Use of Mueller-Hinton Agar as Amylase Testing Medium

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Readily available Mueller-Hinton agar was used to detect starch hydrolysis by Streptococcus bovis.

The amylase test is useful in diagnostic laboratories for the differentiation of certain organisms, such as Streptococcus bovis from other group D streptococci (1) or Pseudomonas stutzeri from other pseudomonas species (2, 4). Nevertheless, technologists in laboratories rarely perform this test due to the unavailability of prepared amylase testing medium. However, this inconvenience could be resolved by using the readily available Mueller-Hinton agar medium, which is commonly used for antimicrobial disk susceptibility tests (3).

Mueller-Hinton agar consists of 0.15% starch, which can be used for amylase testing. We have compared this Mueller-Hinton agar to the starch agar used by Facklam (1) on 10 strains of S. bovis and 30 strains of enterococci that were obtained from the National Center for Disease Control.

The procedure is very simple. A heavy inoculum was streaked onto the Mueller-Hinton agar plate with a bacteriological loop. After overnight incubation, the plate was flooded with Gram iodine solution. If the organism produced amylase, a clear zone would be observed around the inoculum against the otherwise dark-blue background. The reaction should be read within a few minutes or the blue color will disappear.

All strains of S. bovis showed positive amylase reaction, whereas all strains of enterococcus showed negative amylase on both starch agar and Mueller-Hinton agar (Table 1). Three isolates of P. stutzeri were also tested with this testing medium and all showed positive reactions. Therefore, our results suggest that Mueller-Hinton agar can be used as an amylase testing medium.

<table>
<thead>
<tr>
<th>Strain (no.)</th>
<th>No. with positive amylase reaction on:</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Mueller-Hinton agar</td>
</tr>
<tr>
<td>S. bovis (10)</td>
<td>10</td>
</tr>
<tr>
<td>Enterococci (30)</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 1. Comparison of amylase reactions of S. bovis and enterococci tested on two media.

LITERATURE CITED