Journal of Innovations in Pharmaceutical and Biological Sciences (JIPBS)
ISSN: 2349-2759
Available online at www.jipbs.com

Research article

Evaluation of protein mass Fingerprint-MS of clinical isolates of *Candida* spp. by MALDI-TOF MS

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Received on: 12/04/2021, Revised on: 07/05/2021, Accepted on: 08/05/2021, Published on: 01/07/2021.

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Keywords: Candida, Fingerprint, Fungal, Identification and MALDI-TOF.

Vol. 8 (3): 24-30, Jul-Sep, 2021.

Abstract

Invasive fungal infections have high levels of mortality, especially in immunocompromised patients. Clinical isolates of *Candida* spp. are responsible for more than 50% of the researched examples. Matrix Assisted Laser Desorption Ionization Time of Flight (MALDI-TOF) offers fast and accurate identification of the microorganism, optimizing the beginning of antifungal therapy. In recent years, studies are being carried out on the applicability of MALDI-TOF in fungal identification. However, few data were found on fingerprint-MS in different species of *Candida*. The present study aims to evaluate a Protein Mass Fingerprint (PMF) of clinical isolates of *Candida* spp identified by MALDI-TOF MS. For this purpose, it was performed a multivariate analysis of the spectra. There was a consistent spectrum profile among *Candida* species between 3 and 15 KDa. The most intense peaks being between 3 and 8 KDa. It was noted the existence of characteristic signs between species. *C. albicans* shows two intense signs, the first at 4.3 and 4.4 KDa and the other at 5.1 and 5.2 KDa. The others species show an intense signal in 4.4 - 4.5 KDa. *C. lusitaniae* shows intense signals between 6.0 - 6.1 and 6.6 - 6.7 KDa, C. *guilhermondii* between 6.0 - 6.1 and 6.1 –6.2 KDa. *C. glabrata* an intense signal in 5.5 - 5.6 KDa and a less intense signal in 11.0-11.1 Kda. Thus, it is possible to outline a spectral profile of *Candida* spp. The characterization of the spectral profile can help in the critical evaluation of fingerprint-MS, assisting the analyst in the decision-making process and in the expansion of reference library.