

# MALDI-TOF Mass Spectrometry in Microbiology

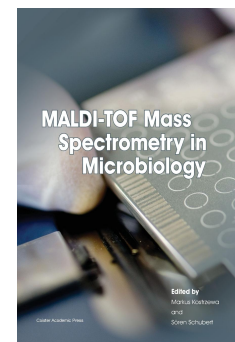
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Recent years have seen a phenomenal increase in the use of MALDI-TOF mass spectrometry (MALDI-TOF MS) in microbiology laboratories. The introduction of this technology to microbiology has been a major success and MALDI-TOF MS is now used for routine diagnostic or diagnostic-like purposes in clinic, veterinary, pharma and food microbiology laboratories. It has also evolved into a powerful tool for the analysis of organisms in the environment and for research into microbial communities. The throughput capabilities, accuracy and low running costs of a MALDI-TOF MS system enable analyses at a scale which was not possible until recently.

In this timely and up-to-date book, experts in the field provide an overview of the application of MALDI-TOF MS in key areas of microbiology and discuss the impact this modern technology is having on laboratory practice and patient outcome. Several chapters cover applications in clinical and veterinary diagnostic laboratories, food microbiology, environmental microbiology and strain collections. Further chapters discuss the utilization of MALDI-TOF MS for the analysis of challenging microbial groups such as yeast and anaerobic bacteria. In addition, new applications such as microbial typing, DNA analysis and the detection of antibiotic resistance are also covered. The final chapter provides a valuable overview of potential future trends and developments in MALDI-TOF MS and assesses the impact of the technology in microbiology.

This authoritative volume will be indispensable for all microbiology laboratories.

**Introduction.** A Personal Vision of the MALDI-TOF-MS Journey from Obscurity to Frontline Diagnostics (*Haroun N. Shah*)

**Chapter 1.** Matrix Assisted Laser Desorption Ionization Time-of-Flight Mass Spectrometry for the Clinical Laboratory (*Chris D. Doern, Robert C. Jerris and Mark D. Gonzalez*)

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**Chapter 6.** Application of MALDI-TOF MS in Veterinary and Food Microbiology (*Claudia Hess, Merima Alispahic and Michael Hess*)

**Chapter 7.** MALDI-TOF MS for Environmental Analysis, Microbiome Research and as a Tool for Biological Resource Centres (*Markus Kostrzewa, Chantal Bizet and Dominique Clermont*)

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