	–	–	–	XXXX	X
<i>P. neopolydactyla</i> 2	N1927	China, Yunnan; B. Goffinet 10127; CONN	XXXX	–	–	–	–	XXXX	X
<i>P. neopolydactyla</i> 2	N1929	China, Yunnan; B. Goffinet 10120; CONN	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	X
<i>P. neopolydactyla</i> 2	P1183	Japan, Hokkaido; G. Thor 25759; UPS-552780	XXXX	–	–	–	–	XXXX	XIII
<i>P. neopolydactyla</i> 2	P1322	Norway; N. Magain s.n.; LG	XXXX	–	–	–	–	XXXX	XIII
<i>P. neopolydactyla</i> 2	P384	Norway; N. Magain s.n.; LG	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XIII
<i>P. neopolydactyla</i> 2	P386	Norway; N. Magain s.n.; LG	XXXX	–	–	–	–	XXXX	XIII
<i>P. neopolydactyla</i> 2	P821	Norway; N. Magain s.n.; LG	XXXX	–	–	–	–	XXXX	XIII
<i>P. neopolydactyla</i> 2	P846	Norway; N. Magain s.n.; LG	XXXX	–	–	–	–	XXXX	XIII
<i>P. neopolydactyla</i> 2	P1291	China, Yunnan; J. Miadlikowska et al. s.n.; DUKE	XXXX	XXXX	–	XXXX	–	–	N/A
<i>P. neopolydactyla</i> 2	P1659	Japan, Hokkaido; G. Thor 25720; UPS-519479	XXXX	XXXX	XXXX	XXXX	–	–	N/A

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Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EFT2.1</i>	<i>rbcLX</i>	<i>rbcLX</i> phylogroup or haplotype
<i>P. neopolydactyla</i> 2	P1662	Japan, Hokkaido; A. Frisch 10/Jp410; UPS-522008	XXXX	XXXX	XXXX	XXXX	–	–	N/A
<i>P. neopolydactyla</i> 2	P1667	Japan, Kochi; G. Thor 2127x; UPS-164500	XXXX	XXXX	XXXX	XXXX	–	–	N/A
<i>P. neopolydactyla</i> 2	P1760	Japan, Hokkaido; G. Thor 14656; UPS-166427	XXXX	XXXX	–	XXXX	–	–	N/A
<i>P. neopolydactyla</i> 2	P390	Norway; N. Magain s.n.; LG	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	N/A
<i>P. neopolydactyla</i> 3	P859	Vietnam; Vo T. P. G. G06-NL86B; B-600144665	XXXX	XXXX	XXXX	XXXX	–	XXXX	VIIb
<i>P. neopolydactyla</i> 3	P1283	China, Yunnan; J. Miadlikowska et al. s.n.; DUKE	XXXX	–	–	–	–	XXXX	X
<i>P. neopolydactyla</i> 4	P1628	USA, Maine; W. R. Buck 54962; NY-01105128	XXXX	–	–	–	–	XXXX	IV
<i>P. neopolydactyla</i> 4	P1668	Japan, Hokkaido; G. Thor 24306; UPS-519471	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	IV
<i>P. neopolydactyla</i> 4	P1675	Japan, Hokkaido; G. Thor 24336; UPS-519493	XXXX	–	–	–	–	XXXX	IV
<i>P. neopolydactyla</i> 4	P302	Canada, Québec; F. Lutzoni et al. s.n.; DUKE	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	IV
<i>P. neopolydactyla</i> 4	P321	Canada, Québec; F. Lutzoni et al. s.n.; DUKE	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	IV
<i>P. neopolydactyla</i> 4	P591	Norway; N. Magain s.n.; LG	XXXX	–	–	–	–	XXXX	IV
<i>P. neopolydactyla</i> 4	P811	Norway; N. Magain s.n.; LG	XXXX	–	–	–	–	XXXX	IV
<i>P. neopolydactyla</i> 4	P1212	Norway; N. Magain s.n.; LG	XXXX	XXXX	XXXX	–	XXXX	XXXX	XIa
<i>P. neopolydactyla</i> 4	P506	Norway; N. Magain s.n.; LG	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XIa
<i>P. neopolydactyla</i> 4	P669	Norway; N. Magain s.n.; LG	XXXX	–	–	–	–	XXXX	XIa

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Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EFT2.1</i>	<i>rbcLX</i>	<i>rbcLX</i> phylogroup or haplotype
<i>P. neopolydactyla</i> 5	P1228	USA, Oregon; B. McCune 30018; McCune Private Coll.	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XIb
<i>P. neopolydactyla</i> 5	P1232	USA, Oregon; B. McCune 26873; McCune Private Coll.	XXXX	XXXX	–	XXXX	–	XXXX	XIb
<i>P. neopolydactyla</i> 5	P1257	USA, Oregon; J. Hollinger 1385; UBC	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XIb
<i>P. neopolydactyla</i> 5	P1677	USA, Oregon; B. McCune 26977; McCune Private Coll.	XXXX	–	–	–	–	XXXX	XIb
<i>P. neopolydactyla</i> 6	P1223	USA, Oregon; McCune Private Coll.	XXXX	–	–	–	–	XXXX	XIII
<i>P. neopolydactyla</i> 6	P1231	USA, Oregon; B. McCune 24160; McCune Private Coll.	XXXX	XXXX	XXXX	XXXX	–	XXXX	XIII
<i>P. neopolydactyla</i> 6	N1886	USA, Oregon; B. Goffinet 8056; CONN	XXXX	–	–	–	–	XXXX	XVII
<i>P. neopolydactyla</i> 6	N1888	USA, Oregon; B. Goffinet 8049; CONN	XXXX	–	–	–	–	XXXX	XVII
<i>P. neopolydactyla</i> 6	P1258	Canada, British Columbia; C. Björk 17289; UBC	XXXX	–	–	–	–	XXXX	XVII
<i>P. occidentalis</i>	P108	Canada, Québec; F. Lutzoni et al. s.n.; DUKE	XXXX	–	–	–	–	XXXX	VIIa
<i>P. occidentalis</i>	P299	Canada, Québec; F. Lutzoni et al. s.n.; DUKE	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	VIIa
<i>P. occidentalis</i>	P314	Canada, Québec; F. Lutzoni et al. s.n.; DUKE	XXXX	–	–	–	–	XXXX	VIIa
<i>P. occidentalis</i>	P410	Russia, Siberia; T. N. Ottyukova s.n.; H	XXXX	–	–	–	–	XXXX	VIIa
<i>P. occidentalis</i>	P543	Norway; N. Magain s.n.; LG	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	VIIa
<i>P. occidentalis</i>	P571	Norway; N. Magain s.n.; LG	XXXX	–	–	–	–	XXXX	VIIa

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Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EFT2.1</i>	<i>rbcLX</i>	<i>rbcLX</i> phylogroup or haplotype
<i>P. occidentalis</i>	P853	USA, Alaska; T. Ahti 63310; H	XXXX	–	–	–	–	XXXX	VIIa
<i>P. occidentalis</i>	P1638	USA, North Carolina; Richard C. Harris 52559; NY	XXXX	–	–	–	–	XXXX	VIIb
<i>P. occidentalis</i>	P510	Norway; N. Magain s.n.; LG	XXXX	XXXX	XXXX	–	XXXX	–	N/A
<i>P. occidentalis</i>	P521	Norway; N. Magain s.n.; LG	XXXX	XXXX	XXXX	–	XXXX	–	N/A
<i>P. occidentalis</i>	P866	USA, Alaska; T. Ahti 63231; H	XXXX	XXXX	XXXX	XXXX	XXXX	–	N/A
<i>P. oceanica</i>	P882	Papua New Guinea; E. Sérusiaux s.n.; LG	XXXX	XXXX	–	–	–	–	N/A
<i>P. pacifica</i>	P1240	Canada, British Columbia; T. Goward 06-23; UBC	XXXX	–	–	–	–	XXXX	XIII
<i>P. pacifica</i>	P1241	Canada, British Columbia; C. Björk 17500; UBC	XXXX	–	–	–	–	XXXX	XIII
<i>P. pacifica</i>	P1242	Canada, British Columbia; T. Goward 06-1133; UBC	XXXX	–	–	–	–	XXXX	XIII
<i>P. pacifica</i>	P1243	Canada, British Columbia; T. Goward 06-1522; UBC	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XIII
<i>P. pacifica</i>	P443	Canada, British Columbia; O. Vitikainen 13080; H	XXXX	6666666883	666667207	666666975	666667085	–	N/A
<i>P. polydactylon</i>	N2069	Norway; J. Holtan-Hartwig 528; O	XXXX	XXXX	XXXX	XXXX	–	XXXX	V
<i>P. polydactylon</i>	P1213	Norway; N. Magain s.n.; LG	XXXX	–	–	–	–	XXXX	V
<i>P. polydactylon</i>	P1235	USA, Alaska; B. McCune 26434; McCune Private Coll.	XXXX	–	–	–	–	XXXX	V
<i>P. polydactylon</i>	P385	Norway; N. Magain s.n.; LG	XXXX	666666886	666667319	666666971	666667083	XXXX	V
<i>P. polydactylon</i>	P388	Norway; N. Magain s.n.; LG	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	V

