

ORT_25 - Phenotypical identification and antimicrobial resistance profile analysis of *Staphylococcus epidermidis* strains isolated from an immunobiological facility

Júlia Maria Peixoto Loureiro Ourique¹; Rhuan Carlos Coelho Guimarães¹; Talita Bernardo Valadão¹; Paula Araujo de Souza¹; Amanda Silva Costa¹; Joyce Modesto de Andrade¹; Luciana Veloso da Costa¹; Marcelo Luiz Lima Brandão¹.

¹Fiocruz/Bio-Manguinhos

Introduction: In industries that produced parenteral drugs, many processes must be carried out aseptically, following the standards established in current legislation. Microbiological tests are performed to identify potential contaminants in the production chain, as these can compromise the quality and safety of products. *Staphylococcus epidermidis* is a Grampositive coccus, coagulase-negative, and a commensal that colonizes skin and mucous membranes, being the species of the genus most prevalent in humans. It is considered an opportunistic pathogen, being one of the most frequent causes of nosocomial infections. The identification of *S. epidermidis* strains is extremely important for evaluating production and taking preventive and corrective actions when necessary.

Objectives: The aim of this study was to phenotypic characterize strains of *S. epidermidis* isolated from production areas of an immunobiological pharmaceutical unit.

Methodology: Fifty-five strains were isolated from different samples from 2020 to 2023 and identified as *S. epidermidis* by VITEK®2 (bioMérieux). Subsequently, these strains were analyzed by MALDI Biotyper® (Bruker), and then, antibiogram analysis was performed using AST cards in VITEK®2.

Results: Among the 55 strains, 9.09% had a score lower than 2.0 on the MALDI Biotyper®, which means a low confidence identification of genus and species. For the antibiogram assay, only the 50 strains that presented identification of *S. epidermidis* with a score equal to or greater than 2.0 on the MALDI Biotyper® were analyzed. Among the strains, 10 showed resistance, the majority to oxacillin (n=7; 14.0%), gentamicin (n=5; 10.0%) and clindamycin (n=2; 1%), rifampicin (n= 1; 0.5%) and trimethoprim (n=1; 0.5%). One strain showed resistance to three different classes of antibiotics, oxacillin, gentamicin and trimethoprim, being considered multiresistant according to the criteria proposed by Magiorakos et al., 2012.

Conclusion: The identification by VITEK®2 differed from the results provided by MALDI Biotyper®. Genotypic identification methods are necessary to confirm the identification, as well as to type the strains, to determine possible sources of contamination. Regarding resistance, *S. epidermidis* may present multidrug resistance, as observed in a strain analyzed in the present study.

Keywords: VITEK®2; MALDI Biotyper; *Staphylococcus epidermidis*