Brain Heart Infusion Broth with 0.1 % Agar

Brain Heart Infusion Broth with 0.1 % Agar is highly nutritious medium employed for the propagation of fastidious pathogenic cocci and other organisms associated with blood culture work and allied pathological investigations.

**Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calf brain, infusion from</td>
<td>200.000</td>
</tr>
<tr>
<td>Beef heart, infusion from</td>
<td>250.000</td>
</tr>
<tr>
<td>Proteose peptone</td>
<td>10.000</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>5.000</td>
</tr>
<tr>
<td>Disodium phosphate</td>
<td>2.500</td>
</tr>
<tr>
<td>Dextrose</td>
<td>2.000</td>
</tr>
<tr>
<td>Agar</td>
<td>1.000</td>
</tr>
<tr>
<td>Final pH ( at 25°C)</td>
<td>7.4±0.2</td>
</tr>
</tbody>
</table>

**Formula adjusted, standardized to suit performance parameters**

**Directions**

Suspend 38 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. For best results, the medium should be used on the day it is prepared, otherwise, it should be boiled or steamed for a few minutes and then cooled before use.

**Principle And Interpretation**

Brain Heart Infusion Medium is useful for cultivating a wide variety of microorganisms since it is a highly nutritive medium. Brain Heart Infusion Broth is a modification of the original formulation of Rosenow, where he added pieces of brain tissues to dextrose broth (1). Brain Heart Infusion Broth is also the preferred medium for anaerobic bacteria, yeasts and moulds (2-4). This medium is nutritious and well buffered to support the growth of wide variety of organisms (2, 5, 6). With the addition of 10% defibrinated sheep blood, it is useful for isolation and cultivation of *Histoplasma capsulatum* (7) and other fungi. Agar in 0.1% concentration improves growth of microaerophillic and anaerobic microorganisms (2). For selective isolation of fungi, addition of gentamicin and/or chloramphenicol is recommended (8).

Proteose peptone and infusions (calf brain and beef heart) serve as sources of carbon, nitrogen, essential growth factors, amino acids and vitamins. Dextrose serves as a source of energy. Disodium phosphate helps in maintaining the buffering action of the medium whereas sodium chloride maintains the osmotic equilibrium of the medium. Agar in 0.1% concentration helps create appropriate conditions for growth of anaerobic bacteria.

**Quality Control**

**Appearance**
Cream to light yellow homogeneous free flowing powder

**Colour and Clarity of prepared medium**
Light to medium amber coloured, clear solution without any precipitate

**Reaction**
Reaction of 3.8% w/v aqueous solution at 25°C. pH : 7.4±0.2

**pH**
7.20-7.60

**Cultural Response**
M1036: Cultural characteristics observed after an incubation at 35-37°C for 24-48 hours.

<table>
<thead>
<tr>
<th>Organism</th>
<th>Inoculum (CFU)</th>
<th>Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural Response</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Enterococcus faecalis ATCC 50-100  good-luxuriant
Neisseria meningitidis ATCC 13090  good-luxuriant
Streptococcus pneumoniae ATCC 6303  50-100  good-luxuriant
Streptococcus pyogenes ATCC 19615  50-100  good-luxuriant
Staphylococcus aureus ATCC 25923  50-100  good-luxuriant

Storage and Shelf Life
Store below 30°C in tightly closed container and use freshly prepared medium. Use before expiry date on the label.

Reference
1. Rosenow, 1919, J. Dental Research, 1:205.

Disclaimer:
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