Antimicrobials have been associated with an improvement in the treatment of infectious diseases but its misuse has led to the development of resistant and multi-resistant strains. So it has become challenging to treat infectious diseases. (1) It is important to promptly identify the pathogen and to test its susceptibility to antibiotics in order to correctly treat the disease.

Staphylococcus spp. have the ability to grow on 10% NaCl. They can also be coagulase-positive and usually pathogenic (for example, Staphylococcus aureus), or coagulase-negative which are mostly part of human microbiome (for example, Staphylococcus haemolyticus). (2) The growth and production of yellow colonies with a yellow halo on Mannitol-Salt Agar is described as a presumptive way of identify S. aureus. It is also described as a differentiator between Coagulase-Positive and Coagulase-Negative strains. (3) Slide Coagulase Test is a fast test that is usually used to identify S. aureus, instead of Tube Coagulase Test because it is known for being accurate and allows early release of results. (4)

**Results**

**Colonies Growth on Solid Culture Media**

- Left plate: Growth of big greyish, beta-hemolytic colonies on Blood Agar
- Right plate: Growth of yellow colonies surrounded by an yellow halo on Mannitol-Salt Agar.

**Vitek2**

Species Identification: Staphylococcus haemolyticus (99% probability)

**Pastorex Staph Plus**

Left: Negative control showing no agglutination.
Right: Sample result, showing agglutination which is interpreted as a Coagulase-Positive sample.

**MicroScan WalkAway**

- **CV**: CV +
- **VP**: VP +
- **BE**: BE +
- **PGT**: PGT +
- **LAC**: LAC +
- **ARA**: ARA +
- **INU**: INU +
- **BAP**: BAP +
- **BE**: BE +
- **NACL**: NACL +
- **MNS**: MNS +
- **INT**: INT +
- **IDR**: IDR +
- **PHO**: PHO +
- **ARG**: ARG +
- **MAN**: MAN +
- **MNS**: MNS +

Species Identification: Staphylococcus haemolyticus (99,99% probability)

**Discussion**

Although Mannitol-Salt Agar is used presumptively S. aureus (3), some Staphylococcus Coagulase-Negative have the ability to ferment mannitol and, in this way, they can lead to false positive results with this method. The Pastorex® Staph Plus Test is easy to execute allowing rapid results on S. aureus but one study showed that S. haemolyticus can lead to false-positive results by this method, probably due to the production of Capsular Polysaccharide. (4)

As previously written in the literature, no phenotypic test alone can identify S. aureus. Automatic methods and PCR may be needed to confirm the results, once the difference has important clinical implications. (4)(5)

**Bibliography**