Ashby's Sucrose Broth

Ashby's Sucrose Broth is used for growth and maintenance of *Azotobacter* species that can use Sucrose and atmospheric nitrogen as source of carbon and nitrogen respectively.

**Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sucrose</td>
<td>20.000</td>
</tr>
<tr>
<td>Dipotassium phosphate</td>
<td>0.200</td>
</tr>
<tr>
<td>Magnesium sulphate</td>
<td>0.200</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>0.200</td>
</tr>
<tr>
<td>Potassium sulphate</td>
<td>0.100</td>
</tr>
<tr>
<td>Calcium carbonate</td>
<td>5.000</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 25.7 grams in 1000 ml distilled water. Heat just to boiling. Dispense into tubes or flasks as desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

*Note: Due to presence of calcium carbonate, the prepared medium forms opalescent solution with white precipitate.*

**Principle And Interpretation**

*Azotobacter* is a genus of free-living diazotrophic bacteria which have the highest metabolic rate compared to any other microorganism.

*Azotobacters* are chemoorganotrophic, using sugars, alcohols and salts of organic acids for growth.

Ashby's Medias are formulated as described by Subba Rao (1). It is used for isolation of *Azotobacter*, a non-symbiotic nitrogen fixing bacteria which uses sucrose as a carbon source and atmospheric nitrogen as nitrogen source. Besides the ability to fix atmospheric nitrogen, *Azotobacter* also synthesize biologically active substances which attributes to improving seed germination, plant growth etc. Dipotassium phosphate provides buffering to the system. Various essential ions required for promoting growth of *Azotobacter* are also available in this medium.

**Quality Control**

**Appearance**

White to cream homogeneous free flowing powder

**Colour and Clarity of prepared medium**

Colourless, opalescent solution in tubes with precipitate

**Reaction**

Reaction of 2.57% w/v aqueous solution at 25°C. pH : 7.4±0.2

**pH**

7.20-7.60

**Cultural Response**

Cultural characteristics observed after an incubation at 25-30°C for upto 5 days.

**Organism**

*Azotobacter chroococcum* MTCC 7724

**Growth**

good-luxuriant

**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.

Please refer disclaimer Overleaf.
Reference

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