

TITLE: HIGH CAPACITY OF ADHESION, BIOFILM FORMATION, COLONIZATION AND PENETRATION OF *RHODOTORULA MUCILAGINOSA* IN DERMAL REGENERATION MATRIX

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ABSTRACT:

Rhodotorula sp. are yeasts widely found in nature, traditionally considered non-virulent saprophytes and common contaminants. May colonize human epithelium as well as respiratory and gastrointestinal tract. However, in the last decades, it has been presented as an opportunistic pathogen, mainly in immunocompromised individuals. There have been reports in the literature that *Rhodotorula* sp. is included as an infectious agent in fungemia, endocarditis, meningitis, peritonitis, keratitis and ventriculitis, from environmental sources or even from the microbiota. It is important to note that yeasts belonging to this genus have a high level of resistance to fluconazole and a higher tolerance for itraconazole. Thereby, this work aims to evaluate the capacity for adhesion, biofilm formation, colonization and penetration of *Rhodotorula mucilaginosa* in acellular dermal matrix (ADM) used in the restoration of dermis in burned patients. Two isolates of *Rhodotorula mucilaginosa* from the Micoteca of the Laboratory of Medical Mycology, Laboratory of Teaching and Research of Clinical Analyzes (LEPAC / UEM) and one ATCC 64684 were evaluated in the adhesion and biofilm assays. The assay of the colonization and penetration on the ADM was performed by the method of counting colony forming units (CFU) with three and seven days of incubation. All the isolates had high capacity to adhere and to form biofilm on abiotic surface. In three days, the isolates were able to colonize the surface of the device, and cross the ADM. On the seventh day, the count of colony forming units increased by 1 Log, compared to the three day count. It is possible to imply that commensal yeasts which are easily found in hospital environments, in equipment surfaces or skin health professionals and patients create a potential risk to immunosuppressed patients, such as burn patients. Moreover, the ADM

provides a favorable environment to the growth of microorganisms which can lead to a serious infection.

Keywords: *Rhodotorula* sp.; Acellular dermal matrix; Biofilm; Burn patient.

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