**Phenylethyl Alcohol Agar**

**Phenylethyl Alcohol Agar with 5% Sheep Blood**

**Intended Use**

Phenylethyl Alcohol (PEA) Agar is a selective medium for the isolation of gram-positive organisms, particularly gram-positive cocci, from specimens of mixed gram-positive and gram-negative flora. The medium, when supplemented with 5% sheep blood, should not be used for determination of hemolytic reactions since atypical reactions may be observed.

**Summary and Explanation**

After noting that phenylethyl alcohol exhibited an inhibitory effect on gram-negative bacteria with only slight effect on gram-positive organisms, Lilley and Brewer incorporated the chemical in an infusion agar base as a selective agent for the isolation of gram-positive bacteria. Phenylethyl Alcohol Agar, unsupplemented or supplemented with 5% sheep blood, is used in the microbiology laboratory to inhibit gram-negative bacteria, particularly *Proteus*, in specimens containing a mixed bacterial flora.

**Principles of the Procedure**

Phenylethyl Alcohol Agar and Phenylethyl Alcohol Agar with 5% Sheep Blood support the growth of gram-positive bacterial species, due to the content of peptones, which supply nitrogen, carbon, sulfur and trace nutrients. Sodium chloride maintains osmotic equilibrium. Sheep blood is a source of growth factors. Phenylethyl alcohol is bacteriostatic for gram-negative bacteria since it selectively and reversibly inhibits DNA synthesis.

**Formula**

**BBL™ Phenylethyl Alcohol Agar**

<table>
<thead>
<tr>
<th>Approximate Formula* Per Liter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pancreatic Digest of Casein</td>
</tr>
<tr>
<td>Papain Digest of Soybean Meal</td>
</tr>
<tr>
<td>Sodium Chloride</td>
</tr>
<tr>
<td>β-Phenylethyl Alcohol</td>
</tr>
<tr>
<td>Agar</td>
</tr>
</tbody>
</table>

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

Identity Specifications
BBL™ Phenylethyl Alcohol Agar
Dehydrated Appearance: Slightly moist and softly clumped, resembling “brown sugar” in consistency and appearance.
Solution: 4.25% solution, soluble in purified water upon boiling. Solution is light to medium, yellow to tan, clear to slightly hazy.
Prepared Appearance: Light to medium, yellow to tan, clear to slightly hazy.
Reaction of 4.25% Solution at 25°C: pH 7.3 ± 0.2

Cultural Response
BBL™ Phenylethyl Alcohol Agar
Prepare the medium per label directions. Inoculate and incubate at 35 ± 2°C with 3-5% CO₂ for 18-24 hours.

INOCULUM ORGANISM ATCC™ CFU RECOVERY

<table>
<thead>
<tr>
<th>ORGANISM</th>
<th>ATCC™</th>
<th>CFU</th>
<th>RECOVERY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proteus mirabilis</td>
<td>12453</td>
<td>10^4-10^5</td>
<td>Partial to complete inhibition</td>
</tr>
<tr>
<td>Staphylococcus aureus</td>
<td>25923</td>
<td>10^1-10^2</td>
<td>Good</td>
</tr>
<tr>
<td>Streptococcus pneumoniae</td>
<td>6305</td>
<td>10^3-10^4</td>
<td>Good, alpha hemolysis</td>
</tr>
<tr>
<td>Streptococcus pyogenes</td>
<td>19615</td>
<td>10^4-10^5</td>
<td>Good, beta hemolysis</td>
</tr>
</tbody>
</table>

Directions for Preparation from Dehydrated Product
1. Suspend 42.5 g of the powder in 1 L of purified water. Mix thoroughly.
2. Heat with frequent agitation and boil for 1 minute to completely dissolve the powder.
3. Autoclave at 121°C for 15 minutes.
4. Cool to 45°C and add 5% sterile defibrinated blood, if desired.
5. Test samples of the finished product for performance using stable, typical control cultures.

Procedure
Use standard procedures to obtain isolated colonies from specimens. Incubate plates 24-48 hours at 35 ± 2°C in an aerobic atmosphere supplemented with carbon dioxide.

Expected Results
Examine plates for growth of gram-positive organisms.

References

Availability
BBL™ Phenylethyl Alcohol Agar
Cat. No. 211539 Dehydrated – 500 g

BBL™ Phenylethyl Alcohol Agar with 5% Sheep Blood

Phosphate Buffer, pH 7.2

Intended Use
Phosphate Buffer, pH 7.2 is used for the preparation of dilution blanks for use in the examination of waters, dairy products, foods and other materials.

Summary and Explanation
The formula for phosphate buffer was specified by the American Public Health Association (APHA) for use in diluting test samples. Phosphate Buffer, pH 7.2 still is specified for use in diluting water, dairy products and foods in microbiological methods. In the compendia of methods for the microbiological examination of water and dairy products, the addition of...