CHARCOAL AGAR (7586)

Intended Use
Charcoal Agar is used for the cultivation of fastidious microorganisms, particularly *Bordetella pertussis* in a laboratory setting. Charcoal Agar is not intended for use in the diagnosis of disease or other conditions in humans.

Product Summary and Explanation
Charcoal Agar is prepared according to the method of Mishulow, Sharpe, and Cohen.¹ This medium is used as a maintenance medium for stock cultures of *Bordetella* spp., and when supplemented with horse blood, for cultivation and isolation of *Haemophilus influenzae*.²

*Bordetella* consists of four species: *Bordetella pertussis*, *B. parapertussis*, *B. bronchiseptica*, and *B. avium*.³

Principles of the Procedure
The nitrogen and carbon sources are provided by Beef Heart Infusion Solids and Enzymatic Digest of Gelatin. Yeast Extract is the vitamin source in this medium. Sodium Chloride maintains the osmotic environment. Soluble Starch and charcoal absorb toxic metabolites.

Formula / Liter
Beef Heart Infusion Solids ........................................ 12 g
Enzymatic Digest of Gelatin .................................... 10 g
Sodium Chloride .................................................. 5 g
Soluble Starch ..................................................... 10 g
Yeast Extract ....................................................... 3.5 g
Charcoal ............................................................. 4 g
Agar ................................................................. 18 g
Final pH: 7.3 ± 0.2 at 25°C
Formula may be adjusted and/or supplemented as required to meet performance specifications.

Precautions
1. For Laboratory Use Only.
2. IRRITANT. Irritating to eyes, respiratory system, and skin.

Directions
1. Suspend 62.5 g of the medium in one liter of purified water.
2. Heat with frequent agitation and boil for one minute to completely dissolve the medium.
3. Autoclave at 121°C for 15 minutes.
4. Cool medium to 45 - 50°C and gently remix medium prior to dispensing.

Quality Control Specifications
Dehydrated Appearance: Powder is homogeneous, free flowing, and charcoal grey.

Prepared Appearance: Prepared medium is black and opaque.
Expected Cultural Response: Cultural response on Charcoal Agar were incubated aerobically at 35 ± 2°C and examined for growth after 1 - 4 days.

<table>
<thead>
<tr>
<th>Microorganism</th>
<th>Approx. Inoculum (CFU)</th>
<th>Expected Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Bordetella bronchiseptica</em> ATCC® 4617</td>
<td>10 – 300</td>
<td>Growth</td>
</tr>
<tr>
<td><em>Neisseria meningitidis</em> ATCC® 13090</td>
<td>10 - 300</td>
<td>Growth</td>
</tr>
<tr>
<td><em>Streptococcus pneumonia</em> ATCC® 6305</td>
<td>10 - 300</td>
<td>Growth</td>
</tr>
<tr>
<td><em>Streptococcus pyogenes</em> ATCC® 19615</td>
<td>10 - 300</td>
<td>Growth</td>
</tr>
</tbody>
</table>

The organisms listed are the minimum that should be used for quality control testing.

Test Procedure
Refer to appropriate references for a complete discussion on isolation, identification, and maintenance of *Bordetella* spp. and other fastidious microorganisms.3,4

Results
Refer to appropriate references for results.

Storage
Store sealed bottle containing the dehydrated medium at 2 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light by keeping container tightly closed.

Expiration
Refer to expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

Limitations of the Procedure
1. Due to nutritional variation, some strains may be encountered that grow poorly or fail to grow on this medium.
2. Charcoal has a tendency to settle out of the medium. Swirl the flask gently when dispensing to obtain a uniform charcoal suspension.2

Packaging
Charcoal Agar        Code No.         7586A         500 g
                        7586B         2 kg
                        7586C         10 kg

References

Technical Information
Contact Acumedia Manufacturers, Inc. for Technical Service or questions involving dehydrated culture media preparation or performance at (517)372-9200 or fax us at (517)372-2006.