Brain Heart Infusion Broth

Brain Heart Infusion Broth is 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>Dextrose</td>
<td>2.000</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>5.000</td>
</tr>
<tr>
<td>Disodium phosphate</td>
<td>2.500</td>
</tr>
<tr>
<td>Final pH (at 25°C)</td>
<td>7.4±0.2</td>
</tr>
</tbody>
</table>

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

**Directions**

Suspend 37 grams in 1000 ml distilled water. Heat if necessary to dissolve the medium completely. Dispense into bottles or tubes and 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. It is also used to prepare the inocula for antimicrobial susceptibility testing. 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. 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.

**Quality Control**

**Appearance**

Cream to yellow homogeneous free flowing powder

**Colour and Clarity of prepared medium**

Light to medium amber coloured, clear solution without any precipitate

**Reaction**

Reaction of 3.7% w/v aqueous solution at 25°C: pH : 7.4±0.2

**pH**

7.20-7.60

**Cultural Response**

M210: 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
29212
Neisseria meningitidis ATCC 50-100  good-luxuriant
13090
Streptococcus pneumoniae ATCC 6303  good-luxuriant 50-100
Streptococcus pyogenes ATCC 19615  good-luxuriant 50-100
Candida albicans ATCC 10231  good-luxuriant 50-100
Staphylococcus aureus ATCC 25923  good-luxuriant 50-100

Storage and Shelf Life
Store below 30°C in tightly closed container and the prepared medium at 2 - 8°C. Use before expiry date on the label.

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

Disclaimer:
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