

Supplementary material

Table S1. Samples retrieved from GenBank and included in the phylogenetic analysis of Fig. 3. are reported with the corresponding NCBI accession numbers.

Taxon Name	Sample ID	Accession number		
		nuLSU	nuSSU	mtLSU
<i>Absconditella</i> sp.	Spribille 39168	KR017188	KR017250	KR017331
<i>Acarospora bullata</i>	AFTOL4821	-	KJ766681	KJ766345
<i>A. bullata</i>	Reeb VR 8-VII-98/6	AY640939	-	-
<i>Acarospora complanata</i>	AFTOL 344	-	-	AY584693
<i>A. complanata</i>	Reeb VR 10-VIII-97 st 4.1/2	AF356654	AF356653	-
<i>Alectoria sarmentosa</i>	T638	-	-	KR017393
<i>A. sarmentosa</i>	Wedin 6350	DQ899290	-	-
<i>Arctomia delicatula</i>	P166	KR017191	KR017255	KR017335
<i>Arthrorhaphis citrinella</i>	Lutzoni 97.06.29 ST2.1	AF279376	AF279375	AY853309
<i>Aspicilia caesiocinerea</i>	AFTOL653	DQ986778	DQ986736	DQ986892
<i>Aspicilia simoensis</i>	T488	HM060739	-	HM060701
<i>Bacidia rubella</i>	AFTOL1793	DQ986793	-	-
<i>Baeomyces</i> sp.	FJ2013 T1364	KU844631	KU844703	KU844581
<i>Bellemeria diamarta</i>	Wedin 6822	AY756336	-	AY756398
<i>Brigantiaea fuscolutea</i>	Gaya65	JQ301544	JQ301604	JQ301478
<i>Buellia frigida</i>	889	DQ883695	DQ883699	DQ912292
<i>Calicium viride</i>	Søchting 7475	AF356670	AF356669	AY143402
<i>Caloplaca cerina</i>	Gaya16	JQ301549	-	JQ301483
<i>Candelariella coralliza</i>	Wedin 7161	AY853362	-	AY853314

<i>Candelariella vitellina</i>	AFTOL1816	KJ766541	-	AY853315
<i>Catolechia wahlenbergii</i>	AFTOL1667	KJ766542	KJ766697	KJ766370
<i>Circinaria hispida</i>	AFTOL4922	KJ766544	-	KJ766372
<i>Cladia retipora</i>	-	-	CRU6468 1	-
<i>C. retipora</i>	HTL19989g	GQ500964	-	GQ500932
<i>Cladonia rangiferina</i>	von Brackel 5573	-	-	KT792814
<i>C. rangiferina</i>	Buschbom 3034c	AY533000	-	-
<i>Coccocarpia erythroxyli</i>	Spribille 31483	JF938133	JF938160	JF938189
<i>Coccotrema pocillarium</i>	-	AF274093	AF27411 3	AF329166
<i>Coenogonium leprieurii</i>	Kauff pa04021998-522	AF465442	AF46545 7	AY584698
<i>Collema furfuraceum</i>	AFTOL4817	-	KJ766703	KJ766377
<i>C. furfuraceum</i>	MA16260	-	-	EU982567
<i>Cryptodiscus foveolaris</i>	GG2603a	AY661683	-	AY661673
<i>Degelia plumbea</i>	AFTOL990	DQ912347	DQ91232 4	DQ912299
<i>Dibaeis baeomyces</i>	AFTOL358	-	-	AY584704
<i>D. baeomyces</i>	AFTOL4825	KJ766549	KJ766705	-
<i>Diorygma circumfusum</i>	Kalb 33922	AY640019	-	DQ431963
<i>Diploschistes actinostomus</i>	DNA7005	KF688496	-	KF688510
<i>Diploschistes scruposus</i>	AFTOL4813	KJ766552	KJ766708	KJ766395
<i>Diplotomma epipolium</i>	AFTOL4967	JQ301595	-	JQ301535
<i>Evernia prunastri</i>	AFTOL1272	KJ766557	KJ766713	KJ766389
<i>Fissurina insidiosa</i>	AFTOL1662	DQ973045	DQ97302 2	DQ972995
<i>Fuscidea austera</i>	AFTOL1671	KJ766562	KJ766719	KJ766395
<i>Graphis scripta</i>	Nelsen MN507	KJ440937	-	KJ461722
<i>Gregorella humida</i>	Pykälä 23630	EU360846	EU36086 7	-
<i>Gyalecta hypoleuca</i>	TSB 20801	AF465453	AF46546 0	-

