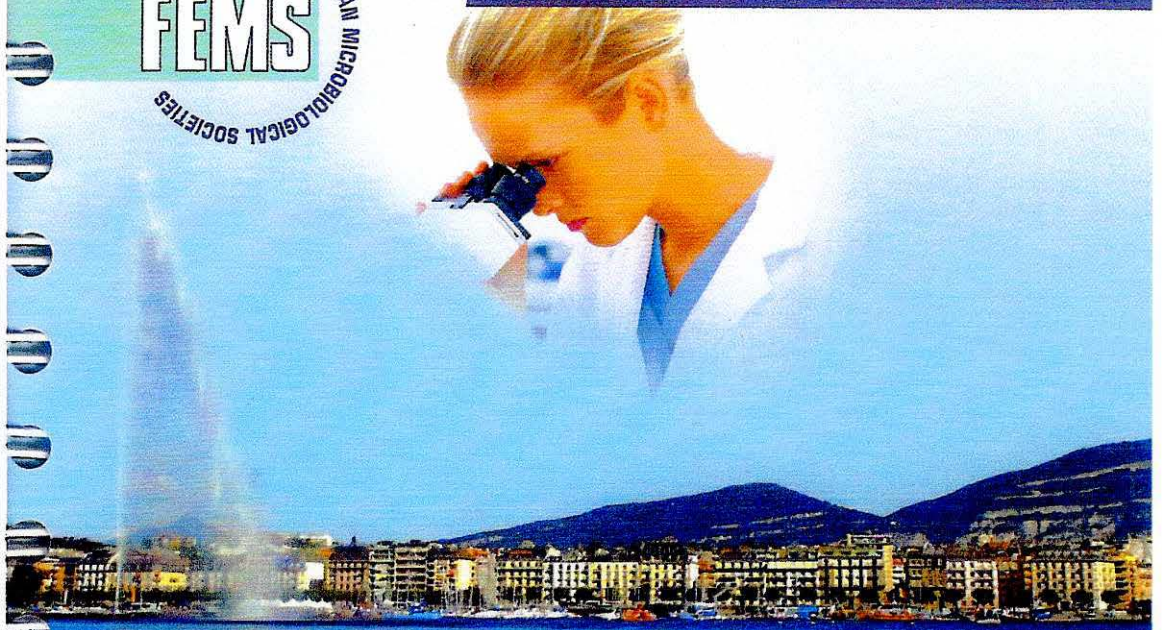


PROGRAM BOOK

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IDENTIFICATION / CHARACTERISATION AND AUTHENTICATION OF MICROBIAL STRAINS BY MALDI-TOF ICMS

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The identification of species is an important goal in microbial taxonomy. Information about each microorganism (e.g. morphological description, physiological and biochemical properties, molecular biology sequencings, ecological roles, and societal risks or benefits) is key element in this process. Identifications can be a long and seemingly never-ended process with frequent revisions of the taxonomic schemes. The application of sound tools to smooth the progress of identification is crucial for the progress of the microbial sciences. Matrix Assisted Laser Desorption Ionisation - Time-Of-Flight Intact Cell Mass Spectrometry (MALDI-TOF ICMS) is a physic-chemical technique that has been contributed for a great increase of knowledge in the microbial identification and authentication of microbial strains. This technique generates microbial mass spectra that are used as a cellular microbial fingerprint. This fingerprint has been employed for the microbial phenotype typing. In MALDI-TOF ICMS the cellular microbial spectrum presents protein masses in a range of 2000 to 20000 Da, where important protein appear (e.g. ribosomal proteins), that is a taxon specific fingerprinting. The advantages of this novel approach as a microbial identification and authentication method are the simple sample preparation procedure, short time (few minutes) for analysis and reliability of the data and inexpensive (basically labour only). Here, modern polyphasic methods that include MALDI-TOF ICMS technique for microbial identifications and authentications will be discussed. The relevant contribution that this new technique has been done for quality control programmes in Culture Collections will be also presented.