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<i>P. polydactylon</i>	P682	Norway; N. Magain s.n.; LG	XXXX	–	–	–	–	XXXX	V
<i>P. polydactylon</i>	P71	USA, New Mexico; Hollinger 2462; DUKE	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	V
<i>P. polydactylon</i>	P816	Norway; N. Magain s.n.; LG	XXXX	–	–	–	–	XXXX	V
<i>P. polydactylon</i>	P833	Norway; N. Magain s.n.; LG	XXXX	–	–	–	–	XXXX	V
<i>P. polydactylon</i>	P856	Iran; A. A. Maassoumi 573; B-600114374	XXXX	XXXX	–	XXXX	–	XXXX	V
<i>P. polydactylon</i>	P1234	USA, Montana; B. McCune 29108; McCune Private Coll.	XXXX	XXXX	XXXX	XXXX	–	–	N/A
<i>P. pulverulenta</i> 1	P890	Bolivia; M. Kukwa 8536; UGDA-17702	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	HT41
<i>P. pulverulenta</i> 1	P897	Mexico; M. A. Herrera-Campos 122; MEXU	XXXX	–	–	–	–	XXXX	XIX
<i>P. pulverulenta</i> 1	P1566	Brazil, Minas Gerais; J. Miadlikowska et al. s.n.; CGMS-34566	XXXX	–	–	–	–	XXXX	XIXb
<i>P. pulverulenta</i> 1	P1572	Brazil, Minas Gerais; J. Miadlikowska et al. s.n.; CGMS-34445	XXXX	–	–	–	–	XXXX	XIXb
<i>P. pulverulenta</i> 1	P928	Colombia; R. Lücking MPNNC214; UDBC	XXXX	–	–	–	–	XXXX	XV
<i>P. pulverulenta</i> 1	P901	Colombia; R. Lücking 33383; UDBC	XXXX	XXXX	XXXX	XXXX	–	–	N/A
<i>P. pulverulenta</i> 1	P938	Colombia; R. Lücking 33321; UDBC	XXXX	XXXX	XXXX	XXXX	–	–	N/A
<i>P. pulverulenta</i> 1	P945	Colombia; R. Lücking 33691; UDBC	XXXX	XXXX	XXXX	XXXX	XXXX	–	N/A
<i>P. pulverulenta</i> 2	P1521	Colombia; R. Lücking 34028; UDBC	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XIXa
<i>P. pulverulenta</i> 2	P900	Colombia; R. Lücking 33367; UDBC	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XIXa

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Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EFT2.1</i>	<i>rbcLX</i>	<i>rbcLX</i> phylogroup or haplotype
<i>P. pulverulenta</i> 3	P1522	Colombia; R. Lücking 34033; UDBC	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	HT34
<i>P. scabrosa</i> 1	P1210	Norway; N. Magain s.n.; LG	XXXX	XXXX	XXXX	XXXX	–	XXXX	VIIa
<i>P. scabrosa</i> 1	P1250	Canada, Alberta; Hollinger 1066; UBC	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	VIIa
<i>P. scabrosa</i> 1	P1539	Russia, Siberia; J. Miadlikowska et al. s.n.; DUKE	XXXX	–	–	–	–	XXXX	VIIa
<i>P. scabrosa</i> 1	P306	Canada, Québec; F. Lutzoni et al. s.n.; DUKE	XXXX	–	–	–	–	XXXX	VIIa
<i>P. scabrosa</i> 1	P311	Canada, Québec; F. Lutzoni et al. s.n.; DUKE	XXXX	–	–	–	–	XXXX	VIIa
<i>P. scabrosa</i> 1	P93	Canada, Québec; F. Lutzoni et al. s.n.; DUKE	XXXX	–	–	–	–	XXXX	VIIa
<i>P. scabrosa</i> 1	P97	Canada, Québec; F. Lutzoni et al. s.n.; DUKE	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	VIIa
<i>P. scabrosa</i> 1	P550	Norway; N. Magain s.n.; LG	XXXX	XXXX	XXXX	XXXX	XXXX	–	N/A
<i>P. scabrosa</i> 2	P1328	Canada, Nunavik; J. Gagnon; QFA-0594938	XXXX	–	–	–	–	XXXX	VIIId
<i>P. scabrosa</i> 2	P1721	Greenland; E. Sérusiaux s.n.; LG	XXXX	–	–	–	–	XXXX	VIIId
<i>P. scabrosa</i> 2	P107	Canada, Québec; F. Lutzoni et al. s.n.; DUKE	XXXX	666666890	666667197	666666913	666667075	XXXX	XIa
<i>P. scabrosa</i> 2	P113	Canada, Québec; F. Lutzoni et al. s.n.; DUKE	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XIa
<i>P. scabrosa</i> 2	P1209	Norway; N. Magain s.n.; LG	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XIa
<i>P. scabrosa</i> 2	P1255	Canada, BC; C. Björk 16230; UBC	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XIa
<i>P. scabrosa</i> 2	P1540	Russia, Siberia; J. Miadlikowska et al. s.n.; DUKE	XXXX	–	–	–	–	XXXX	XIa
<i>P. scabrosa</i> 2	P296	Canada, Québec; F. Lutzoni et al. s.n.; DUKE	XXXX	–	–	–	–	XXXX	XIa

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Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EFT2.1</i>	<i>rbcLX</i>	<i>rbcLX</i> phylogroup or haplotype
<i>P. scabrosa</i> 2	P520	Norway; N. Magain s.n.; LG	XXXX	–	–	–	–	XXXX	XIa
<i>P. scabrosa</i> 2	P617	Norway; N. Magain s.n.; LG	XXXX	–	–	–	–	XXXX	XIa
<i>P. scabrosa</i> 2	P830	Norway; N. Magain s.n.; LG	XXXX	–	–	–	–	XXXX	XIa
<i>P. scabrosa</i> 3	P865	Russia, Yakutia; T. Ahti 65068; H	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	VIIa
<i>P. scabrosa</i> 3	N1236	Greenland; E. Sérusiaux s.n.; LG	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	VIIc
<i>P. scabrosa</i> 3	P1536	Russia, Siberia; J. Miadlikowska et al. s.n.; DUKE	XXXX	–	–	–	–	XXXX	X
<i>P. scabrosa</i> 3	P1538	Russia, Siberia; J. Miadlikowska et al. s.n.; DUKE	XXXX	–	–	–	–	XXXX	X
<i>P. scabrosa</i> 4	P312	Canada, Québec; F. Lutzoni et al. s.n.; DUKE	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	VIIa
<i>P. scabrosa</i> 4	P315	Canada, Québec; F. Lutzoni et al. s.n.; DUKE	XXXX	XXXX	XXXX	XXXX	–	XXXX	VIIa
<i>P. scabrosa</i> 4	P318	Canada, Québec; F. Lutzoni et al. s.n.; DUKE	XXXX	–	–	–	–	XXXX	VIIa
<i>P. scabrosa</i> 4	P529	Norway; N. Magain s.n.; LG	XXXX	–	–	–	–	XXXX	VIIa
<i>P. scabrosa</i> 4	P549	Norway; N. Magain s.n.; LG	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	VIIa
<i>P. scabrosella</i>	P391	Norway; N. Magain s.n.; LG	XXXX	–	–	–	–	XXXX	XIa
<i>P. scabrosella</i>	P514	Norway; N. Magain s.n.; LG	XXXX	–	–	–	–	XXXX	XIa
<i>P. scabrosella</i>	P619	Norway; N. Magain s.n.; LG	XXXX	–	–	–	–	XXXX	XIa
<i>P. scabrosella</i>	P854	Greenland; E. S. Hansen; H-548	XXXX	–	–	–	–	XXXX	XIa
<i>P. scabrosella</i>	P536	Norway; N. Magain s.n.; LG	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	N/A

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Table S1 – continued from previous page

Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EFT2.1</i>	<i>rbcLX</i>	<i>rbcLX</i> phy-logroup or haplotype
<i>P. sp.</i>	N1750	Unknown; J. Santosh s.n.; J. Santosh Private Coll.	–	–	–	–	–	XXXX	HT39
<i>P. sp. 1</i>	P905	Colombia; R. Lücking 33334; UDBC	XXXX	–	–	–	–	XXXX	HT40
<i>P. sp. 1</i>	P889	Bolivia; M. Kukwa 9440; UGDA-17715	XXXX	–	–	–	–	XXXX	XIX
<i>P. sp. 1</i>	P885	Bolivia; M. Kukwa 9276; UGDA-17710	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XIXc
<i>P. sp. 1</i>	P886	Bolivia; M. Kukwa 9327; UGDA-17713	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XIXc
<i>P. sp. 1</i>	P909	Colombia; R. Lücking 33339; UDBC	XXXX	XXXX	–	XXXX	–	–	N/A
<i>P. sp. 2a</i>	P1555	Brazil, Minas Gerais; J. Miadlikowska et al. s.n.; CGMS-34544	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XIXb
<i>P. sp. 2a</i>	P1570	Brazil, Minas Gerais; J. Miadlikowska et al. s.n.; CGMS-34526	XXXX	–	–	–	–	XXXX	XIXb
<i>P. sp. 2a</i>	P907	Colombia; R. Lücking 33361; UDBC	XXXX	XXXX	XXXX	XXXX	–	XXXX	XV
<i>P. sp. 2b</i>	P1561	Brazil, Minas Gerais; J. Miadlikowska et al. s.n.; CGMS-34399	XXXX	–	–	–	–	XXXX	V
<i>P. sp. 2b</i>	P1557	Brazil, Minas Gerais; J. Miadlikowska et al. s.n.; CGMS-34562	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XIXd
<i>P. sp. 2b</i>	P1583	Brazil, Minas Gerais; J. Miadlikowska et al. s.n.; CGMS-34428	XXXX	–	–	–	–	XXXX	XIXd
<i>P. sp. 3</i>	P611	New Zealand; Högnabba 1746; H	XXXX	–	–	–	–	XXXX	V
<i>P. sp. 3</i>	P612	New Zealand; Högnabba 1471; H	XXXX	–	–	–	–	XXXX	X
<i>P. sp. 3</i>	P604	New Zealand; Högnabba 1538; H	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XX

