PA (Presence-Absence) Broth
Dehydrated medium for the detection of coliform bacteria in water

TYPICAL FORMULA (g/L)

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meat extract</td>
<td>3.0</td>
</tr>
<tr>
<td>Peptone</td>
<td>5.0</td>
</tr>
<tr>
<td>Lactose</td>
<td>7.46</td>
</tr>
<tr>
<td>Tryptose</td>
<td>9.83</td>
</tr>
<tr>
<td>Dipotassium Hydrogen Phosphate</td>
<td>1.35</td>
</tr>
<tr>
<td>Potassium dihydrogen phosphate</td>
<td>1.35</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>2.46</td>
</tr>
<tr>
<td>Sodium lauryl sulphate</td>
<td>0.05</td>
</tr>
<tr>
<td>Bromocresol purple</td>
<td>0.0085</td>
</tr>
<tr>
<td>Final pH</td>
<td>6.8 ± 0.2</td>
</tr>
</tbody>
</table>

DESCRIPTION
PA (Presence-Absence) Broth is a selective medium for the detection of coliform bacteria in water. It is prepared according to the recommendations of standard methods (US-EPA) for the examination of water.

PRINCIPLE
Peptones and meat extract give the nutrients and trace elements required for growth whereas the phosphate buffer and sodium chloride provide a good buffering capacity and the osmotic equilibrium. Lactose-fermenting organisms form acid which is identified by the pH indicator bromocresol purple as a color change from purple to yellow. The selective component of the culture medium is sodium lauryl sulphate which largely inhibits the undesired accompanying flora with the exception of the coliforms.

PREPARATION
1. Dissolve completely 91.5 g in 1 liter of distilled water, for the preparation of the triple strength concentrated broth.
2. Mix thoroughly.
3. Warm gently to completely dissolve the powder.
4. Fill 50 mL quantities in 250mL milk dilution bottles with screw caps.
5. Autoclave for 12 min. at 121°C, with total autoclave time not to exceed 30 minutes.
6. Allow broth to cool to room temperature.

TECHNIQUE
1. Collect water samples as described in recommended procedures.
2. Add 100mL water samples to the milk dilution bottles filled with 50 mL of triple strength concentrated broth.
3. Mix well.
4. Incubate at 35 +/- 0.5°C for up to 48 hours with a loose screw-cap in aerobic condition.
5. Read results after 24 hours and 48 hours.

INTERPRETATION OF RESULTS
Lactose-positive organisms form acid due to the fermentation of the lactose which colors the broth yellow. Gas formation can occur. To identify gas formation, the bottles are shaken gently and inspected to see if a foaming reaction occurs. All samples with acid and/or acid gas formation are presumptive-positive and are inoculated for confirmation in Brilliant Green Bile Broth 2% (code 610010). If gas formation occurs during the incubation of 48 +/- 3 hours at 35 +/- 0.5 °C, this can be seen as confirmation of the presence of coliforms in the 100 mL water sample.

STORAGE
The powder is very hygroscopic: store the powder at 10-30°C, in a dry environment, in its original container tightly closed and use it before the expiry date on the label or until signs of deterioration or contamination are evident. Store prepared media at 2-8°C.

WARNING and PRECAUTIONS
The product is not classified as hazardous by current legislation and does not contain harmful substances in concentrations of ≥1%. The product must be used only by properly trained operators.

DISPOSAL OF WASTE
Disposal of waste must be carried out according to national and local regulations in force.

REFERENCES
PRODUCT SPECIFICATIONS

NAME
PA (PRESENCE – ABSENCE) BROTH

PRESENTATION
Dehydrated culture medium

STORAGE
10-30°C

PACKAGING
<table>
<thead>
<tr>
<th>Code</th>
<th>Content</th>
<th>Packaging</th>
</tr>
</thead>
<tbody>
<tr>
<td>610137</td>
<td>500 gr</td>
<td>500 gr of powder in plastic bottle</td>
</tr>
<tr>
<td>620137</td>
<td>100 gr</td>
<td>100 gr of powder in plastic bottle</td>
</tr>
</tbody>
</table>

pH OF THE MEDIUM
6.8 ± 0.2

USE
PA (Presence-Absence) Broth is a selective medium for the detection of coliform bacteria in water. It is prepared according to the recommendations of standard methods (US-EPA) for the examination of water.

TECHNIQUE
Refer to technical sheet of the product.

APPEARANCE of the MEDIUM
Dehydrated medium
Appearance: free-flowing, homogeneous.
Colour: beige

Prepared medium
Appearance: slightly opalescent
Colour: purple

SHELF LIFE
4 years

QUALITY CONTROL
1. Control of general characteristics, label and print
2. Sterility control
   7 days at 25 ± 1°C, in aerobiosis
   7 days at 36 ± 1°C, in aerobiosis
3. Microbiological control
   Inoculum for productivity: 10-100 UFC/ml
   Inoculum for selectivity: 10^4-10^5 UFC/ml
   Incubation conditions: 48 +/- 3 hours at 35 +/- 0.5°C, in aerobiosis

<table>
<thead>
<tr>
<th>Microorganisms</th>
<th>Growth</th>
<th>Medium color</th>
<th>Gas formation in BRILLIANT GREEN BILE BROTH 2%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Escherichia coli ATCC 25922</td>
<td>Good</td>
<td>Yellow</td>
<td>+</td>
</tr>
<tr>
<td>Enterococcus faecalis ATCC 29212</td>
<td>Medium</td>
<td>Yellow</td>
<td>-</td>
</tr>
<tr>
<td>Pseudomonas aeruginosa ATCC 27853</td>
<td>Poor/Medium</td>
<td>Purple</td>
<td>-</td>
</tr>
</tbody>
</table>

TABLE of SYMBOLS

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Meanings</th>
</tr>
</thead>
<tbody>
<tr>
<td>REF</td>
<td>Catalogue number</td>
</tr>
<tr>
<td>℃</td>
<td>Manufacturer</td>
</tr>
<tr>
<td>☀</td>
<td>Temperature limitation</td>
</tr>
<tr>
<td>▼</td>
<td>Contains sufficient for &lt;n&gt; tests</td>
</tr>
<tr>
<td>📦</td>
<td>Use by</td>
</tr>
<tr>
<td>LOT</td>
<td>Batch code</td>
</tr>
<tr>
<td>📄</td>
<td>Consult accompanying documents</td>
</tr>
<tr>
<td>✗</td>
<td>Do not reuse</td>
</tr>
</tbody>
</table>

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