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Supplementary data S2. Phylogenetic analysis, *Cheiromycina*.

The alignments for mtSSU and LSU from the *Malmideaceae*-analysis of Kantvilas et al. (2021) were used (see their Table 1 for sequence-ID:s). In the mrSSU-alignment, *Cheiromycina* sequences from the Martin7 database were added. One terminal named *Cheiromycina flabelliformis* in Kantvilas et al. (2021) and Muggia et al. (2017) has been revised to *C. petri* in Martin7.

Name in Kantvilas et al. (2021)	Name in this analysis	GenBank-ID:s for markers used here
Cheiromycina flabelliformis	*C. petri* (A)	MF431799 + MF431804
Cheiromycina petri	*C. petri* (B)	MF431800 + MF431805
Cheiromycina reimeri	*C. reimeri* (C)	MF431802 + MF431806

The matrices for mtSSU and LSU were aligned separately using PASTA (Mirabab et al. 2015). After trimming of the ends of the aligned matrices, they were concatenated into one alignment and analysed using maximum likelihood as implemented in IQTree2 (Minh et al. 2020). The mtSSU and LSU alignments were submitted to the analysis as two partitions, but allowing merging if this improved model fit. The best model fit was achieved with the models TVM+F+G4 (mrSSU) and TIM3+F+ I+G4 (LSU), without merging of partitions. The assessment of branch support was calculated using ultrafast bootstrap, implying that only support values of 95% or over should be viewed as significant (Hoang et al. 2018). Only UBOT values above 95% were included in the figure below.