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Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EFT2.1</i>	<i>rbcLX</i>	<i>rbcLX</i> phylogroup or haplotype
<i>P. sp. 3</i>	P606	New Zealand; S. Stenroos 5942; H	XXXX	–	–	–	–	XXXX	XX
<i>P. sp. 3</i>	P607	New Zealand; S. Stenroos 5820; H	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XX
<i>P. sp. 3</i>	P608	New Zealand; S. Stenroos 5830; H	XXXX	–	–	–	–	XXXX	XX
<i>P. sp. 3</i>	P610	New Zealand; Högnabba 1575; H	XXXX	–	–	–	–	XXXX	XX
<i>P. sp. 3</i>	P1530	New Zealand; D. Blanchon s.n.; DUKE	XXXX	XXXX	XXXX	XXXX	XXXX	–	N/A
<i>P. sp. 3</i>	P605	New Zealand; S. Stenroos 5815; H	XXXX	XXXX	XXXX	XXXX	XXXX	–	N/A
<i>P. sp. 4</i>	N1534	Papua New Guinea; E. Sérusiaux s.n.; LG	XXXX	XXXX	XXXX	XXXX	–	XXXX	VIIb
<i>P. sp. 5</i>	N1545	Papua New Guinea; E. Sérusiaux s.n.; LG	XXXX	XXXX	XXXX	–	XXXX	XXXX	HT32
<i>P. sp. 5</i>	P1716	Papua New Guinea; E. Sérusiaux s.n.; LG	XXXX	–	–	–	–	XXXX	X
<i>P. sp. 6</i>	P1734	Peru; N. Magain s.n.; DUKE	XXXX	–	–	–	–	XXXX	HT35
<i>P. sp. 6</i>	P1650	Honduras; B. Allen 17790; NY	XXXX	XXXX	XXXX	XXXX	–	XXXX	HT44
<i>P. sp. 6</i>	P1733	Peru; J. Miadlikowska et al. s.n.; DUKE	XXXX	–	–	–	–	XXXX	HT46
<i>P. sp. 6</i>	P936	Colombia; R. Lücking 33659; UDBC	XXXX	XXXX	XXXX	XXXX	–	XXXX	XIXb
<i>P. sp. 6</i>	P942	Colombia; R. Lücking 33658; UDBC	XXXX	–	–	–	–	XXXX	XIXb
<i>P. sp. 7a</i>	N1674	Canada, British Columbia; T. Tonsberg 20742; BG-34877	XXXX	–	–	–	–	XXXX	XIa
<i>P. sp. 7a</i>	N1887	USA, Oregon; B. Goffinet 7966; CONN	XXXX	–	–	–	–	XXXX	XIa

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Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EFT2.1</i>	<i>rbcLX</i>	<i>rbcLX</i> phylogroup or haplotype
<i>P. sp. 7a</i>	N1932	Canada, British Columbia; B. Goffinet 3167; CONN	XXXX	–	–	–	–	XXXX	XIa
<i>P. sp. 7a</i>	N1666	Canada, BC; T. Tönsberg 20741; BG-34876	XXXX	XXXX	XXXX	XXXX	XXXX	–	N/A
<i>P. sp. 7b</i>	P1660	Japan, Hokkaido; G. Thor 25408; UPS-519475	XXXX	XXXX	XXXX	XXXX	–	XXXX	XIa
<i>P. sp. 7b</i>	P1672	Japan, Hokkaido; G. Thor; UPS	XXXX	–	–	–	–	XXXX	XIa
<i>P. sp. 7b</i>	P1674	Japan, Hokkaido; G. Thor 25401; UPS-519496	XXXX	–	–	–	–	XXXX	XIa
<i>P. sp. 8</i>	N1947	China, Yunnan; B. Goffinet 9978; CONN	XXXX	–	–	–	–	XXXX	HT31
<i>P. sp. 8</i>	P1272	China, Jilin; M. Sohrabi 16572; M. Sohrabi Private Coll.	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	HT43
<i>P. sp. 8</i>	N1920	China, Yunnan; B. Goffinet 9983; CONN	XXXX	–	–	–	–	XXXX	HT47
<i>P. sp. 8</i>	N1754	South Korea; J. Santosh 090187; J. Santosh Private Coll.	XXXX	–	–	–	–	XXXX	VIIIa
<i>P. sp. 8</i>	N1897	China, Yunnan; B. Goffinet 10060; CONN	XXXX	–	–	–	–	XXXX	VIIIa
<i>P. sp. 8</i>	N1898	China, Yunnan; B. Goffinet 10063; CONN	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	VIIIa
<i>P. sp. 8</i>	N1900	China, Yunnan; B. Goffinet 10102; CONN	XXXX	–	–	–	–	XXXX	VIIIa
<i>P. sp. 8</i>	N1922	China, Yunnan; B. Goffinet 10072; CONN	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	VIIIa
<i>P. sp. 8</i>	N1924	China, Yunnan; B. Goffinet 10095; CONN	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	VIIIa
<i>P. sp. 8</i>	N1928	China, Yunnan; B. Goffinet 10107; CONN	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	VIIIa
<i>P. sp. 8</i>	P1237	Taiwan; A. Mikulin T71; A. Mikulin Private Coll.	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	VIIIa

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Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EFT2.1</i>	<i>rbcLX</i>	<i>rbcLX</i> phylogroup or haplotype
<i>P. sp. 8</i>	P1299	China, Yunnan; J. Miadlikowska et al. s.n.; DUKE	XXXX	–	–	–	–	XXXX	VIIIa
<i>P. sp. 8</i>	N1748	South Korea; J. Santosh 080042; J. Santosh Private Coll.	XXXX	–	–	–	–	XXXX	XIV
<i>P. sp. 8</i>	N1752	South Korea; J. Santosh 090132; J. Santosh Private Coll.	XXXX	–	–	–	–	XXXX	XIV
<i>P. sp. 8</i>	N1766	South Korea; J. Santosh 040808; J. Santosh Private Coll.	XXXX	–	–	–	–	XXXX	XIV
<i>P. sp. 9</i>	N1907	China, Yunnan; B. Goffinet 10100; CONN	XXXX	–	–	–	–	XXXX	VIIIa
<i>P. sp. 9</i>	N1908	China, Yunnan; B. Goffinet 10040; CONN	XXXX	–	–	–	–	XXXX	VIIIa
<i>P. sp. 9</i>	N1918	China, Yunnan; B. Goffinet 10101; CONN	XXXX	–	–	–	–	XXXX	VIIIa
<i>P. sp. 9</i>	N1921	China, Yunnan; B. Goffinet 10064; CONN	XXXX	–	–	–	–	XXXX	VIIIa
<i>P. sp. 9</i>	N1923	China, Yunnan; B. Goffinet 10073; CONN	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	VIIIa
<i>P. sp. 9</i>	N1936	China, Yunnan; B. Goffinet 10108; CONN	XXXX	–	–	–	–	XXXX	VIIIa
<i>P. sp. 9</i>	P1508	China, Yunnan; J. Miadlikowska et al. s.n.; DUKE	XXXX	–	–	–	–	XXXX	VIIIa
<i>P. sp. 9</i>	N1899	China, Yunnan; B. Goffinet 10014; CONN	XXXX	XXXX	XXXX	–	XXXX	–	N/A
<i>P. sp. 10</i>	P1652	Canada, Nova Scotia; NY	XXXX	XXXX	XXXX	–	–	XXXX	V
<i>P. sp. 10</i>	P450	USA, Pennsylvania; J. Lendemer 16792; NY	XXXX	XXXX	XXXX	–	XXXX	XXXX	V
<i>P. sp. 11</i>	N1532	Papua New Guinea; E. Sérusiaux s.n.; LG	XXXX	XXXX	XXXX	XXXX	–	XXXX	IX
<i>P. sp. 11</i>	N1533	Papua New Guinea; E. Sérusiaux s.n.; LG	XXXX	XXXX	–	XXXX	–	XXXX	IX

