Rappaport Vassiliadis R10 Medium

Rappaport Vassiliadis R10 Medium is recommended for selectively enriching *Salmonella* species from meat and dairy products, faeces and sewage polluted water.

**Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Casein enzymic hydrolysate</td>
<td>4.540</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>7.200</td>
</tr>
<tr>
<td>Potassium dihydrogen phosphate</td>
<td>1.450</td>
</tr>
<tr>
<td>Magnesium chloride</td>
<td>13.400</td>
</tr>
<tr>
<td>Malachite green oxalate</td>
<td>0.036</td>
</tr>
<tr>
<td>Final pH (at 25°C)</td>
<td>5.1±0.2</td>
</tr>
</tbody>
</table>

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

**Directions**

Suspend 26.62 grams in 1000 ml distilled water. Heat if necessary to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

**Principle And Interpretation**

Rappaport Vassiliadis R10 Broth is a selective enrichment medium that is used following pre-enrichment of the specimen in a suitable pre-enrichment medium. It has gained approval for use in analyzing milk and milk products (2), raw flesh foods, highly contaminated foods and animal feeds (1). Rappaport et al (4) formulated an enrichment medium for *Salmonella* that was modified by Vassiliadis et al (5). The Vassiliadis modification, designated R10/43°C, had a reduced level of malachite green and recommended incubation at 43°C. Later work by Peterz showed that incubation at 41.5 ± 0.5°C for 24 hours improved recovery of *Salmonella* species (3). Rappaport Vassiliadis R10 Broth medium selectively enriches for salmonellae because bacteria, including other intestinal bacteria, are typically resistant to or inhibited by malachite green, high osmotic pressure and/or low pH. *S. Typhi* and *S. Choleraesuis* are sensitive to malachite green and may be inhibited.

The medium contains papaic digest of soyabean meal which provides essential growth nutrients. Magnesium chloride raises the osmotic pressure in the medium. Malachite green is inhibitory to organisms other than Salmonellae. The low pH of the medium, combined with the presence of malachite green and magnesium chloride, helps to select for the highly resistant *Salmonella* species. Potassium phosphate buffers the medium to maintain the constant pH. Sodium chloride maintains the osmotic balance.

**Quality Control**

**Appearance**

Light yellow to light blue homogeneous free flowing powder

**Colour and Clarity of prepared medium**

Greenish blue coloured clear to slightly opalescent solution that may have precipitate.

**Reaction**

Reaction of 2.66% w/v aqueous solution at 25°C. pH : 5.1±0.2

**pH**

4.90-5.30

**Cultural Response**

M1530: Cultural characteristics observed after an incubation at 42 - 43°C for 18-24 hours. After incubation, subculture on selective agar media like MacConkey Agar (M081) or XLD Agar (M031) and incubate at 35-37°C for 18-24 hours.

<table>
<thead>
<tr>
<th>Organism</th>
<th>Inoculum (CFU)</th>
<th>Growth at 42±1°C</th>
<th>Recovery</th>
<th>Colour of colony</th>
</tr>
</thead>
</table>

Please refer disclaimer Overleaf.
<table>
<thead>
<tr>
<th>Organism</th>
<th>Temperature</th>
<th>Growth</th>
<th>Colonies</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Escherichia coli ATCC 25922</em></td>
<td>50-100</td>
<td>none-poor</td>
<td>&lt;=10%</td>
</tr>
<tr>
<td><em>Salmonella Enteritidis ATCC 13076</em></td>
<td>50-100</td>
<td>good-luxuriant</td>
<td>&gt;=50%</td>
</tr>
<tr>
<td><em>Salmonella Typhi ATCC 6539</em></td>
<td>50-100</td>
<td>good-luxuriant</td>
<td>&gt;=50%</td>
</tr>
<tr>
<td><em>Salmonella Typhimurium ATCC 14028</em></td>
<td>50-100</td>
<td>good-luxuriant</td>
<td>&gt;=50%</td>
</tr>
</tbody>
</table>

**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**