<i>Gyalecta jenensis</i>	Lutzoni 98.08.17-6	AF279391	AF27939 0	AF431956
<i>Gyalolechia fulgens</i>	Gaya39	JQ301567	JQ301623	JQ301503
<i>Hymenelia epulotica</i>	AFTOL1844	KJ766569	-	KJ766404
<i>Hymenelia lacustris</i>	Wedin 6876	AY853371	AY64099 2	-
<i>Hypocenomyce scalaris</i> (1)	1025	DQ986748	KJ766725	DQ986861
<i>H. scalaris</i>	Timdal 11022	KF360470	-	KF360436
<i>Hypogymnia physodes</i>	AFTOL1966	JQ301600	JQ301651	JQ301541
<i>Hypotrachyna revoluta</i>	MAF10395	JN939619	-	JQ301541
<i>Icmadophila ericetorum</i>	AFTOL4846	KJ766573	KJ766729	KJ766409
<i>Lasallia pustulata</i>	AFTOL554	DQ883690	DQ88370 0	DQ986889
<i>Lecanactis abietina</i>	AFTOL 305	AY548812	AY54880 5	AY548813
<i>Lecania cyrtella</i>	AFTOL4985	KJ766577	KJ766732	KJ766412
<i>Lecanora achariana</i>	AFTOL1693	DQ973027	DQ97300 4	DQ972976
<i>Lecanora allophana</i>	-	-	AF51560 8	KT630256
<i>Lecanora caesiorubella</i>	AFTOL5787	KJ766579	KJ766734	KJ766415
<i>Lecanora hybocarpa</i>	AFTOL639	DQ782910	DQ78288 3	DQ912273
<i>Lecanora thysanophora</i>	AFTOL208	KJ766585	KJ766740	KJ766422
<i>Lecidea atrobrunnea</i>	Lay 04-0125	HQ660535	-	HQ660560
<i>Lecidea floridensis</i>	-	HQ660540	-	HQ660565
<i>Lecidea silacea</i>	AFTOL1368	KJ766588	DQ98672 3	DQ986878
<i>Lecidella elaeochroma</i>	ZX_XL0395-2	-	-	KT453835
<i>L. elaeochroma</i>	AFTOL1275	DQ986747	DQ98671 9	-
<i>Lecidoma demissum</i>	AFTOL1376	DQ986759	DQ98672 6	DQ986881

<i>Leciophysma furfurascens</i>	Nordin 5695	GQ258998	-	GQ259028
<i>L. furfurascens</i>	PakYanWong4670	-	EU36087 6	-
<i>Lobaria pulmonaria</i>	-	AF183934	AF18393 5	AF069541
<i>Lobothallia radiosa</i>	AFTOL1860	KJ766596	KJ766746	KJ766430
<i>Loxospora cismonica</i>	AFTOL878	DQ986749	DQ98674 2	DQ986899
<i>Malmidea coralliformis</i>	Kalb	HM447627	-	HM447597
<i>Malmidea eeuuae</i>	Kalb	HM447628	-	HM447601
<i>Megalospora tuberculosa</i>	Gaya52	JQ301574	JQ301628	JQ301515
<i>Megalotremis verrucosa</i>	Lücking 26316 (F)	GU327718	JN887383	-
<i>Megaspora verrucosa</i>	AFTOL4842	-	KJ766748	KJ766434
<i>Menegazzia terebrata</i>	AFTOL10	AY584637	AY58466 1	AY584624
<i>Mycoblastus sanguinarius</i>	AFTOL196	DQ912333	DQ78287 9	DQ912276
<i>Myelochroa aurulenta</i>	AFTOL206	DQ973025	DQ97300 1	DQ972972
<i>Myriotrema olivaceum</i>	Lumbsch 19113f	EU075627	-	EU075579
<i>Nephroma parile</i>	LG216	HQ394196	-	HQ423275
<i>Niorma chrysophthalma</i>	Gaya061	JQ301576	JQ301629	JQ301518
<i>Ocellularia cavata</i>	Frisch 99/Ka1950	DQ431935	-	DQ384879
<i>Ocellularia thelotremoides</i>	Lumbsch 19108	EU075638	-	EU075592
<i>Ochrolechia frigida</i>	-	AF279403	AF27940 2	AY300898
<i>Ochrolechia parella</i>	-	AF274097	AF27410 9	GU980977
<i>Odontotrema</i> sp.	2EB2010	HM244772	-	-
<i>Ophioparma ventosa</i>	AFTOL4867	KJ766611	KJ766756	KJ766448
<i>Orceolina kerguelensis</i>	-	AY212830	DQ36625 7	AY212853
<i>Pannaria rubiginosa</i>	-	AY340558	-	AY340513