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Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EFT2.1</i>	<i>rbcLX</i>	<i>rbcLX</i> phylogroup or haplotype
<i>P. sp. 11</i>	N1537	Papua New Guinea; Sérusiaux s.n.; LG	XXXX	–	–	–	–	XXXX	IX
<i>P. sp. 11</i>	N1547	Papua New Guinea; Sérusiaux s.n.; LG	XXXX	–	–	–	–	XXXX	IX
<i>P. sumatrana</i>	P884	Papua New Guinea; Sérusiaux s.n.; LG	XXXX	–	–	XXXX	–	–	N/A
<i>P. truculenta</i>	P332	Chile ; T. Wheeler 89; T. Wheeler Private Coll.	XXXX	XXXX	XXXX	XXXX	–	XXXX	HT36
<i>P. truculenta</i>	P329	Chile; P. Nelson 4362; T. Wheeler Private Coll.	XXXX	XXXX	XXXX	–	XXXX	XXXX	HT38
<i>P. truculenta</i>	P1251	Chile; J. Hollinger 1925; UBC	XXXX	XXXX	–	XXXX	XXXX	XXXX	VIIIb
<i>P. truculenta</i>	P335	Chile; T. Wheeler 1093; T. Wheeler Private Coll.	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	VIIIb
<i>P. truculenta</i>	P330	Chile; T. Wheeler 3826; T. Wheeler Private Coll.	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XV
B. <i>Peltigera</i> other sections									
<i>P. aphthosa</i>	GB	Canada, British Columbia; O'Brien et al. 2013						455475902	HT08
<i>P. aphthosa</i>	GB	Canada, British Columbia; O'Brien et al. 2013						455475866	HT18, IV
<i>P. aphthosa</i>	GB	Canada, British Columbia; O'Brien et al. 2013						455476547	HT23, IV
<i>P. aphthosa</i>	GB	Switzerland; O'Brien et al. 2005						82471081	V
<i>P. aphthosa</i>	P1330	Canada, Nunavik; L. Couillard 191; QFA-0594935	–	–	–	–	–	XXXX	XVIII
<i>P. aphthosa</i>	P1321	Norway; N. Magain s.n.; LG	–	–	666667227	666667049	–	–	N/A
<i>P. aphthosa</i>	P788	Norway; N. Magain s.n.; LG	–	14422959	666667213	666666983	666667091	–	N/A

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Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EFT2.1</i>	<i>rbcLX</i>	<i>rbcLX</i> phylogroup or haplotype
<i>P. aphthosa</i>	GB	Switzerland; O'Brien et al. 2005	–	–	–	–	–	82471084	N/A
<i>P. aphthosa</i> *	GB	Canada, British Columbia; O'Brien et al. 2013	–	–	–	–	–	455475860	HT19, IV
<i>P. britannica</i>	P1324	Canada, British Columbia; J. Lendemer 22342; NY	–	–	–	–	–	XXXX	HT48, IV
<i>P. britannica</i>	P227	Canada, British Columbia; T. Goward 09-436; UBC	–	–	666667201	666666965	–	XXXX	HT48, IV
<i>P. britannica</i>	P228	Canada, British Columbia; T. Goward 09-120; UBC	–	666666860	666667203	666666967	666667079	XXXX	HT48, IV
<i>P. britannica</i>	P16	Iceland; H. G. Kristinsson LA30299; AMNH-30229	–	–	–	–	–	XXXX	XVI
<i>P. britannica</i>	P1342	Canada, Nunavik; J. Gagnon GPS 099; QFA-595029	–	–	–	–	–	XXXX	XVIII
<i>P. britannica</i> *	GB	Canada, British Columbia; O'Brien et al. 2013	–	–	–	–	–	455475935	HT10
<i>P. canina</i>	P4	Iceland; J. Miadlikowska & F. Lutzoni 08.08.10-3; DUKE	–	666666861	666667179	666666973	666667053	XXXX	HT49
<i>P. canina</i>	P14	Iceland; J. Miadlikowska & F. Lutzoni 08.09.10-3; DUKE	–	666666862	666667181	666666937	666667055	XXXX	N/A
<i>P. canina</i>	GB	Canada, British Columbia; O'Brien et al. 2009	–	–	–	255347899	–	–	N/A
<i>P. canina</i>	GB	Germany; O'Brien et al. 2005	–	–	–	–	–	82470985	N/A
<i>P. canina</i>	GB	Poland; O'Brien et al. 2005	–	–	–	–	–	82471036	N/A
<i>P. canina</i>	GB	Unknown; O'Brien et al. 2005	–	–	–	–	–	82470931	N/A
<i>P. canina</i>	GB	USA; O'Brien et al. 2005	–	–	–	–	–	82470994	N/A
<i>P. canina</i>	GB	USA; O'Brien et al. 2005	–	–	–	–	–	82471009	N/A

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Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EFT2.1</i>	<i>rbcLX</i>	<i>rbcLX</i> phylogroup or haplotype
<i>P. canina</i> *	GB	Canada, British Columbia; O'Brien et al. 2013	–					455476004	HT06
<i>P. cinnamomea</i>	P1808	Canada; T. Goward 27/09/3003; UBC	–	XXXX	XXXX	XXXX	XXXX	–	N/A
<i>P. collina</i>	GB	Canada, British Columbia; O'Brien et al. 2013	–					455475737	HT13
<i>P. collina</i>	P1263	Chile; J. Hollinger 1929; UBC	–	666666863	666667221	666666919	666667099	–	N/A
<i>P. continentalis</i>	P1809	China; T. Koponen 45091; H	–	–	XXXX	XXXX	XXXX	–	N/A
<i>P. continentalis</i>	P1810	Russia; J. Miadlikowska et al. s.n.; DUKE	–	666666864	666667245	666666945	666667113	–	N/A
<i>P. degenii</i>	P1849	China; M. Sohrabi 16583; H	–	XXXX	XXXX	–	–	–	N/A
<i>P. degenii</i>	P523	Norway; N. Magain s.n.; LG	–	XXXX	XXXX	–	XXXX	–	N/A
<i>P. degenii</i>	GB	Canada; O'Brien et al. 2005						82471057	N/A
<i>P. degenii</i>	GB	Finland; Stenroos et al. 2006						82779967	N/A
<i>P. didactyla</i>	P1812	Belgium; N. Magain s.n.; LG	–	–	XXXX	–	XXXX	–	N/A
<i>P. didactyla</i>	P1813	Norway; N. Magain s.n.; LG	–	XXXX	XXXX	–	XXXX	–	N/A
<i>P. didactyla</i>	GB	Unknown; O'Brien et al. 2005						82470940	N/A
<i>P. didactyla</i>	GB	Iceland; O'Brien et al. 2005						82470937	N/A
<i>P. didactyla</i>	GB	Poland; O'Brien et al. 2005						82471060	N/A
<i>P. didactyla</i>	GB	Germany; O'Brien et al. 2005						82470979	N/A
<i>P. elisabethae</i>	P66	USA, New Mexico; J. Hollinger 2397; DUKE	–	666666867	666667189	–	666667065	XXXX	V

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Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EFT2.1</i>	<i>rbcLX</i>	<i>rbcLX</i> phylogroup or haplotype
<i>P. elisabethae</i>	P1544	Russia, Siberia; J. Miadlikowska et al. s.n.; DUKE	–	6666666868	666667237	666666935	666667105	–	N/A
<i>P. evansiana</i>	P1817	USA, Pennsylvania; J. Lendemer 17422; NY-1105603	–	6666666869	666667247	666666947	666667115	–	N/A
<i>P. evansiana</i>	P1818	USA, Pennsylvania; J. Lendemer 17422; NY-1103610	–	6666666858	666667249	666666949	666667117	–	N/A
<i>P. extenuata</i>	P1851	Norway; N. Magain s.n.; LG	–	XXXX	XXXX	–	–	–	N/A
<i>P. extenuata</i>	P81	Russia, Kamchaktka; D. E. Himelbrandt; H	–	–	XXXX	XXXX	–	–	HT54
<i>P. frigida</i>	P82	Chile; C. Rubis 4064; H	–	–	XXXX	XXXX	–	–	N/A
<i>P. fripii</i>	P1370	Russia, Siberia; M. P. Andreev 91762; H	–	14422955	666667235	666666931	666667103	–	N/A
<i>P. fuscopraetextata</i> *	GB	Canada, British Columbia; O'Brien et al. 2013	–	–	–	–	–	455476040	HT03
<i>P. granulosa</i>	P1825	Papua New Guinea; E. Sérusiaux s.n.; LG	–	–	–	XXXX	XXXX	–	N/A
<i>P. horizontalis</i>	GB	Canada, British Columbia; O'Brien et al. 2013	–	–	–	–	–	455476142	HT11, V
<i>P. horizontalis</i>	P65	USA, North Carolina; J. Hollinger 2691; DUKE	–	–	–	–	–	XXXX	V
<i>P. horizontalis</i>	GB	USA; O'Brien et al. 2005	–	–	–	–	–	82471003	V
<i>P. horizontalis</i>	P1274	China, Jilin; M. Sohrabi 16639; M. Sohrabi Private Coll.	–	6666666870	666667223	666666921	666667101	–	N/A
<i>P. horizontalis</i>	P1641	USA, North Carolina; J. Lendemer 8136; NY	–	6666666871	666667243	666666943	666667111	–	N/A
<i>P. hydrothyria</i>	P1497	Canada, Nova Scotia; F. Anderson 151675; NSPM	–	–	666667297	666666933	666667165	–	N/A
<i>P. hydrothyria</i>	P1498	Canada, Nova Scotia; F. Anderson 151055; NSPM	–	6666666874	666667299	666667047	666667167	–	N/A

