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The use of the matrix assisted laser desorption/ ionization time of flight mass spectrometry (MALDI-TOF MS) technique for microbiological diagnosis

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This scientific communication aims to highlight the use of Matrix-Assisted Laser Desorption/Ionization Time-of-Flight Mass Spectrometry (MALDI-TOF MS) technique as a tool for microbiological diagnosis. The routine identification of pathogenic microorganisms is classically performed by phenotypic methods based on the growth of the microorganism in different culture media. Although culture is considered the gold standard of identification, it becomes a time-consuming procedure that can directly impact treatment and can cause serious harm to the patient. As an alternative, MALDI-TOF MS technique has been increasingly used in the routine of microbiological laboratories for the routine identification of bacteria and fungi of medical importance . Although the investment for the acquisition of a mass spectrometer is considered relatively high, the input costs required for identification by MALDI-TOF MS are low compared to molecular techniques. In addition, the use of MALDI-TOF MS makes the microbiological diagnosis process much faster, reducing the laboratory report by approximately 24 hours. In addition, the use of MALDI-TOF MS also allows the detection of antimicrobial resistance phenotypes. Thus, the use of MALDI-TOF MS can play an important role in the routine of microbiological diagnostic laboratories.

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