Microbial Diagnostic Applications of Mass Spectrometry

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ABSTRACT BOOK

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IDENTIFICATION OF BRAZILIAN WILD-TYPE ISOLATES OF *Aspergillus fumigatus* BASED ON POLYPHASIC APPROACH INCLUDING MALDI-TOF MS TECHNIQUE

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Currently is accpeted that the majority of the unknown species in the world are in the tropics and Brazil possibly holds more than 25% of this biodiversity. In the filamentous fungi case the number of new species described for science in Brazil is very small when compared with the potentiality of the region. In addition, there is expected to find a large biological variability inside of described and new fungal species. Species belonging to the *Aspergillus* genus are responsible for invasive aspergillosis. This is gaining prominent position because of their capability to affect immunocompromised and immunosuppressed patients and aspergillosis is most commun mould infection more recognised worldwide. A better understanding about the regional fungal traits can help to a fast and effective treatment of patients with aspergillosis. In order to set up a collection containing regional fungal strains with clinical relevance to attend the great variability (morphology, biochemical, genomics and proteomics patterns) of the Brazilian fungal population 13 wild-type *Aspergillus* isolates from section *Fumigati* were studied. They were isolated from the five official Brazilian regions (North, Northeast, Centre-east, Southeast and South) and identified based on a polyphasic approach which is. based on morphological, biochemical, molecular biology and spectral analyses by MALDI-TOF MS. After collected, purified and identified all 13 Aspergilli isolates were preserved at Filamentous Fungi Collection of Ribeirão Preto (CFF-RP), São Paulo, Brazil. Data obtained from the polyphasic approach led to a final fungal identification at species level. Overall, MALDI-TOF MS was the fast technique for identify the species. However, molecular biology was the gold standard for the species identification once it was used to validate data obtained from the other techniques mentioned above. Moreover, either MALDI-TOF MS or molecular biology should not be used as a single step for fungal identification.

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