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Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EFT2.1</i>	<i>rbcLX</i>	<i>rbcLX</i> phylogroup or haplotype
<i>P. hydrothyria</i>	P1845	Canada, Nova Scotia; F. Anderson 159031; NSPM	–	666666873	666667301	666666953	666667169	–	N/A
<i>P. koponenii</i>	P1827	Papua New Guinea; E. Sérusiaux s.n.; LG	–	XXXX	–	XXXX	XXXX	–	N/A
<i>P. kristinssonii</i>	P1292	Canada, Québec; J. Gagnon 594989; QFA-0594989	–	666666875	666667225	666666923	–	–	N/A
<i>P. laciniata</i>	P26	Costa Rica; J. Miadlikowska et al. s.n.; DUKE	–	666666877	666667183	666666961	666667057	–	N/A
<i>P. laciniata</i>	P924	Colombia; R. Lücking 33692; UDBC	–	666666876	–	666666985	666667059	–	N/A
<i>P. latiloba</i>	P1175	Russia, Sakha Republic; T. Ahti 64755; H	–	–	666667217	666666915	666667095	–	N/A
<i>P. latiloba</i>	P210	Canada, British Columbia; P. Nelson 11-034; UBC	–	–	666667199	666666963	666667077	–	N/A
<i>P. lepidophora</i>	P1844	Canada, British Columbia; T. Goward s.n.; UBC	–	666666859	666667251	666666951	666667119	–	N/A
<i>P. lepidophora</i>	GB	Canada; O'Brien et al. 2005						82471063	N/A
<i>P. leucophlebia</i>	GB	Canada, British Columbia; O'Brien et al. 2013						455476310	HT20
<i>P. leucophlebia</i>	GB	Canada, British Columbia; O'Brien et al. 2013						455476385	HT30
<i>P. leucophlebia</i>	P17	Iceland; S. Heidmarsson 1983; AMNH-29884	–	–	–	–	–	XXXX	HT55
<i>P. leucophlebia</i>	GB	Finland; Myllys et al. 2007						119690850	V
<i>P. leucophlebia</i>	GB	Finland; Myllys et al. 2007						119690853	V
<i>P. leucophlebia</i>	GB	Finland; Myllys et al. 2007						119690862	V
<i>P. leucophlebia</i>	GB	Finland; Myllys et al. 2007						119690865	V

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Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EFT2.1</i>	<i>rbcLX</i>	<i>rbcLX</i> phylogroup or haplotype
<i>P. leucophlebia</i>	GB	Finland; Myllys et al. 2007						119690859	V
<i>P. leucophlebia</i>	P1343	Canada, Nunavik; J. Gagnon GPS 100; QFA-594931	–	–	–	–	–	XXXX	XVIII
<i>P. leucophlebia</i>	P1329	Canada, Nunavik; J. Gagnon; QFA-594936	–	–	666667229	666666925	–	–	N/A
<i>P. leucophlebia</i>	P1333	Canada, Nunavik; J. Gagnon; QFA-594851	–	–	666667231	666666927	–	–	N/A
<i>P. leucophlebia</i>	GB	Finland; Myllys et al. 2007						119690856	N/A
<i>P. leucophlebia</i>	GB	Canada, Québec; O'Brien et al. 2013						455476640	N/A
<i>P. leucophlebia</i> *	GB	Canada, British Columbia; O'Brien et al. 2013						455476274	HT02
<i>P. leucophlebia</i> *	GB	Canada, British Columbia; O'Brien et al. 2013						455476544	HT21, IV
<i>P. leucophlebia</i> *	GB	Canada, British Columbia; O'Brien et al. 2013						455476358	HT04
<i>P. malacea</i>	GB	Canada, British Columbia; O'Brien et al. 2013						455475965	HT07, III
<i>P. malacea</i>	GB	Canada, British Columbia; O'Brien et al. 2013						455475977	HT09, III
<i>P. malacea</i>	GB	Unknown						455476625	III
<i>P. malacea</i>	GB	Unknown						455476613	III
<i>P. malacea</i>	GB	Unknown						455476658	III
<i>P. malacea</i>	GB	Unknown						455476616	III
<i>P. malacea</i>	GB	Unknown						455476619	III
<i>P. malacea</i>	GB	Finland; Myllys et al. 2007						119690868	III
<i>P. malacea</i>	GB	Canada, Québec; O'Brien et al. 2013						455476610	III

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Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EFT2.1</i>	<i>rbcLX</i>	<i>rbcLX</i> phy- logroup or haplotype
<i>P. malacea</i>	GB	Canada, British Columbia; O'Brien et al. 2013						455476556	HT25
<i>P. malacea</i>	GB	Canada, Québec; O'Brien et al. 2013						455476622	III
<i>P. malacea</i>	OV16029	Unknown						455476655	IV
<i>P. malacea</i>	P1028	Norway; N. Magain s.n.; LG	–	666666878	666667215	666666911	666667093	–	N/A
<i>P. malacea</i>	GB	Canada, British Columbia; O'Brien et al. 2013						455475980	HT22
<i>P. malacea</i>	GB	Canada, British Columbia; O'Brien et al. 2013						455476595	HT28
<i>P. malacea</i>	P1363	Russia, Karelia; P. Uotila 44104; H	–	–	666667233	666666929	–	–	N/A
<i>P. membranacea</i>	GB	Canada; O'Brien et al. 2005						82470928	V
<i>P. membranacea</i>	GB	USA; O'Brien et al. 2005						82471000	V
<i>P. membranacea</i>	GB	Russia; O'Brien et al. 2005						82471066	V
<i>P. membranacea</i>	GB	Canada; O'Brien et al. 2005						82471069	XIII
<i>P. membranacea</i>	P3	Iceland; J. Mladlikowska & F. Lutzoni 08.08.10-2; DUKE	–	666666879	666667177	666666959	666667051	XXXX	XVI
<i>P. membranacea</i>	P86	Madeira; H. Vare L1807; H	–	–	XXXX	–	XXXX	–	N/A
<i>P. membranacea</i>	GB	Finland; Myllys et al. 2007						119690874	N/A
<i>P. membranacea</i>	GB	USA; O'Brien et al. 2005						82470997	N/A
<i>P. membranacea</i>	GB	Finland; Myllys et al. 2007						119690871	N/A
<i>P. membranacea</i>	GB	Canada, British Columbia; O'Brien et al. 2013						455476529	HT15
<i>P. membranacea</i> *	GB	Canada, British Columbia; O'Brien et al. 2013						455476412	HT14, XIII

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Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EFT2.1</i>	<i>rbcLX</i>	<i>rbcLX</i> phylogroup or haplotype
<i>P. monticola</i>	P73	Austria; R. Türk 37593; H	–	6666666880	–	6666666979	666667069	XXXX	HT51
<i>P. monticola</i>	P75	Norway; T. Ahti 65831; H	–	6666666881	666667195	6666666981	666667073	XXXX	HT59
<i>P. neckeri</i>	GB	Canada, British Columbia; O'Brien et al. 2013	–	–	–	–	–	455476136	HT16
<i>P. neckeri</i>	P15	Iceland; J. Miadlikowska 08.09.10-2; DUKE	–	–	–	–	–	XXXX	HT52
<i>P. neckeri</i>	P1620	USA, Arkansas; R. C. Harris 45472; NY	–	6666666882	666667241	6666666941	666667109	–	N/A
<i>P. neocanina</i>	GB	Canada, British Columbia; O'Brien et al. 2013	–	–	–	–	–	455476607	HT29
<i>P. neocanina</i>	P68	USA, New Mexico; J. Hollinger 2401; DUKE	–	–	–	–	–	XXXX	HT53
<i>P. neocanina</i>	P70	USA, New Mexico ; J. Hollinger 2460; DUKE	–	–	–	–	–	XXXX	V
<i>P. neocanina*</i>	GB	Canada, British Columbia; O'Brien et al. 2013	–	–	–	–	–	455476130	HT01, V
<i>P. papuanorum</i>	P1831	Papua New Guinea; E. Sérusiaux s.n.; LG	–	–	XXXX	–	XXXX	–	N/A
<i>P. patagonica</i>	P76	Chile; C. Rubio 7077; H	–	–	–	–	–	XXXX	HT50
<i>P. phyllidiosa</i>	P72	USA, North Carolina; J. Hollinger 2708; DUKE	–	–	–	–	–	XXXX	HT62
<i>P. phyllidiosa</i>	P1245	Unknown; J. Hollinger 1097; UBC	–	6666666884	666667219	6666666917	666667097	–	N/A
<i>P. phyllidiosa</i>	P1617	USA, Tennessee; W. R. Buck 56402; NY	–	6666666885	666667239	6666666939	666667107	–	N/A
<i>P. polydactylotides</i>	P1756	Rwanda; E. Sérusiaux s.n.; LG	–	XXXX	XXXX	XXXX	–	–	N/A
<i>P. ponojensis</i>	P77	Chile; B. Goffinet 6837; CONN	–	–	–	–	–	XXXX	HT57
<i>P. ponojensis</i>	P84	USA, Pennsylvania; J. Lendemer 13556; H	–	–	–	–	–	XXXX	HT63
<i>P. praeclatata</i>	GB	Canada, British Columbia; O'Brien et al. 2013	–	–	–	–	–	455476526	HT17

