

Lomentospora valparaisensis

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***Lomentospora valparaisensis* E. Álvarez, sp. nov.**

Etymology. Referring to Valparaiso, where this fungus was collected, Italy Park, Valparaiso, Chile.

Classification — *Microascaceae*, *Microascales*, *Sordariomycetes*.

Hyphae hyaline to pale brown, 1–3 µm wide, thin- to thick-walled, smooth, and septate. Conidiogenous cells of two types: i) solitary, consisting of a single conidiogenous cell disposed laterally on undifferentiated hyphae or in side branches. *Conidiogenous cells* enteroblastic, percurrent (annellides), thin- and smooth-walled, cylindrical or slightly broad at the base and with several broad scars at the upper part, 6–40 × 1.5–4 µm, producing conidia singly, or in slimy masses similar in shape and size to the sessile conidia, but with a broader basal scar. This type of conidiogenous cells resembles those observed in *Scedosporium apiospermum*; ii) aggregated in small brushes, flask-shaped, often bearing a long, inconspicuously annellated zone, inflated at base. This type resembles those observed in *Lomentospora prolificans*. Morphologically, these strains seem to be intermediate between these previously cited species. *Conidia* sessile or situated on conidiogenous cells, at first hyaline, later becoming pale brown, thick- and smooth-walled, regularly ellipsoid, rounded at the ends, but with a small flattened area at the base, 5.5–6.5 × 4–5 µm. *Synnemata* and *sexual morph* not observed.

Culture characteristics — Colonies on Potato Dextrose Agar (PDA) attaining 15 mm diam after 14 d at 25 °C, velvety, olivaceous green, reverse blackish. Colonies on Sabouraud Dextrose Agar (SDA) attaining 12–15 mm diam after 14 d at 25 °C, velvety, olivaceous green; reverse black. Growth observed at 15, 25, 37, 40 and 42 °C, but no growth at 5 and 48 °C.

Typus. CHILE, Valparaiso, Italy Park, from soil, 2016, *F. Salas* (holotype Vlp0164, culture ex-type ChFC-164, ITS and *tub2* sequences GenBank MG495075 and MG544878, MycoBank MB824509).

Additional material examined. CHILE, Valparaiso, O'Higgins Square, from soil, 2017, *E. Álvarez*, specimen Vlp0505, culture ChFC-505, ITS and *tub2* sequences GenBank MG495076 and MG544879.

Notes — This fungus was isolated from soil samples from parks and squares of Valparaiso. Macroscopically, *L. valparaisensis* resembles *L. prolificans* (Hennebert & Desai 1974). Both species have dematiaceous colonies in all media tested. However, *L. valparaisensis* has green colonies, while *L. prolificans* exhibits olivaceous grey colonies that become olivaceous green with age. Microscopically, *L. valparaisensis* presents two types of conidiogenous cells; one of them resembling *L. prolificans*, and the other type resembles those observed in *S. apiospermum*. In fact, *L. valparaisensis* seems to be intermediate between *L. prolificans* and *S. apiospermum*.

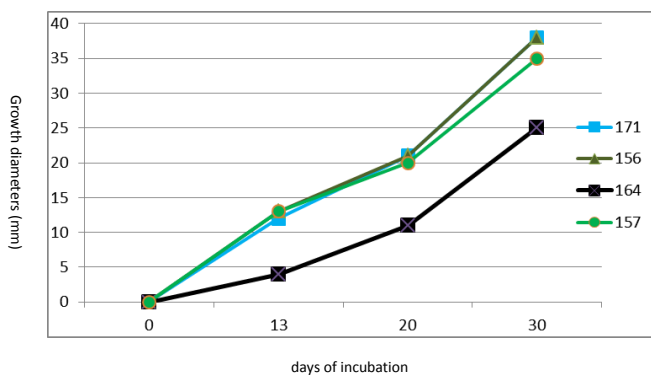
Based on BLAST search results, the closest hits with ITS sequences was *L. prolificans* (GenBank KC254095; Identities = 528/528 (100 %), no gaps) and *Petriella setifera* (GenBank KX449497; Identities = 489/533 (92 %), 14 gaps (2 %)); by using *tub2* the closest hits were *L. prolificans* (GenBank AJ890127; Identities = 470/481 (98 %), 3 gaps (0 %)) and

Colour illustrations. Italy Park, Valparaiso; colony after 15 d at 25 °C on PDA; two types of conidiogenous cells and conidia. Scale bars = 10 µm.

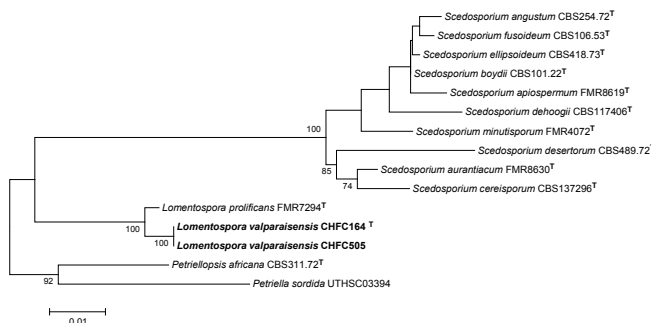
Pseudallescheria africana (GenBank AJ890132; Identities 437/484 (90 %); 16 gaps (3 %)).

Our phylogenetic inference, performed using the ITS and *tub2* sequences, demonstrated that our fungus represents a new species of the genus *Lomentospora*, being closely related to *L. prolificans*. *Lomentospora valparaisensis* can be distinguished from *L. prolificans* based on its slow growth at 15 °C compared to that of *L. prolificans*. They can also be distinguished based on the homogeneous size and shape of the sporangiospores (5.5–6.5 × 4–5 µm) compared with those observed in *L. prolificans* (3–7 × 2–5 µm). In addition, our strains showed mixed conidiogenous cells: i) those arising from undifferentiated hyphae, cylindrical to somewhat flask-shaped (*S. apiospermum* group-like); and ii) those flask-shaped, locally aggregated in small brushes (*L. prolificans*-like). Moreover, *L. valparaisensis* can be differentiated from *Scedosporium* spp. by its colony colour on various culture media.

Growth Rates at 15°C on PDA



156: *Lomentospora prolificans*; 157: *Lomentospora prolificans*;
171: *Lomentospora prolificans*; 164: *Lomentospora valparaisensis*



Maximum Likelihood tree obtained from the concatenated DNA sequences from two loci (ITS and *tub2*) of our isolates and sequences retrieved from GenBank database. Tree was built by using PhyML 3.0. Bootstrap support values ($\geq 70\%$) are given above the branches. *Petriellopsis africana* CBS 311.72 and *Petriella sordida* UTHSC 03-394 were used as outgroup. The new species proposed in the present study is indicated in **bold face**. ^T = ex-type.