References

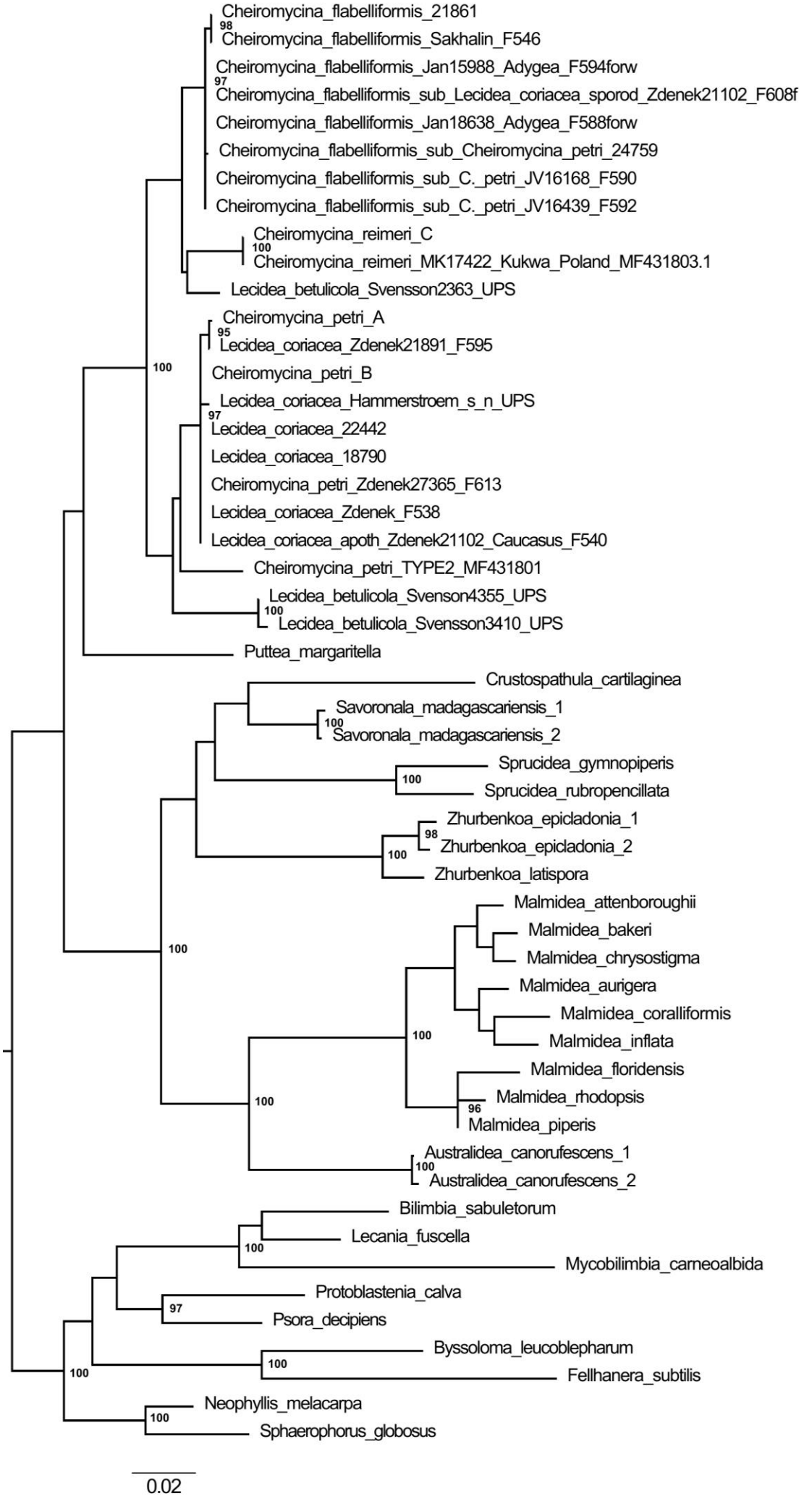
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Cheiromycina_flabelliformis_21861
98
Cheiromycina_flabelliformis_Sakhalin_F546
Cheiromycina_flabelliformis_Jan15988_Adygea_F594forw
97
Cheiromycina_flabelliformis_sub_Lecidea_coriacea_sporod_Zdenek21102_F608f
Cheiromycina_flabelliformis_Jan18638_Adygea_F588forw
Cheiromycina_flabelliformis_sub_Cheiromycina_petri_24759
Cheiromycina_flabelliformis_sub_C._petri_JV16168_F590
Cheiromycina_flabelliformis_sub_C._petri_JV16439_F592
Cheiromycina_reimeri_C
100
Cheiromycina_reimeri_MK17422_Kukwa_Poland_MF431803.1
Lecidea_betulicola_Svensson2363_UPS
Cheiromycina_petri_A
95
Lecidea_coriacea_Zdenek21891_F595
100
Cheiromycina_petri_B
Lecidea_coriacea_Hammerstroem_s_n_UPS
97
Lecidea_coriacea_22442
Lecidea_coriacea_18790
Cheiromycina_petri_Zdenek27365_F613
Lecidea_coriacea_Zdenek_F538
Lecidea_coriacea_apoth_Zdenek21102_Caucasus_F540
Cheiromycina_petri_TYPE2_MF431801
Lecidea_betulicola_Svenson4355_UPS
100
Lecidea_betulicola_Svensson3410_UPS
Puttea_margaritella
Crustospathula_cartilaginea
Savoronala_madagascariensis_1
100
Savoronala_madagascariensis_2
Sprucidea_gymnopiperis
100
Sprucidea_rubropencillata
Zhurbenkoa_epicladonia_1
98
Zhurbenkoa_epicladonia_2
100
Zhurbenkoa_latispora
Malmidea_attenboroughii
Malmidea_bakeri
Malmidea_chrysostigma
100
Malmidea_aurigera
Malmidea_coralliformis
Malmidea_inflata
Malmidea_floridensis
Malmidea_rhodopsis
96
Malmidea_piperis
100
100
Australidea_canorufescens_1
100
Australidea_canorufescens_2
Bilimbia_sabuletorum
Lecania_fuscella
100
Mycobilimbia_carneoalbida
Protoblastenia_calva
97
Psora_decipiens
Byssoloma_leucoblepharum
100
Fellhanera_subtilis
100
Neophyllis_melacarpa
100
Sphaerophorus_globosus
0.02