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Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EFT2.1</i>	<i>rbcLX</i>	<i>rbcLX</i> phylogroup or haplotype
<i>P. praeclertata</i>	GB	Finland; Myllys et al. 2007						119690886	V
<i>P. praeclertata</i>	GB	Finland; Myllys et al. 2007						119690889	V
<i>P. praeclertata</i>	GB	Finland; Myllys et al. 2007						119690892	V
<i>P. praeclertata</i>	GB	Finland; Myllys et al. 2007						119690895	V
<i>P. praeclertata</i>	GB	Finland; Myllys et al. 2007						119690898	V
<i>P. praeclertata</i>	GB	Finland; Myllys et al. 2007						119690901	V
<i>P. praeclertata</i>	GB	Finland; Myllys et al. 2007						119690883	V
<i>P. praeclertata</i>	GB	Finland; Myllys et al. 2007						119690904	V
<i>P. praeclertata</i>	P1862	France, Reunion Island; K. Kalb s.n.; DUKE	–	–	666667253	666666957	666667123	–	N/A
<i>P. praeclertata</i>	P370	Norway; N. Magain s.n.; LG	–	666666887	666667211	666666989	666667089	–	N/A
<i>P. retiforeata</i>	P1839	Alaska; J. Miadlikowska et al. s.n.; DUKE	–	–	XXXX	–	XXXX	–	N/A
<i>P. retiforeata</i>	P74	Russia, Sakha Republic; T. Ahti 61821; H	–	666666888	666667193	–	666667071	–	N/A
<i>P. rufescens</i>	P5	Iceland; J. Miadlikowska & F. Lutzoni 08.08.10-4; DUKE	–	–	–	XXXX	–	–	N/A
<i>P. rufescens</i>	GB	Germany; O'Brien et al. 2005						82470982	N/A
<i>P. rufescens</i>	GB	Germany; O'Brien et al. 2005						82470964	N/A
<i>P. rufescens</i>	GB	Unknown; O'Brien et al. 2005						82470961	N/A

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Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EFT2.1</i>	<i>rbcLX</i>	<i>rbcLX</i> phylogroup or haplotype
<i>P. rufescens</i>	GB	Germany; O'Brien et al. 2005						82470976	N/A
<i>P. rufescens</i>	GB	Germany; O'Brien et al. 2005						82470970	N/A
<i>P. rufescens</i>	GB	England; O'Brien et al. 2005						82470934	N/A
<i>P. rufescens</i>	GB	Poland; O'Brien et al. 2005						82471072	N/A
<i>P. rufescens</i>	GB	Germany; O'Brien et al. 2005						82470973	N/A
<i>P. rufescens</i>	P6	Iceland; J. Miadlikowska & F. Lutzoni 08.08.10-5; DUKE	–	666666889	–	666666977	–	XXXX	HT58
<i>P. sp.</i>	P1319	Canada, Québec; J. Miadlikowska & F. Lutzoni s.n.; DUKE	–	–	–	–	–	XXXX	HT60
<i>P. sp.</i>	P1335	Canada, Nunavik; J. Gagnon GPS 106; QFA 595025	–	–	–	–	–	XXXX	XVIII
<i>P. sp.</i>	GB	Finland; Myllys et al. 2007						119690907	N/A
<i>P. ulcerata</i>	P43	Costa Rica; J. Miadlikowska et al. s.n.; DUKE	–	–	–	–	–	XXXX	HT61
<i>P. ulcerata</i>	P48	Costa Rica; J. Miadlikowska et al. s.n.; DUKE	–	666666891	666667185	–	666667061	–	N/A
<i>P. ulcerata</i>	P51	Costa Rica; J. Miadlikowska et al. s.n.; DUKE	–	666666892	666667187	–	666667063	–	N/A
<i>P. venosa</i>	P1905	Norway; N. Magain s.n.; LG	–	666666893	666667255	–	666667125	–	N/A
<i>P. venosa</i>	P69	USA, New Mexico; J. Hollinger 2475; DUKE	–	666666894	666667191	–	666667067	–	N/A
C. Other genera									

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Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EFT2.1</i>	<i>rbcLX</i>	<i>rbcLX</i> phylogroup or haplotype
<i>Arctomia fasciculare</i> 1	GB	Spain; Otálora et al. 2010						205278413	N/A
<i>A. fasciculare</i> 2	GB	Spain; Otálora et al. 2010						205278416	N/A
<i>Anabaena augstmalis</i>	GB	Germany; Rajaniemi et al. 2005						55650808	N/A
<i>A. cf. cylindrica</i>	GB	Unknown; Gugger et al. 2002						15282236	N/A
<i>Anthoceros</i> sp.	GB	Italy; O'Brien et al. 2005						82470946	N/A
<i>Anthoceros</i> sp.	GB	Germany; O'Brien et al. 2005						82470958	N/A
<i>Blastia pusilla</i>	GB	Germany; O'Brien et al. 2005						82470952	N/A
<i>B. pusilla</i>	GB	Germany; O'Brien et al. 2005						82470955	N/A
<i>B. pusilla</i>	GB	Germany; O'Brien et al. 2005						82471090	N/A
<i>Blennothallia crispus</i> 1	GB	Spain; Otálora et al. 2010						205278404	N/A
<i>B. crispus</i> 2	GB	Germany; O'Brien et al. 2005						82470967	N/A
<i>Collema flaccidum</i> 1	GB	Finland; Stenroos et al. 2006						82779973	N/A
<i>C. flaccidum</i> 2	GB	Finland; Stenroos et al. 2006						82779972	N/A
<i>C. flaccidum</i> 3	GB	Spain; Otálora et al. 2010						205278419	N/A
<i>C. flaccidum</i> 4	GB	Spain; Otálora et al. 2010						205278422	N/A
<i>C. flaccidum</i> 5	GB	USA; Otálora et al. 2010						241913794	N/A
<i>C. furfuraceum</i> 1	GB	USA; Otálora et al. 2010						205278440	N/A
<i>C. furfuraceum</i> 2	GB	Portugal; Otálora et al. 2010						205278437	N/A
<i>C. furfuraceum</i> 3	GB	Spain; Otálora et al. 2010						205278431	N/A

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Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EFT2.1</i>	<i>rbcLX</i>	<i>rbcLX</i> phylogroup or haplotype
<i>C. furfuraceum</i> 4	GB	Croatia; Otálora et al. 2010						205278434	N/A
<i>C. nigrescens</i> 1	GB	Spain; Otálora et al. 2010						205278449	N/A
<i>C. nigrescens</i> 2	GB	Spain; Otálora et al. 2010						205278443	N/A
<i>C. nigrescens</i> 3	GB	Spain; Otálora et al. 2010						205278446	N/A
<i>C. subnigrescens</i> 1	GB	Croatia; Otálora et al. 2010						205278461	N/A
<i>C. subnigrescens</i> 2	GB	Portugal; Otálora et al. 2010						205278458	N/A
<i>C. subnigrescens</i> 3	GB	Portugal; Otálora et al. 2010						205278464	N/A
<i>Cycas circinalis</i>	GB	Brazil; O'Brien et al. 2005						82471075	N/A
<i>Degelia plumbea</i>	GB	Madeira; Myllys et al. 2007						119690755	N/A
<i>Encephalartos natalensis</i>	GB	Italy; O'Brien et al. 2005						82470949	N/A
<i>Enchylidium polycarpon</i> 1	GB	Spain; Otálora et al. 2010						205278455	N/A
<i>E. polycarpon</i> 2	GB	Spain; Otálora et al. 2010						205278452	N/A
<i>E. tenax</i> 1	GB	Spain; Otálora et al. 2010						205278473	N/A
<i>E. tenax</i> 2	GB	Spain; Otálora et al. 2010						205278470	N/A
<i>E. tenax</i> 3	GB	Spain; Otálora et al. 2010						205278467	N/A
<i>Fischerella muscicola</i>	GB	New Zealand; O'Brien et al. 2005						82471045	N/A
<i>Geosiphon pyriforme</i>	GB	Germany; O'Brien et al. 2005						82471096	N/A
<i>G. pyriforme</i>	GB	Germany; O'Brien et al. 2005						82470943	N/A
<i>Gunnera manicata</i>	GB	Germany; O'Brien et al. 2005						82471093	N/A

