QUALITY CONTROL PROCEDURES

I INTRODUCTION
Bordet Gengou Agar Base, with the addition of glycerol and sterile blood, is used in qualitative procedures for the detection and isolation of *Bordetella pertussis* from clinical specimens.

II PERFORMANCE TEST PROCEDURE
1. Inoculate representative samples with the cultures listed below.
   a. Streak inoculate the plates with 10^3 – 10^4 CFU using a 10 µL (0.01 mL) loop.
   b. Incubate at 35 ± 2 °C in an aerobic atmosphere supplemented with 3-5% carbon dioxide.
2. Examine plates for up to 7 days for growth and zones of hemolytic activity.
3. Expected Results

<table>
<thead>
<tr>
<th>Organisms</th>
<th>ATCC®</th>
<th>Recovery</th>
<th>Hemolysis</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Bordetella pertussis</em></td>
<td>9797</td>
<td>Moderate to heavy growth</td>
<td>Beta</td>
</tr>
<tr>
<td><em>Staphylococcus aureus</em></td>
<td>25923</td>
<td>Fair to heavy growth</td>
<td>None</td>
</tr>
<tr>
<td><em>Streptococcus pneumoniae</em></td>
<td>6305</td>
<td>Fair to heavy growth</td>
<td>Alpha</td>
</tr>
</tbody>
</table>

*Recommended organism strain for User Quality Control.

III 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. Note the firmness of plates during the inoculation procedure.
4. Incubate uninoculated representative plates at 33 – 37 °C for 72 h and examine for microbial contamination.

IV INTENDED USE
This medium is used in qualitative procedures for detection and isolation of *Bordetella pertussis* from clinical specimens.

V SUMMARY AND EXPLANATION
Bordet Gengou medium is used in clinical laboratories as a method of diagnosing whooping cough. *Bordetella pertussis*, the etiologic agent of this disease, may be isolated on cough plates, from nasopharyngeal swabs and other sources of pharyngeal exudate.

Bordet and Gengou introduced the medium in 1906 as a method of maintaining stock cultures.1 In 1934, Kendrick and Eldering replaced the 50% human or rabbit blood recommended in the original formulation with 15% sheep blood to make the medium more practical for laboratories to produce for routine clinical procedures.2

VI PRINCIPLES OF THE PROCEDURE
Bordet Gengou Blood Agar is an enriched, casein peptone medium with potato infusion and glycerol to supply the nutrients necessary to support the growth of *B. pertussis*. Defibrinated sheep blood supplies additional nutrients and enables the detection of hemolytic reactions, which aid in the identification of *B. pertussis*.

VII REAGENTS
Bordet Gengou Blood Agar
Approximate Formula* Per Liter Purified Water

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potato, Infusion from (solids)</td>
<td>4.5 g</td>
</tr>
<tr>
<td>Pancreatic Digest of Casein</td>
<td>5.0 g</td>
</tr>
<tr>
<td>Peptic Digest of Animal Tissue</td>
<td>5.0 g</td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>5.5 g</td>
</tr>
<tr>
<td>Agar</td>
<td>20.0 g</td>
</tr>
<tr>
<td>Glycerol</td>
<td>10.0 mL</td>
</tr>
<tr>
<td>Sheep Blood, defibrinated</td>
<td>15%</td>
</tr>
</tbody>
</table>

*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”3–6 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.

Product Deterioration: Do not use plates if they show evidence of microbial contamination, discoloration, drying, cracking, or other signs of deterioration.

VIII SPECIMEN COLLECTION AND HANDLING
Refer to appropriate texts for details of specimen collection and handling procedures.7–10

Specimens should be obtained before antimicrobial agents have been administered. Provision must be made for prompt delivery to the laboratory.
† REFERENCES
297876

avaIABILITY

XII

results

limitations of the procedure

xii

availability

xiii

references


User Quality Control: See “Quality Control Procedures.” Quality control requirements must be performed in accordance with applicable local, state and/or federal regulations or accreditation requirements and your laboratory’s standard Quality Control procedures. It is recommended that the user refer to pertinent CLSI guidance and CLIA regulations for appropriate Quality Control practices.

results

Examine the plates daily with and without a dissecting microscope (oblique illumination) to detect the presence of Bordetella pertussis. To prevent overgrowth by spreading colonies or molds, use a sterile scalpel or needle to remove the portions of the agar that contain these contaminants. Bordetella pertussis produces small, domed, glistening colonies that resemble bisected pearls. The colonies are usually surrounded by a zone of hemolysis. However, some strains of B. pertussis are not hemolytic. Gram staining, biochemical tests and serological procedures should be performed to confirm findings.

limitations of the procedure

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 further information.7,9,11

availability

Cat. No. Description
297876 BD BBL™ Bordet Gengou Blood Agar

references


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