INTRODUCTION

Selective Streptococcus Agar is designed for the isolation of group A streptococci from respiratory sources.

PERFORMANCE TEST PROCEDURE

1. Inoculate representative samples with broth cultures diluted to contain $10^3$–$10^4$ CFU/0.01 mL.
   a. To each plate, add 0.01 mL of the dilution and streak for isolation.
   b. Incubate plates at 35 ± 2 °C in an aerobic atmosphere supplemented with carbon dioxide.
   c. Include BD Trypticase™ Soy Agar with 5% Sheep Blood (TSA II) plates and Chocolate II Agar plates as nonselective controls for all organisms.
2. Examine plates after 18–24 h for amount of growth, inhibition, colony size and hemolytic reactions.
3. Expected Results

<table>
<thead>
<tr>
<th>Organisms</th>
<th>ATCC®</th>
<th>Recovery</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Streptococcus pyogenes</em></td>
<td>19615</td>
<td>Fair to heavy growth of pinpoint to very small colonies surrounded by zones of β-hemolysis.</td>
</tr>
<tr>
<td><em>Streptococcus pneumonia</em></td>
<td>6305</td>
<td>Fair to heavy growth; colonies surrounded by zones of α-hemolysis.</td>
</tr>
<tr>
<td><em>Escherichia coli</em></td>
<td>25922</td>
<td>Inhibition (partial to complete)</td>
</tr>
<tr>
<td>Neisseria subflava</td>
<td>14799</td>
<td>Inhibition (partial to complete)</td>
</tr>
</tbody>
</table>

*Recommended organism strain for User Quality Control.

NOTE: This medium is exempt from User QC testing according to CLSI M22-A3.

ADDITIONAL QUALITY CONTROL

1. Examine plates as described under “Product Deterioration.”
2. Visually examine representative plates to assure that any existing physical defects will not interfere with use.
3. Determine the pH potentiometrically at room temperature for adherence to the specification of 7.3 ± 0.2.
4. Note the firmness of plates during the inoculation procedure.
5. Incubate uninoculated representative plates at 35 ± 2 °C for 72 h and examine for microbial contamination.

PRODUCT INFORMATION

INTENDED USE

Selective Streptococcus Agar is designed for the isolation of group A streptococci from respiratory sources.

SUMMARY AND EXPLANATION

Roantree et al.1 introduced a medium for isolation of group A beta-hemolytic streptococci. The medium enriched with yeast nucleic acid and maltose promoted increased colony size and enhanced clarity and sharpness of hemolytic zones produced by these organisms.2,3

PRINCIPLES OF THE PROCEDURE

Selective Streptococcus Agar is prepared from beef extract and casein peptone, which are relatively free of dextrose, permitting the addition of animal blood to detect hemolytic activity. The incorporation of the antimicrobial agents, neomycin and polymyxin B, provides suppression of normal throat flora for improved recovery of *Streptococcus pyogenes*.

REAGENTS

Selective Streptococcus Agar

Approximate Formula* Per Liter Purified Water

- Pancreatic Digest of Casein ................................................... 10.0 g
- Beef Extract .............................................................................. 6.7 g
- Sodium Chloride ....................................................................... 5.0 g
- Maltose .................................................................................... 0.25 g
- Agar .......................................................................................... 15.0 g
- Nucleic Acid .............................................................................. 6.0 g
- Neomycin Sulfate ..................................................................... 0.002 g
- Polymyxin B Sulfate ............................................................ 200,000 units
- Sheep Blood, defibrinated ...................................................... 5%

*Adjusted and/or supplemented as required to meet performance criteria.

Warnings and Precautions: For in vitro Diagnostic Use.

If excessive moisture is observed, invert the bottom over an off-set lid and allow to air dry in order to prevent formation of a seal between the top and bottom of the plate during incubation.

Pathogenic microorganisms, including hepatitis viruses and Human Immunodeficiency Virus, may be present in clinical specimens. “Standard Precautions”4-7 and institutional guidelines should be followed in handling all items contaminated with blood and other body fluids. After use, prepared plates, specimen containers and other contaminated materials must be sterilized by autoclaving before discarding.

Storage Instructions: On receipt, store plates in the dark at 2–8 °C. Avoid freezing and overheating. Do not open until ready to use. Minimize exposure to light. Prepared plates stored in their original sleeve wrapping at 2–8 °C until just prior to use may be inoculated up to the expiration date and incubated for recommended incubation times. Allow the medium to warm to room temperature before inoculation.
**XI LIMITATIONS OF THE PROCEDURE**

Some strains of group A streptococci (S. pyogenes) may be encountered that will grow poorly on this medium; the nature of the specimens and the physiologic state of the organisms can influence recovery of the desired species, as well as modify the effects of the inhibitory characteristics of this medium. It is therefore useful to examine nonselective controls and compare them to the selective medium to obtain additional information and to assure optimal recovery of any potential pathogens.

This prepared plated medium is intended for primary isolation. Some diagnostic tests may be performed with the primary plate. However, a pure culture is recommended for biochemical tests and serological procedures. Consult appropriate texts for detailed information and to assure optimal recovery of any potential pathogens.

**XII PERFORMANCE CHARACTERISTICS**

An in-house study was performed comparing Selective Streptococcus Agar to Group A Selective Strep Agar with 5% Sheep Blood (BD ssA™), Strep Selective II Agar and BD Trypticase Soy Agar with 5% Sheep Blood (TSA II) using 20 clinical isolates of group A Streptococcus with mixed flora. For each of the 20 cultures, a cell suspension of mixed organisms equivalent to a 0.5 McFarland standard was prepared and a loopful of each suspension streaked onto each of the four media. The plates were incubated aerobically at 35 ± 2 °C with CO₂ for 18–24 h after which they were read for recovery of group A Streptococcus. Two isolates of Group A Streptococcus were not recovered on any of the media. Of the remaining 18 isolates, 16 were equally recovered on all four media. Selective Streptococcus Agar failed to recover two isolates and TSA II failed to recover one isolate due to heavy growth of Staphylococcus. These isolates were recovered by the other two media.

A second in-house study was performed on the four media to determine differences in recovery of group A Streptococcus using the plate count method. Ten pure cultures of Group A Streptococcus were diluted in sterile water to produce a final concentration of 100 CFU (colony-forming units)/plate. Each medium was inoculated by the spread plate method, incubated (as described above) and examined for colony count and colony size. Colony counts were comparable on all four media; however, colony size differed. Selective Streptococcus Agar, Strep Selective II Agar and TSA II media produced an average colony size of ~1.0 mm, whereas BD ssA medium produced an average colony size of ~0.5 mm.

**XIII AVAILABILITY**

<table>
<thead>
<tr>
<th>Cat. No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>221934</td>
<td>BD BBL™ Selective Streptococcus Agar, Pkg. of 20 plates</td>
</tr>
<tr>
<td>221935</td>
<td>BD BBL™ Selective Streptococcus Agar, Ctn. of 100 plates</td>
</tr>
</tbody>
</table>
XIV REFERENCES


Technical Information: In the United States, contact BD Technical Service and Support at 800-638-8663 or www.bd.com/ds.