<i>Parmelia saxatilis</i>	AFTOL4950	KJ766613	KJ766757	-
<i>Parmeliella triptophylla</i>	Wedin 7037	-	-	AY652623
<i>P. triptophylla</i>	Haikonen21447	EU360860	EU360883	-
<i>Parmelina quercina</i>	MAFLich13946	DQ268541	-	-
<i>Parmelina tiliacea</i>	MAFLich13964	DQ268559	-	-
<i>Parmotrema perforatum</i>	Cole7983	AY584840	-	AY586591
<i>Peltigera degenii</i>	-	AY257905	AY424238	AY584628
<i>Peltigera leucophlebia</i>	-	AF286753	AY424228	AY124166
<i>Pertusaria amara</i>	-	-	-	AY584713
<i>P. amara</i>	AFTOL4874	KJ766623	KJ766764	-
<i>Pertusaria hemisphaerica</i>	-	AF381556	-	AF381563
<i>Pertusaria pertusa</i>	Bilovitz3636	KP794960	-	-
<i>P. pertusa</i>	T1298	-	KR017298	KR017385
<i>Pertusaria scaberula</i>	-	AF274099	AF274105	AF431959
<i>Phlyctis argena</i>	AFTOL1375	DQ986771	DQ986725	DQ986880
<i>Phyllobaeis imbricata</i>	AFTOL852	DQ986781	DQ986739	DQ986895
<i>Physcia dubia</i>	Gaya81	JQ301596	-	JQ301536
<i>Physconia muscigena</i>	AFTOL220	DQ912344	DQ912321	DQ912291
<i>Placopsis cribellans</i>	KS167	KU844626	KU844695	KU844570
<i>Placopsis gelida</i>	-	AY212836	-	-
<i>P. gelida</i>	P118	-	KR017243	KR017321
<i>Placynthiella icmalea</i>	M173	EU940160	EU940083	EU940300

<i>Placynthium nigrum</i>	AFTOL1040	-	KJ766767	-
<i>P. nigrum</i>	AFTOL4840	KJ766625	-	KJ766459
<i>Platismatia glauca</i>	AFTOL4944	KJ766626	KJ766768	KJ766460
<i>Platygramme australiensis</i>	Kalb33930	AY640024	-	DQ431970
<i>Pleopsidium chlorophanum</i>	AFTOL1004	DQ842017	-	DQ991756
<i>Pleopsidium flavum</i>	AFTOL4856	KJ766628	-	KJ766462
<i>Porina aenea</i>	ArupBalochSW154	-	-	HM244754
<i>P. aenea</i>	AFTOL1310	KJ766630	-	-
<i>Porpidia albocaerulescens</i>	AFTOL1246	DQ986757	DQ98671 6	DQ986881
<i>Protoblastenia calva</i>	AFTOL992	JQ301601	JQ301653	AY756374
<i>Protopannaria pezizoides</i>	AFTOL129	-	-	DQ912302
<i>P. pezizoides</i>	AFTOL222	DQ912350	DQ91232 6	-
<i>Protoparmelia badia</i>	-	EF105425	-	EF105420
<i>Pseudocyphellaria crocata</i>	-	AY340563	-	KC011078
<i>Psora rubiformis</i>	-	-	-	AY756374
<i>P. rubiformis</i>	AFTOL219	DQ986761	DQ98672 9	-
<i>Pycnothelia papillaria</i>	AFTOL1377	DQ986800	-	DQ986783
<i>Pycnothelia papillaria</i>	-	-	AF08547 4	-
<i>Pyxine subcinerea</i>	AFTOL686	DQ883802	DQ88379 3	DQ912292
<i>Ramalina complanata</i> (1)	AFTOL86	DQ973038	-	DQ972986
<i>R. complanata</i>	AFTOL966	DQ883783	DQ88378 4	-
<i>Rhizocarpon disporum</i>	-	AF356678	AF35667 7	-
<i>Rhizocarpon norvegicum</i>	-	-	AY55254 4	AF483186
<i>Rusavskia elegans</i>	Gaya13	JQ301588	JQ301640	JQ301529
<i>Sagirolechia protuberans</i>	Nordin5893	HM244775	-	HM244757

