
Aureobasidium tremulum
5.076 µm
1µm
X 7,000 5.0kV SEI SEM ITB-ChE 02-Nov-18 WD 6.2mm 09:52:07

Fungal Planet 907 – 19 July 2019

Aureobasidium tremulum Inamdar, Roh. Sharma & Adhapure, *sp. nov*.

Etymology. Named after the shaking and trembling behaviour of the yeast when observed under a light microscope (Latin *tremulum*= shaking, trembling).

Classification — *Aureobasidiaceae*, *Dothideales*, *Dothideomycetes*.

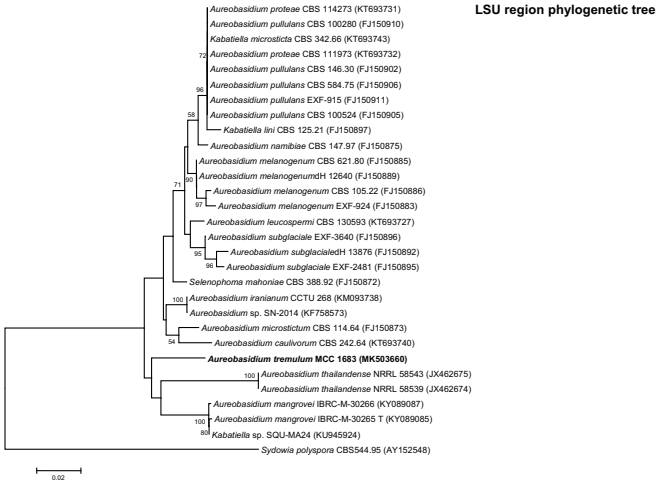
Initial growth as creamy white colonies on potato dextrose agar, later turning brown to dark brown. Colonies appear to be rough and dry. Each colony is round with a convex elevation from a cross-sectional viewpoint and the edges appear to be undulated. Growth is optimal on Saboraud dextrose agar (SDA). Colonies on nutrient agar did not become dark brown. *Cells* are generally oblong-shaped with very few cells assuming an irregular shape. *Budding* occurs frequently. The average size of mature, non-budding cells is 2.8 × 6.4 µm. *Sexual reproduction* was not observed. *Pseudohyphal* formation not observed. Optimal growth occurred at 20–25 °C, with some growth at 5–15 °C. The following carbon compounds are assimilated: D-glucose, L-arabinose, D-xylose, D-maltose, D-saccharose, D-Trehalose, D-melezitose, D-raffinose. No growth observed with glycerol, calcium-2-keto-gluconate, L- lactose while weak assimilation was observed for adonitol, xylitol, D-galactose, methyl-alpha- D-glucopyranoside and D-cellobiose.

Habitat — *Aureobasidium tremulum* was isolated as a culture contaminant in the laboratory of Department of Biotechnology and Microbiology of Vivekanand Arts, Sardar Dalipsingh Commerce and Science College, Aurangabad.

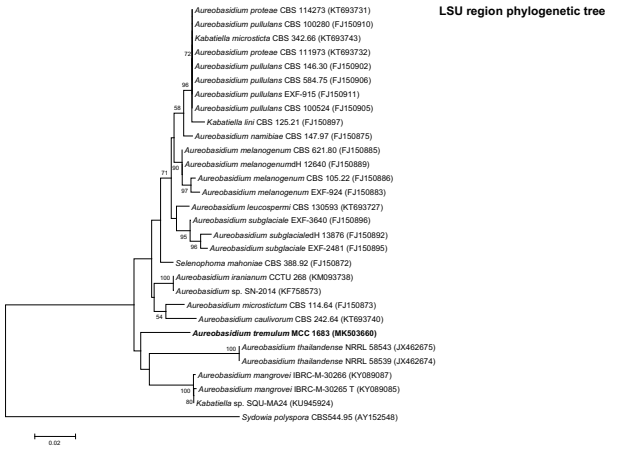
Distribution — India (Aurangabad, Maharashtra).

Typus. India, Aurangabad, Maharashtra, laboratory contaminant, July 2016, *A. Inamdar* (holotype MCC 1683 preserved as metabolically inactive strain, ITS and LSU sequences GenBank MK503657 and MK503660, MycoBank MB829941).

Notes — An initial BLASTn similarity search using the **LSU** region sequence in the NCBI type sequences nucleotide database showed the highest similarity to *A. lini* CBS 125.21 (GenBank MH866211; 98 % identity, 99 % query cover) followed by *A. melanogenum* strain CBS 105.22 (GenBank MH866219; 98 % identity; query coverage 97 %). The BLASTn similarity search in the NCBI type sequences database using the **ITS** sequence showed the highest similarity to *Kabatiella bupleuri* CBS 131304 (GenBank NR_121524; 95 % identity, 100 % query coverage) followed by *Aureobasidium iranianum* CCTU 268 (GenBank KM093738; 95 % identity, 99 % query coverage) and *A. melanogenum* CBS 105.22 (GenBank NR_159598, 95 % identity, 99 % query coverage). The neighbour-joining (NJ) phylogenetic analyses of ITS and LSU rRNA gene regions were done using sequences of other species of *Aureobasidium*. The phylogenetic tree topology clearly shows that the present strain UN-1 is novel and does not cluster with any known species of the genus. The phylogenetic analysis based on the ITS alignment shows that it forms a sister branch to *A. thailandense* NRRL 58543 (GenBank JX462675) and *A. mangrovei* IBRC-M-30266 (GenBank KY089087). In the phylogenetic analysis based on the LSU alignment, it does not group with known species but was placed at equal evolutionary distance with *A. caulivorum* CBS 242.64 (GenBank FJ150944).



Neighbour-joining tree based on the D1/D2 LSU rDNA region showing the position of *Aureobasidium tremulum* sp. nov. among related species within genus *Aureobasidium*. Bootstrap values of above 50 % are given at nodes based on 1 000 replications. The scale bar represents 2 % sequence difference.



Neighbour-joining tree based on the ITS region showing the position of *Aureobasidium tremulum* sp. nov. among related species within genus *Aureobasidium*. Bootstrap values of above 50 % are given at nodes based on 1 000 replications. The scale bar represents 1 % sequence difference.

Colour illustrations. India, Maharashtra, Aurangabad, Vivekanand Arts, Sardar Dalipsingh Commerce and Science College, Aurangabad. Growth of *A. tremulum* on potato dextrose agar; light microscopic (LM) view of *A. tremulum*; Cryo Scanning Electron Microscopic (CSEM) image of *A. tremulum.* Scale bars = 5 µm (LM image), 1 µm (CSEM image).

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