ABSTRACT BOOK ABSTRACTS



A new ERA for global Dermatology 10 - 15 JUNE 2019 MILAN, ITALY

INFECTIOUS DISEASES (BACTERIAL, FUNGAL, VIRAL, PARASITIC, INFESTATIONS)

MALASSEZIA CLINICAL ISOLATES BEHAVIOR ON A RECONSTRUCTED HUMAN EPIDERMIS

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Introduction: Malassezia yeasts are implicated in skin diseases such as pityriasis versicolor (PV) and seborrheic dermatitis (SD). Biofilm formation represents a major microbial virulence attribute. Malassezia biofilm formation at the skin surface has not yet been addressed.

Objective: To evaluate Malassezia behaviour at the surface of a reconstructed human epidermis (RHE) of EpiSkinTM and SkinEthicTM RHE (Episkin, Lyon, France).

Material and Methods: Malassezia clinical isolates were recovered from volunteers with PV, SD and healthy participants. Yeasts of two clinical strains of M. furfur (from SD) and M. sympodialis (from PV) were inoculated into the RHE after an overnight culture on broth and suspended in phosphate buffered saline. The tissues were processed for image acquisition following 24 and 48 hours of incubation at 37°C, 5% CO2.

Results: Colonization of RHE with aggregates of Malassezia visible by histology, confocal microscopy and scanning electron microscopy (SEM) was detected following 24 hours of incubation; SEM showed yeast adherence to the RHE surface and attachment to each other, embedded within an extracellular matrix which is compatible with biofilm formation at the RHE surface, by both Malassezia species. At 48 hours a slight increase in the number of microorganisms was noticeable with expansion of the communities of surface-associated cells enclosed in a thicker matrix, especially for M. sympodialis. SkinEthicTM RHE was superior to EpiSkinTM in supporting growth and adherence of Malassezia clinical isolates.











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Conclusions: The ability of M. furfur and M. sympodialis strains to colonize a RHE surface and biofilm formation was hereby demonstrated; its three-dimensional structure was evident under confocal microscopy and SEM. As a preliminary research aiming to unveil Malassezia interaction at the surface of RHE, we found SkinEthicTM RHE the best RHE option to pursue a more extensive study of biofilm formation and host response evaluation.



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