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Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EFT2.1</i>	<i>rbcLX</i>	<i>rbcLX</i> phylogroup or haplotype
<i>Lathagrium auriforme</i> 1	GB	Spain; Otálora et al. 2010						205278410	N/A
<i>L. auriforme</i> 2	GB	Spain; Otálora et al. 2010						205278407	N/A
<i>L. undulatum</i> 1	GB	Spain; Otálora et al. 2010						205278428	N/A
<i>L. undulatum</i> 2	GB	Spain; Otálora et al. 2010						205278425	N/A
<i>Leptogium austroamericanum</i> 1	GB	Argentina; Otálora et al. 2010						205278479	N/A
<i>L. austroamericanum</i> 2	GB	Colombia; Otálora et al. 2010						205278476	N/A
<i>L. azureum</i> 1	GB	Argentina; Otálora et al. 2010						205278488	N/A
<i>L. azureum</i> 2	GB	Chile; Otálora et al. 2010						205278485	N/A
<i>L. azureum</i> 3	GB	Brazil; Otálora et al. 2010						205278482	N/A
<i>L. brebissonii</i> 1	GB	Spain; Otálora et al. 2010						205278494	N/A
<i>L. brebissonii</i> 2	GB	Spain; Otálora et al. 2010						205278491	N/A
<i>L. corniculatum</i> 1	GB	Spain; Otálora et al. 2010						205278497	N/A
<i>L. corniculatum</i> 2	GB	Spain; Otálora et al. 2010						205278500	N/A
<i>L. corticola</i> 1	GB	Costa Rica; Otálora et al. 2010						205278503	N/A
<i>L. corticola</i> 2	GB	USA; Otálora et al. 2010						205278506	N/A
<i>L. cyanescens</i> 1	GB	Spain; Otálora et al. 2010						205278515	N/A
<i>L. cyanescens</i> 2	GB	USA; Otálora et al. 2010						205278512	N/A
<i>L. cyanescens</i> 3	GB	Panama; Otálora et al. 2010						205278509	N/A
<i>L. furfuraceum</i> 1	GB	Croatia; Otálora et al. 2010						205278530	N/A
<i>L. furfuraceum</i> 2	GB	Portugal; Otálora et al. 2010						205278533	N/A

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Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EFT2.1</i>	<i>rbcLX</i>	<i>rbcLX</i> phylogroup or haplotype
<i>L. furfuraceum</i> 3	GB	Portugal; Otálora et al. 2010						205278536	N/A
<i>L. furfuraceum</i> 4	GB	Spain; Otálora et al. 2010						205278518	N/A
<i>L. furfuraceum</i> 5	GB	Spain; Otálora et al. 2010						205278521	N/A
<i>L. furfuraceum</i> 6	GB	Spain; Otálora et al. 2010						205278524	N/A
<i>L. furfuraceum</i> 7	GB	Spain; Otálora et al. 2010						205278527	N/A
<i>L. pseudofurfuraceum</i> 1	GB	Argentina; Otálora et al. 2010						205278587	N/A
<i>L. pseudofurfuraceum</i> 2	GB	USA; Otálora et al. 2010						205278578	N/A
<i>L. pseudofurfuraceum</i> 3	GB	USA; Otálora et al. 2010						205278584	N/A
<i>L. pseudofurfuraceum</i> 4	GB	USA; Otálora et al. 2010						205278581	N/A
<i>L. pseudofurfuraceum</i> 5	GB	Argentina; Otálora et al. 2010						205278590	N/A
<i>L. saturninum</i> 1	GB	Finland; Stenroos et al. 2006						82779971	N/A
<i>L. saturninum</i> 2	GB	Finland; Stenroos et al. 2006						82779970	N/A
<i>L. saturninum</i> 3	GB	France; Otálora et al. 2010						205278602	N/A
<i>L. saturninum</i> 4	GB	Spain; Otálora et al. 2010						205278605	N/A
<i>L. saturninum</i> 5	GB	USA; Otálora et al. 2010						205278608	N/A
<i>L. saturninum</i> 6	GB	Canada; Otálora et al. 2010						205278599	N/A
<i>Loharia amplissima</i>	GB	Norway; Stenroos et al. 2006						82779934	N/A
<i>L. amplissima</i>	GB	Norway; Stenroos et al. 2006						82779933	N/A
<i>L. amplissima</i>	GB	Austria; O'Brien et al. 2005						82471018	N/A

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Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EFT2.1</i>	<i>rbcLX</i>	<i>rbcLX</i> phy-logroup or haplotype
<i>L. hallii</i>	GB	USA; O'Brien et al. 2005						82471021	N/A
<i>L. kukorawa</i>	GB	China; O'Brien et al. 2013						455476652	N/A
<i>L. kukorawa</i>	GB	China; O'Brien et al. 2013						455476646	N/A
<i>L. pulmonaria</i>	OG6	USA, North Carolina, N. Magain s.n., DUKE	-	XXXX	XXXX	-	-	-	N/A
<i>L. pulmonaria</i>	GB	Finland; Myllys et al. 2007						119690773	N/A
<i>L. pulmonaria</i>	GB	Finland; Myllys et al. 2007						119690770	N/A
<i>L. pulmonaria</i>	GB	Finland; Myllys et al. 2007						119690767	N/A
<i>L. pulmonaria</i>	GB	Finland; Myllys et al. 2007						119690776	N/A
<i>L. pulmonaria</i>	GB	Finland; Myllys et al. 2007						119690779	N/A
<i>L. pulmonaria</i>	GB	Finland; Myllys et al. 2007						119690782	N/A
<i>L. pulmonaria</i>	GB	Finland; Myllys et al. 2007						119690764	N/A
<i>L. pulmonaria</i>	GB	Finland; Myllys et al. 2007						119690758	N/A
<i>L. pulmonaria</i>	GB	Finland; Myllys et al. 2007						119690761	N/A
<i>L. scrobiculata</i>	GB	Finland; Myllys et al. 2007						119690785	N/A
<i>Massalongia carmosa</i>	GB	USA; O'Brien et al. 2005						82471024	N/A
<i>M. carmosa</i>	GB	Finland; Stenroos et al. 2006						82779969	N/A
<i>Nephroma arcticum</i>	GB	Canada, British Columbia; O'Brien et al. 2013						455476562	HT26, IV
<i>N. arcticum</i>	GB	Canada, British Columbia; O'Brien et al. 2013						455476565	HT27, IV

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Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EFT2.1</i>	<i>rbcLX</i>	<i>rbcLX</i> phylogroup or haplotype
<i>N. arcticum</i>	GB	Canada, Québec; O'Brien et al. 2013						455476628	X1a
<i>N. bellum</i>	OG4	Norway; N. Magain s.n.; LG	–	XXXX	XXXX	–	–	–	N/A
<i>N. bellum</i>	GB	Finland; Myllys et al. 2007						119690791	N/A
<i>N. bellum</i>	GB	Finland; Myllys et al. 2007						119690803	N/A
<i>N. bellum</i>	GB	Finland; Myllys et al. 2007						119690788	N/A
<i>N. bellum</i>	GB	Finland; Myllys et al. 2007						119690794	N/A
<i>N. bellum</i>	GB	Finland; Myllys et al. 2007						119690797	N/A
<i>N. bellum</i>	GB	Finland; Myllys et al. 2007						119690800	N/A
<i>N. bellum</i>	GB	Austria; O'Brien et al. 2005						82471027	N/A
<i>N. bellum</i> *	GB	Canada, British Columbia; O'Brien et al. 2013						455476436	HT12
<i>N. helveticum</i>	GB	Canada; O'Brien et al. 2005						82471030	N/A
<i>N. laevigatum</i>	GB	Finland; Myllys et al. 2007						119690806	N/A
<i>N. laevigatum</i>	GB	Finland; Myllys et al. 2007						119690809	N/A
<i>N. parile</i>	GB	Canada, British Columbia; O'Brien et al. 2013						455476439	HT05
<i>N. parile</i>	OG3	Norway; N. Magain s.n.; LG	–	XXXX	XXXX	–	–	–	N/A
<i>N. parile</i>	GB	Finland; Myllys et al. 2007						119690812	N/A
<i>N. parile</i>	GB	Finland; Myllys et al. 2007						119690818	N/A

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Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EFT2.1</i>	<i>rbcLX</i>	<i>rbcLX</i> phylogroup or haplotype
<i>N. parile</i>	GB	Finland; Myllys et al. 2007						119690821	N/A
<i>N. parile</i>	GB	Finland; Myllys et al. 2007						119690815	N/A
<i>N. resupinatum</i>	GB	Canada, Québec; O'Brien et al. 2013						455476634	N/A
<i>N. resupinatum</i>	GB	Finland; Myllys et al. 2007						119690824	N/A
<i>N. resupinatum</i>	GB	Finland; Myllys et al. 2007						119690827	N/A
<i>N. tangeriense</i>	GB	Madeira; Myllys et al. 2007						119690830	N/A
<i>Nostoc calcicola</i>	GB	Czech Republic; Rájaniemi et al. 2005						55650826	N/A
<i>N. calcicola</i>	GB	Czech Republic; Rájaniemi et al. 2005						55650829	N/A
<i>N. commune</i>	GB	USA; O'Brien et al. 2005						82470988	N/A
<i>N. commune</i>	GB	China; Rudi et al. 1998						2463296	N/A
<i>N. edaphicum</i>	GB	Czech Republic; Rájaniemi et al. 2005						55650832	N/A
<i>N. ellipsorum</i>	GB	Czech Republic; Rájaniemi et al. 2005						55650835	N/A
<i>N. flagelliforme</i>	GB	China; Rudi et al. 1998						2463302	N/A
<i>N. muscorum</i>	GB	France; O'Brien et al. 2005						82471087	N/A
<i>N. punctiforme</i>	GB	France; O'Brien et al. 2005						82471099	N/A
<i>Nostoc</i> sp.	GB	Unknown; Fewer et al. 2007						159154307	N/A
<i>Nostoc</i> sp.	GB	Unknown; Kaneko et al. 2001						47118302	N/A
<i>Nostoc</i> sp.	GB	Unknown; Tomitani et al. 2006						89241989	N/A

