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**Objectives:**

In line with the achievement of a prompt and adequate initial antimicrobial therapy in critical care patients, this study assessed the validity of Liofilchem® PATHOGENIC SYSTEM AST, a novel rapid diagnostic system for the detection, presumptive identification and susceptibility testing of pathogenic microorganisms directly from clinical specimen

**Methods:**

- Between June & August 2013, 25 vascular prosthetic graft samples and 19 bronchoalveolar lavages samples were collected from the Intensive care and Vascular Surgery Units of Bordeaux Teaching Hospitals
- In addition, a panel of 12 reference strains and well characterized clinical strains were included as positive and negative control strains. In parallel, all clinical samples were processed by the hospital routine Diagnostic Laboratory
- The microbroth dilution approach was used as a reference method for MIC determinations and API strips together with Maldi-tof technology were used as reference methods for the identification of the microorganisms.
- 0.2 mL of the clinical specimen was dispensed in a tube containing 3 mL of nutrient broth, then, incubated at 37° C (2 h). After the enrichment step, 0.2 mL and 0.01 mL of the broth culture was transferred into 2 separate vials (suspension A and suspension B).
- 0.2 mL of suspension A were dispensed into the first 16 wells (ID panel). Another 0.2 mL of suspension B was dispensed in wells 17 to 32 (AST panel). The tray was then incubated at 37° C for 18-24 h.
- Color change in the first 16 wells indicated the species of the microorganisms whilst color change in the remaining 16 wells indicate their susceptibility profiles to a panel of clinically relevant antibiotics.

**Results:**

- The color based presumptive identification of the microorganisms and their susceptibility data obtained after 24 h for all 51 samples tested during this study were in total concordance with those obtained by the Diagnostic Laboratory and by the reference method. The test identified correctly monomicrobial as well as polymicrobial clinical specimens.
- It is noteworthy that the absence of color change could mean absence of microorganism(s) or presence of microorganism(s) non included in the panel tested by the system.

**Conclusion:**

Liofilchem® PATHOGENIC SYSTEM AST is a promising method for obtaining only after 24 h, both susceptibility data and a presumptive identification of the microorganisms from patients in Intensive Care and Vascular Surgery Units for an optimal clinical management of these vulnerable classes of patients.

