Evaluation of Three Methods (StrepB Carrot Broth™, LIM Broth, and Granada Agar) for Recovery of Group B Streptococci.

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### Abstract

Several microbiological assays exploring different approaches and media have been developed for the detection of Group B Streptococci (GBS). The goal of this study was to evaluate three methods (the new StrepB Carrot Broth™ and Granada Agar against the CDC-recommended LIM Broth) for the recovery of GBS isolates in diluted samples. All three methods presented 100% sensitivity in dilutions up to 10⁻³. However, further studies are needed to compare the three methods under more controlled conditions. A concentration of 10⁻⁲ was the most sensitive method. At concentration of 10⁻⁴, LIM Broth outperformed the Granada Agar in 22 (27%) instances while Granada Agar was superior in only four cases (5%). StrepB Carrot Broth™ was the most sensitive method. This method outperformed Granada Agar in 22 (27%) instances while Granada Agar was superior to StrepB Carrot Broth™ in only four cases (5%). StrepB Carrot Broth™ was the most sensitive method. This method was inoculated, incubated, and interpreted according to manufacturer's recommendations.

### Materials & Methods

#### Isolates

In parallel, isolates were selected from Group B Streptococci that were used in the study.

#### Sample Preparation and Inoculation

A suspension equivalent to 0.5 McFarland was prepared for each isolate.

#### Quality Control

Positive samples can develop a color change in as early as 6 hours of incubation in StrepB Carrot Broth™. The intent of this study is to develop a color change reaction. These isolates did not have the typical characteristics of GBS on the blood agar plate.

#### Results

- **StrepB Carrot Broth™**, LIM Broth, and Granada Agar were able to recover GBS in 100% (6 of 6) of samples. In simulations of low GBS count (10⁻⁴), StrepB Carrot Broth™ was the most sensitive method (82%; followed by LIM Broth (78%) and Granada Agar (74%). StrepB Carrot Broth™ was the most sensitive method (82%; followed by LIM Broth (78%) and Granada Agar (74%).

#### Interpretation

- All isolates that yielded GBS after subculture to blood agar plate were considered as positive.

#### Discussion

- Based on these findings, all three methods are very reliable in GBS detection considering the fact that most clinical specimens, when positive for GBS, and most have a GBS count above 10 CFU/mL.

### References


### Table 1: Comparison of sensitivity among methods evaluated (StrepB Carrot Broth™, LIM Broth, and Granada Agar)

<table>
<thead>
<tr>
<th>Method</th>
<th>CFU/mL (Dilution)</th>
</tr>
</thead>
<tbody>
<tr>
<td>StrepB Carrot Broth™</td>
<td>10⁻¹⁻² (81/81)</td>
</tr>
<tr>
<td>LIM Broth</td>
<td>10⁻¹⁻² (81/81)</td>
</tr>
<tr>
<td>Granada Agar</td>
<td>10⁻¹⁻² (81/81)</td>
</tr>
</tbody>
</table>

1:10 Dilution