**UNIVERSAL PRE-ENRICHMENT BROTH (7510)**

**Intended Use**

Universal Pre-Enrichment Broth is used for the recovery of *Salmonella* spp. and *Listeria* spp.

**Product Summary and Explanation**

Traditional methods for recovering *Salmonella* spp. and *Listeria* spp. from food products require separate pre-enrichment media for each microorganism.\(^1\,^2\) Some broth media recommended for pre-enrichment contain antibiotic inhibitors,\(^3\) or have insufficient buffering capacity which hinder recovery of sublethally injured cells.\(^3\,^5\)

Bailey and Cox\(^3\) formulated Universal Pre-Enrichment Broth to permit simultaneous resuscitation of sublethally injured *Salmonella* and *Listeria*. The broth medium provides sufficient buffering capacity to prevent rapid decreases in pH, and allows for repair of injured cells that might be sensitive to low pH values or inhibitory substances.

**Principles of the Procedure**

Enzymatic Digest of Casein and Proteose Peptone are the nitrogen sources in Universal Pre-Enrichment Broth. Sodium and Potassium Phosphates buffer the medium. Sodium Chloride, Magnesium Sulfate and Ferric Ammonium Citrate provide essential ions. Dextrose is an energy source, and Sodium Pyruvate helps stimulate the metabolism of stressed organisms.

**Formula / Liter**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enzymatic Digest of Casein</td>
<td>5 g</td>
</tr>
<tr>
<td>Proteose Peptone</td>
<td>5 g</td>
</tr>
<tr>
<td>Potassium Phosphate Monobasic</td>
<td>15 g</td>
</tr>
<tr>
<td>Sodium Phosphate Dibasic</td>
<td>7 g</td>
</tr>
<tr>
<td>Sodium Chloride</td>
<td>5 g</td>
</tr>
<tr>
<td>Dextrose</td>
<td>0.5 g</td>
</tr>
<tr>
<td>Magnesium Sulfate</td>
<td>0.25 g</td>
</tr>
<tr>
<td>Ferric Ammonium Citrate</td>
<td>0.1 g</td>
</tr>
<tr>
<td>Sodium Pyruvate</td>
<td>0.2 g</td>
</tr>
</tbody>
</table>

**Final pH:** \(6.3 \pm 0.2\) at 25°C

Formula may be adjusted and/or supplemented as required to meet performance specifications.

**Precautions**

1. For Laboratory Use.
2. IRRITANT. Irritating to eyes, respiratory system, and skin.

**Directions**

1. Dissolve 38 g of the medium in one liter of purified water.
2. Heat with frequent agitation and boil for one minute to completely dissolve the medium, if necessary.
3. Autoclave at 121°C for 15 minutes.

**Quality Control Specifications**

**Dehydrated Appearance:** Powder is homogeneous, free flowing, and light beige.

**Prepared Appearance:** Prepared medium is light to medium amber and clear.
Expected Cultural Response: Cultural response in Universal Pre-Enrichment Broth at 30°C after 18 - 24 hours incubation.

<table>
<thead>
<tr>
<th>Microorganism</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Listeria monocytogenes ATCC® 7644</td>
<td>good growth</td>
</tr>
<tr>
<td>Listeria monocytogenes ATCC® 15313</td>
<td>good growth</td>
</tr>
<tr>
<td>Salmonella enteritidis ATCC® 13076</td>
<td>good growth</td>
</tr>
<tr>
<td>Salmonella typhimurium ATCC® 14028</td>
<td>good growth</td>
</tr>
</tbody>
</table>

The organisms listed are the minimum that should be used for quality control testing.

Test Procedure
Substitute Universal Pre-Enrichment Broth for pre-enrichment media as specified for Salmonella and Listeria\(^1,2\) and follow recommended procedures.

Results
Salmonella and Listeria demonstrate good growth and recovery following pre-enrichment in this broth.

Storage
Store sealed bottle containing the dehydrated medium at 2 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light by keeping container tightly closed.

Expiration
Refer to expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if the appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

Limitation of the Procedure
Due to nutritional variation, some strains may be encountered that grow poorly or fail to grow on this medium.

Packaging
Universal Pre-Enrichment Broth Code No. 7510A 500 g  
7510B 2 kg  
7510C 10 kg

References

Technical Information
Contact Acumedia Manufacturers, Inc. for Technical Service or questions involving dehydrated culture media preparation or performance at (410)780-5120 or fax us at (410)780-5470.