<i>Sarcogyne regularis</i>	AFTOL4886	KJ766658	KJ766793	KJ766490
<i>Savoronala madagascariensis</i>	537	KC020142	-	KC020144
<i>S. madagascariensis</i>	538	KC020143	-	KC020145
<i>Schaereria dolodes</i>	T1290	KR017224	-	KR017383
<i>Schaereria fuscocinerea</i>	T1291	KR017225	KR01727 2	KR017384
<i>Schizoxylon albescens</i>	L547	-	KR01723 9	KR017317
<i>Sphaeropezia</i> sp.	EB-2012b	JX266159	-	JX266157
<i>Sporastatia testudinea</i>	-	AY640969	AY64100 9	AY584725
<i>Stereocaulon paschale</i>	-	AF279413	AF14023 6	AY340525
<i>Stereocaulon tomentosum</i>	Ahti60910	-	DQ09967 7	-
<i>S. tomentosum</i>	-	AY340569	-	AY756378
<i>Sticta fuliginosa</i>	-	-	AY42425 5	-
<i>Sticta fuliginosa</i>	DNA4907	KC011026	-	KC011078
<i>Stictis radiata</i>	P164	-	-	KR017334
<i>S. radiata</i>	Palice (ESS 21520)	AY300864	-	-
<i>S. radiata</i>	P164	-	KR01725 4	-
<i>Tephromela atra</i>	AFTOL1373	DQ986766	DQ98672 4	DQ986879
<i>Thamnozia subuliformis</i>	AFTOL401	-	-	AY584728
<i>T. subuliformis</i>	-	AF356679	AF11371 4	-
<i>Thelotrema lepadinum</i>	P129	-	KR01724 7	KR017324
<i>Toninia sedifolia</i>	AFTOL1283	KJ766666	KJ766805	KJ766412
<i>Trapelia glebulosa</i>	KS83	KR017177	KU84464	KR017356
<i>Trapelia placodioides</i>	KS163	KU844623	KU84469	KU844568

			1	
<i>Trapeliopsis flexuosa</i>	AFTOL1825	KJ766668	KJ766807	KJ766505
<i>Trapeliopsis granulosa</i>	AFTOL4966	KJ766670	KJ766809	-
<i>T. granulosa</i>	KS66	KR017175	-	KR017313
<i>Umbilicaria crustulosa</i>	AFTOL7122	HM161590	-	HM161612
<i>Umbilicaria decussata</i>	AFTOL7127	HM161603	-	-
<i>Umbilicaria hirsuta</i>	Abbas 9600460-1	-	AY64811	-
			2	
<i>U. hirsuta</i>	AFTOL7136	HM161589	-	HM161611
<i>Xanthomendoza fallax</i>	Gaya33	JQ301580	JQ301633	JQ301518
<i>Xanthoparmelia conspersa</i>	AFTOL5002	KJ766676	KJ766815	-
<i>Xanthoparmelia loxodes</i>	MAF 7072	AY578940	-	-
<i>Xanthoria parietina</i>	Gaya8	JQ301589	JQ301641	JQ301530
<i>Xylographa parallela</i>	AFTOL4895	KJ766679	-	AY584708
<i>X. parallela</i>	T1151	-	KR01729	-
			5	
Outgroups in Leotiomycetes				
<i>Geltingia associata</i>	Björk 22459	KJ559576	KJ559580	-
<i>Hyaloscypha hepaticola</i>	M339	EU940150	EU94007	EU940266
			4	
<i>Lachnum virgineum</i>	AFTOL49 / spat0301	AY544646	AY54468	AY544745
			8	
<i>Lasiosphaeria ovina</i>	SMH3923/ M176	AY587950	EU94008	EU940299
			2	
<i>Leotia lubrica</i>	ZWGeo59Clark / AFTOL 1	AY789359	AY78935	AY544746
			8	
<i>Llimoniella gregorellae</i>	CBFSJV9954	KJ559553	KJ559581	-
<i>Microascus longirostris</i>	AFTOL 1237	-	-	FJ190621
<i>Pezizella epithallina</i>	Diederich 17411	KJ559572	-	-
<i>Phacidium lacerum</i>	AFTOL 1253	-	-	FJ190623
<i>Unguiculariopsis lettaui</i>	Ertz16346	KJ559579	KJ559592	-

Figure S1. Thallus of *Cheiromycina petri* (Tønsberg 43060, L2224). Arrows indicate brown apothecia that are located on the thallus close to the brown sporodochia. These apothecia do not contain mature asci with ascospores and therefore we could not assess their identity. Future findings of this kind of apothecia on other samples are encouraged to potentially address them to the same thalli of *Cheiromycina*, and therefore to suggest the teleomorphic state of this fungal genus.

