

Just Deserts: Exploring the Diversity of Melanized Fungi in Rocks and Biological Soil Crusts

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SIGNIFICANCE:

Melanized fungi are found all over the world in many different extreme environments (salterns, within and on top of rocks, human patients, plant infections, dishwashers) and now desert biological soil crusts!

Culturing, isolating and understanding them from desert biocrusts could help us understand their roles in other extreme environments.

COMPARISON TREE

434 Gene Tree of Dothideomycetes vs. Chaetothyriales

The tree shows a large clade of Dothideomycetes, with a smaller clade of Chaetothyriales highlighted by a purple bar and labeled 'Chaetoth'. Species names include Gladophialaphora immunda, Torospora multirugosa, Gladophialaphora pedunculata, Gladophialaphora psammophila, Gladophialaphora salinae, Gladophialaphora yegresii, Gladophialaphora carminea, Capronia sentimmerae, Exophiala alacranis, Exophiala acalopha, Capronia coronata, Capronia epiphyces, Exophiala dermatitidis, Rhinocladella mackenziei, Exophiala senticola, Exophiala oligosperma, Exophiala xenobiotica, Eurotium POF-1, Eurotium POF-2, Exophiala sideris, Exophiala mesophila, Exophiala aquamarina, Cyathophthora europaea, and Phialophora cincta.

RESULTS:

Black Yeast Composition Compared to Layer: A stacked bar chart showing the relative abundance of various fungal families in subsurface and surface layers. The x-axis is 'Layer' (Subsurface, Surface) and the y-axis is 'Abundance' (0.00 to 1.00). Families include Aureobasidiaceae, Cladophialaceae, Coniothyriaceae, Cuscutariaceae, Cypheliales, Dactylohectidaceae, Diaporthaceae, Dothioraceae, Dothioraceae, Herpotrichaceae, Lenthiclavaceae, Lepidodermaceae, Lophotremataceae, Microspheerellaceae, Peridermataceae, Phaeoacremoniaceae, Phaeoglossaceae, Sphaeriaceae, Tetracladiales, Tetrarhizaceae, Trichomeriaceae, and NA.

Capnodiates Alpha Diversity by Layer: A box plot showing alpha diversity (Shannon's H') for capnodiates in subsurface and surface layers. The x-axis is 'Layer' (Subsurface, Surface) and the y-axis is 'Alpha Diversity (Shannon)' (0 to 8). The observed diversity is shown as a horizontal line. A t-test result is displayed: T-test, p = 0.0079.

