Pseudomonas Asparagine Broth

Pseudomonas Asparagine Broth is used for presumptive determination of *Pseudomonas aeruginosa* from recreational or natural water as per APHA.

**Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>DL-Asparagine</td>
<td>3.000</td>
</tr>
<tr>
<td>Dipotassium phosphate</td>
<td>1.000</td>
</tr>
<tr>
<td>Magnesium sulphate</td>
<td>0.500</td>
</tr>
<tr>
<td>Final pH (at 25°C)</td>
<td>7.0±0.2</td>
</tr>
</tbody>
</table>

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

**Directions**

Suspend 4.5 grams in 1000 ml distilled water. Gently boil to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and dispense as desired.

**Principle And Interpretation**

Recreational water like from swimming pool is a body of water in a holding structure. Microorganisms of concern are those causing infections of ear, skin and upper respiratory tract etc. *Pseudomonas aeruginosa* is one of those organisms which account for a large percentage of swimming pool associated illness. Asparagine Medium is recommended for the microbiological analysis of water. Pseudomonas Asparagine Broth is an excellent enrichment medium for *P. aeruginosa*, since it is composed of a mineral base and the only carbon source is asparagine. It is also used in the multiple-tube technique for microbiological analysis of recreational waters. Pseudomonas Asparagine Broth is formulated as recommended by APHA (1) for presumptive detection of *P. aeruginosa* from recreational or natural waters. Pseudomonas Asparagine Broth medium is a relatively simple medium containing an amino acid DL-asparagine and two salts dipotassium phosphate and magnesium sulphate. Asparagine is the amino acid and carbon source while phosphate and sulphate provide the ions for the growth of *P. aeruginosa*. Dipotassium phosphate also helps in maintaining the buffering conditions of the medium. This medium is only a presumptive medium for *P. aeruginosa*, and further confirmatory tests are necessary for the identification. For five tubes multiple tube test, use 10 ml of single strength Asparagine Broth for inocula of 1 ml or less and 10 ml double strength Asparagine Broth for 10 ml inocula. For swimming pools, higher dilutions may be necessary. Incubate inoculated tubes at 35-37°C. After 24 hours and again after 48 hours of incubation examine tubes under long water ultraviolet light in a darkened room. Production of a green fluorescent pigment constitutes a positive presumptive test. Confirmation is performed by subculturing a loop from each tube in Acetamide Medium (M148). Development of purple colour within 24-36 hours of incubation at 35-37°C is a positive confirmed test for *P. aeruginosa*.

**Quality Control**

**Appearance**

White to cream homogeneous free flowing powder

**Colour and Clarity of prepared medium**

Colourless clear solution with slight precipitate.

**Reaction**

Reaction of 0.45% w/v aqueous solution at 25°C. pH: 7.0±0.2

**pH**

6.80-7.20

**Cultural Response**

M1096: Cultural characteristics observed after an incubation at 35-37°C for 20 - 24 hours.
Organism | Inoculum (CFU) | Growth
--- | --- | ---
Pseudomonas aeruginosa ATCC 27853 | 50-100 | 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.

**Reference**

Disclaimer:
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