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Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EFT2.1</i>	<i>rbcLX</i>	<i>rbcLX</i> phylogroup or haplotype
<i>Nostoc</i> sp.	GB	Svalbard, Norway; Rudi et al. 1998						2463317	N/A
<i>Nostoc</i> sp.	GB	Unknown; Fewer et al. 2007						159154309	N/A
<i>Nostoc</i> sp.	GB	USA, Rudi et al. 1998						2463308	N/A
<i>Nostoc</i> sp.	GB	Indonesia; O'Brien et al. 2005						82471039	N/A
<i>Nostoc</i> sp.	GB	Senegal; O'Brien et al. 2005						82471051	N/A
<i>Nostoc</i> sp.	GB	Finland; Rajaniemi et al. 2005						55650727	N/A
<i>Nostoc</i> sp.	GB	Unknown; Kaneko et al. 2001						17227497	N/A
<i>Nostoc</i> sp.	GB	Norway; Rudi et al. 1998						2463311	N/A
<i>Nostoc</i> sp.	GB	Antarctica; Rudi et al. 1998						2463314	N/A
<i>Pannaria conoplea</i>	GB	Austria; O'Brien et al. 2005						82471033	N/A
<i>Parmeliella triptophylla</i>	GB	Finland; Myllys et al. 2007						119690836	N/A
<i>P. triptophylla</i>	GB	Finland; Myllys et al. 2007						119690839	N/A
<i>P. triptophylla</i>	GB	Finland; Myllys et al. 2007						119690842	N/A
<i>P. triptophylla</i>	GB	Finland; Myllys et al. 2007						119690845	N/A
<i>Protopannaria pezizoides</i>	GB	Finland; Myllys et al. 2007						119690833	N/A
<i>P. pezizoides</i>	GB	Finland; Stenroos et al. 2006						82779965	N/A
<i>Parmotrema tinctorum</i>	GB	Unknown; Lei et al. 2008						190147520	N/A
<i>P. tinctorum</i>	GB	Unknown; Lei et al. 2008						190147518	N/A

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Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EFT2.1</i>	<i>rbcLX</i>	<i>rbcLX</i> phylogroup or haplotype
<i>P. tinctorum</i>	GB	Unknown; Lei et al. 2008						190147522	N/A
<i>Pseudocypbellaria clathrata</i>	GB	Brazil; Stenroos et al. 2006						82779936	N/A
<i>P. coriifolia</i>	GB	Argentina; Stenroos et al. 2006						82779949	N/A
<i>P. coriifolia</i>	GB	Argentina; Stenroos et al. 2006						82779938	N/A
<i>P. coriifolia</i>	GB	Argentina; Stenroos et al. 2006						82779955	N/A
<i>P. crocata</i>	GB	Madeira; Myllys et al. 2007						119690910	N/A
<i>P. crocata</i>	GB	Argentina; Stenroos et al. 2006						82779944	N/A
<i>P. crocata</i>	GB	Argentina; Stenroos et al. 2006						82779943	N/A
<i>P. crocata</i>	GB	Canada; Stenroos et al. 2006						82779935	N/A
<i>P. crocata</i>	GB	Argentina; Stenroos et al. 2006						82779942	N/A
<i>P. crocata</i>	GB	Argentina; Stenroos et al. 2006						82779945	N/A
<i>P. crocata</i>	GB	Argentina; Stenroos et al. 2006						82779948	N/A
<i>P. crocata</i>	GB	Thailand; Stenroos et al. 2006						82779952	N/A
<i>P. crocata</i>	GB	Mauritius; Stenroos et al. 2006						82779954	N/A
<i>P. hirsuta</i>	GB	Argentina; Stenroos et al. 2006						82779940	N/A
<i>P. hirsuta</i>	GB	Argentina; Stenroos et al. 2006						82779975	N/A
<i>P. hirsuta</i>	GB	Argentina; Stenroos et al. 2006						82779947	N/A

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Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EFT2.1</i>	<i>rbcLX</i>	<i>rbcLX</i> phylogroup or haplotype
<i>P. intricata</i>	GB	Reunion Island; Stenroos et al. 2006						82779953	N/A
<i>P. intricata</i>	GB	Argentina; Stenroos et al. 2006						82779946	N/A
<i>P. intricata</i>	GB	Argentina; Stenroos et al. 2006						82779939	N/A
<i>P. mallota</i>	GB	Argentina; Stenroos et al. 2006						82779951	N/A
<i>P. mallota</i>	GB	Argentina; Stenroos et al. 2006						82779937	N/A
<i>P. pilosella</i>	GB	Argentina; Stenroos et al. 2006						82779950	N/A
<i>P. scabrosa</i>	GB	Argentina; Stenroos et al. 2006						82779974	N/A
<i>P. scabrosa</i>	GB	Argentina; Stenroos et al. 2006						82779941	N/A
<i>Scytinium gelatinosum</i> 1	GB	Spain; Otálora et al. 2010						205278542	N/A
<i>S. gelatinosum</i> 2	GB	USA; O'Brien et al. 2005						82471015	N/A
<i>S. gelatinosum</i> 3	GB	Spain; Otálora et al. 2010						205278539	N/A
<i>S. lichenoides</i> 1	GB	Sweden; Otálora et al. 2010						241913791	N/A
<i>S. lichenoides</i> 2	GB	Spain; Otálora et al. 2010						205278548	N/A
<i>S. lichenoides</i> 3	GB	Spain; Otálora et al. 2010						205278545	N/A
<i>S. lichenoides</i> 4	GB	Spain; Otálora et al. 2010						205278551	N/A
<i>S. lichenoides</i> 5	GB	Portugal; Otálora et al. 2010						205278554	N/A
<i>S. lichenoides</i> 6	GB	Spain; Otálora et al. 2010						205278557	N/A
<i>S. magnusonii</i> 1	GB	Spain; Otálora et al. 2010						205278566	N/A
<i>S. magnusonii</i> 2	GB	Spain; Otálora et al. 2010						205278569	N/A

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Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EFT2.1</i>	<i>rbcLX</i>	<i>rbcLX</i> phylogroup or haplotype
<i>S. magnusonii</i> 3	GB	Sweden; Otálora et al. 2010						205278560	N/A
<i>S. magnusonii</i> 4	GB	Denmark; Otálora et al. 2010						205278563	N/A
<i>S. magnusonii</i> 5	GB	Sweden; Otálora et al. 2010						205278575	N/A
<i>S. magnusonii</i> 6	GB	Spain; Otálora et al. 2010						205278572	N/A
<i>S. pulvinatum</i> 1	GB	Spain; Otálora et al. 2010						205278596	N/A
<i>S. pulvinatum</i> 2	GB	Spain; Otálora et al. 2010						205278593	N/A
<i>S. schraderi</i> 1	GB	Spain; Otálora et al. 2010						205278614	N/A
<i>S. schraderi</i> 2	GB	Spain; Otálora et al. 2010						205278611	N/A
<i>Solorina crocea</i>	OG14	Russia, Karelia; T. Ahti s.n.; PTZ	–	123979314	123979355	–	–	–	N/A
<i>S. saccata</i>	OG13	Russia, Karelia; T. Ahti s.n.; PTZ	–	XXXX	XXXX	–	–	–	N/A
<i>Stangeria paradosa</i>	GB	England; O'Brien et al. 2005						82471078	N/A
<i>Stereocaulon exutum</i>	GB	Japan; Stenroos et al. 2006						82779962	N/A
<i>S. frondiferum</i>	GB	New Zealand; Stenroos et al. 2006						82779963	N/A
<i>S. tomentosum</i>	GB	Argentina; Stenroos et al. 2006						82779964	N/A
<i>Sticta beauvoisii</i>	GB	USA; O'Brien et al. 2005						82471006	N/A
<i>S. fuliginosa</i>	GB	USA; O'Brien et al. 2005						82471102	N/A
<i>S. gaudichaudia</i>	GB	Argentina; Stenroos et al. 2006						82779960	IV
<i>S. hypochroa</i>	GB	Argentina; Stenroos et al. 2006						82779959	IV
<i>S. hypochroa</i>	GB	Argentina; Stenroos et al. 2006						82779958	IV

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Taxon	DNA Number	Voucher/Published source	ITS	LSU	<i>RPB1</i>	β -tubulin	<i>EFT2.1</i>	<i>rbcLX</i>	<i>rbcLX</i> logroup or haplotype
<i>S. hypochroa</i>	GB	Argentina; Stenroos et al. 2006						82779957	IV
<i>S. hypochroa</i>	GB	Argentina; Stenroos et al. 2006						82779956	IV
<i>S. hypochroa</i>	GB	Argentina; Stenroos et al. 2006						82779961	IV
<i>Trichormus abilis</i>	GB	Russia; Rajaniemi et al. 2005						55650847	N/A
<i>Vahlteila leucophaea</i>	GB	Finland; Stenroos et al. 2006						82779966	N/A