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Abstract (poster session)

Validation of MALDI Biotyper for the identification of Enterococcus species

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Objectives: Our laboratory is the Belgian Reference Centre for Enterococci. In the framework of these activities, the applicability of the microflex LT MALDI-TOF MS Biotyper (Bruker) was evaluated for the identification of Enterococcus species. Since for some Enterococcus species only 3 or less spectra were available in the MALDI Biotyper database version 3995, a large set of strains was investigated. Methods: For the validation of the MALDI Biotyper, 136 enterococcal strains (76 reference strains and 60 clinical isolates identified by in-house validated ddl-PCR and species-specific PCR) were tested. The collection consisted of E. faecalis (n=20), E. faecium (n=21), E. gallinarum (n=20), E. raffinosus (n=2), E. casseliflavus (n=20), E. avium (n=12), E. hirae (n=21) and E. durans (n=20). Identification was done according to the instructions of the manufacturer using an overnight culture. A log-score >2 was used as cut-off. To solve discrepant identification results, 16S rDNA PCR and sequencing were applied. Results: Using the above mentioned cut-off, for 20/20 E. faecalis strains, 21/22 E. faecium strains, 1/2 E. raffinosus strains, 19/20 E. gallinarum strains, 20/20 E. casseliflavus strains, 19/20 E. durans strains, 20/21 E. hirae strains, 8/12 E. avium no discrepant result was obtained between the MALDI Biotyper identification and the previous identification. In addition, the identification was confirmed for 1 E. raffinosus, 1 E. gallinarum, 1 E. durans, 2 E. avium, but with a log-score varying between 1.74 and 1.95). The following discrepant results were obtained: 1x L. murinus instead of E. faecium, 1x E. faecium instead of E. hirae, 2x E. faecalis instead of E. avium. 16S rDNA sequencing confirmed the MALDI Biotyper identification for 3/4 except for the E. hirae strain. Conclusions: The MALDI Biotyper is a fast, convenient and reliable method for the identification of Enterococcus species.