

**P0437 Evaluation of the rapidBACpro II kit for the rapid identification of microorganisms directly from blood cultures using MALDI-TOF mass spectrometry**

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**Background:** The implementation of MALDI-TOF MS for the identification of microorganisms directly from blood cultures has shown to be the most impacting application of this methodology. So far, both non-commercial and commercial methods are available for the preparation of positive blood culture samples for MALDI-TOF analysis. In this study, a novel commercial method, the rapidBACpro II, is evaluated by three clinical microbiology laboratories.

**Materials/methods:** Positive blood culture samples (384) from 3 clinical microbiology laboratories have been processed in parallel using the rapidBACpro II kit (Nittobo, Tokyo, Japan) and the Sepsityper kit (Bruker Daltonics, Bremen, Germany). Both kits were used according to the manufacturers' instructions. All isolates were analyzed in duplicates. Both the score and the two top identifications were recorded.

**Results:** Overall, 94.5% of the monomicrobial isolates were correctly identified by the rapidBACpro II kit at the species level -99.4% of the gram negatives and 96.4% of the gram positives- versus 85.1% using the Sepsityper kit -91.1% of the gram negatives and 85.7% of the gram positives-. Remarkably, 46/47 of the *Staphylococcus epidermidis* isolates were reliably identified using the rapidBACpro II kit versus 27/47 with the Sepsityper kit. Besides, 77.8% of the yeasts were identified using the rapidBACpro II kit vs 66.7% with the Sepsityper kit. The score values provided by both kits were similar for all the groups of microorganisms analyzed.

From the polymicrobial blood cultures, in 2/10 cases the two species present were detected with both kits whilst only one of them was identified in the remaining samples. Finally, 7 isolates could not be reliably identified using the rapidBACpro II kit versus 17 with the Sepsityper kit.

**Conclusions:** Both commercial kits have demonstrated to provide reliable species-level identification of the microorganisms present in positive blood cultures. Both kits have similar Turn-around- and hands-on time. However, the rapidBACpro II kit allowed a higher rate of microorganisms correctly identified. This fact was particularly interesting in the case of staphylococci and streptococci in order to elucidate their importance.