P2617 Evaluation of CHROMID S. aureus Elite agar for the detection of Staphylococcus aureus in clinical and screening samples

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Background: Staphylococcus aureus (SA) is an important bacterium in human beings; it can colonise, invade and cause infections that range in severity from minor to fatal. It is of importance to diagnose and to screen for SA in order to limit the possible risk of secondary infection or chronic lung infection, especially in Cystic Fibrosis (CF) patients. CHROMID® S. aureus Elite agar (SAIDE, BioMérieux) is a chromogenic medium for the selective isolation and the direct identification of SA that favours its growth, facilitates its detection by enzymatic activity, and inhibits most of annex flora (AF).

Materials/methods: In this study, we evaluated the analytical performance of SAIDE for SA detection in clinical specimens and screening samples that were prospectively collected between July 2017 and April 2018 in LHUB-ULB hospitals. Four categories of samples were analysed for the presence of SA: biopsies, wound smears and drainage fluids (Cat. A; n = 101), nasal swabs (Cat. B; n = 126), blood cultures (Cat. C; n = 16), and respiratory samples of CF patients (Cat. D; n = 98). In addition to SAIDE, samples of categories A-C were inoculated on Brilliance Staph 24 AGAR (BRI) and samples of Cat. D on BBL™ CHROMagar™ Staph (CHR) and MANNITOL Salt Agar (MAN). After 24h, 48h and 72h of incubation, colonies with expected morphologies/colours were identified by Mass Spectrometry and the presence of AF was evaluated. The inter-medium disagreement was estimated by the matched case control McNemar test and Mid-P exact.

Results: Sensitivity, specificity and selectivity results of different media are summarised in the table. SAIDE showed a significantly higher specificity (89.58 %) in comparison to BRI (62.5 %) after 48h of incubation for Cat. A, as well as a significantly higher inhibition of AF in comparison to CHR for Cat. D. No significant change was observed for samples of cat. B-C.

Conclusions: SAIDE showed comparable capacity to detect and higher capacity to select (Cat. D) SA in comparison to the other tested media. In addition, no significant lower performance was observed. CHROMID® S. aureus Elite agar could therefore be recommended for routine laboratory diagnosis and screening of S. aureus.
<table>
<thead>
<tr>
<th>Cat. n° of pro</th>
<th>Incubation time</th>
<th>24h</th>
<th>48h</th>
<th>72h</th>
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<td></td>
<td>SAD E</td>
<td>CHR</td>
<td>MAN</td>
<td>BRI</td>
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<tr>
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<td>48.98**</td>
<td>11.24</td>
<td>ND</td>
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</table>

AF: Annex Flora
ND: Not done
* Significant difference in comparison to BRI (p<0.0005)
** Significant difference in comparison to CHR (p<0.0000001)