**Yersinia Selective Agar Base, w/ 1.2% Agar**

**M843F**

**Intended use**

Yersinia Selective Agar Base, w/ 1.2% Agar is recommended for the selective, isolation and enumeration of *Yersinia enterocolitica* from food samples in accordance with FDA BAM, 1998.

**Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special peptone</td>
<td>20.000</td>
</tr>
<tr>
<td>Yeast extract</td>
<td>2.000</td>
</tr>
<tr>
<td>Mannitol</td>
<td>20.000</td>
</tr>
<tr>
<td>Sodium pyruvate</td>
<td>2.000</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>1.000</td>
</tr>
<tr>
<td>Magnesium sulphate, heptahydrate</td>
<td>0.010</td>
</tr>
<tr>
<td>Sodium deoxycholate</td>
<td>0.500</td>
</tr>
<tr>
<td>Neutral red</td>
<td>0.030</td>
</tr>
<tr>
<td>Crystal violet</td>
<td>0.001</td>
</tr>
<tr>
<td>Agar</td>
<td>12.000</td>
</tr>
<tr>
<td>Final pH (at 25°C)</td>
<td>7.40±0.2</td>
</tr>
</tbody>
</table>

**Directions**

Suspend 28.77 grams (the equivalent weight of dehydrated medium per litre) in 500 ml purified / distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C and aseptically add reconstituted contents of 1 vial of Yersinia Selective Supplement (FD034) and 1 vial of Yersinia Selective Supplement II (FD301). Mix well and pour into sterile Petri plates.

**Principle And Interpretation**

Yersinia Selective Agar Base, w/ 1.2% Agar is formulated, for the isolation of *Yersinia* from food specimens in accordance with FDA BAM, 1998 (4). *Yersinia* species have been reported to be responsible for yersiniosis, a range of diseases/syndromes from gastroenteritis to plague. The organism is transmitted by ingestion of contaminated food (often milk and pork) and water, probably by the fecal-oral route or through contact with infected animals (1,8). The mechanisms of pathogenicity in the enteropathogenic *Yersinia* are complex and have served as research models for understanding the infectious process in many enteropathogenic bacteria.

Food samples with suspected Yersinial contamination are processed for the bacterial isolation using respective selective agars. According to the BAM protocol, aseptically weigh 25 g sample into 225 ml Peptone sorbitol Bile Broth (M1231). Homogenized samples are incubated for 10 days at 10°C. If high levels of *Yersinia* are suspected, spread plate of 0.1ml each are done on MacConkey Agar (M081D) and Yersinia Selective Agar Base, w/ 1.2% (M843F) before incubation of the broth. Also transfer 1 ml homogenate to 9 ml 0.5% KOH in 0.5% saline (3), mix for 2-3 seconds, and spread-plate 0.1 ml on MacConkey and CIN agars. Incubate agar plates at 30°C for 1-2 days. Repeat this on day 10 as well. *Yersinia* colonies on Yersinia Selective Agar Base, w/ 1.2% appear as deep red center with sharp border surrounded by clear colorless zone with entire edge and on MacConkey, they appear as flat, colorless, or pale pink colonies. Colonies isolated have to be confirmed through biochemical and serological assays.

Peptone and yeast extract provide nitrogenous and carbonaceous compounds, long chain amino acids and other essential compounds. Mannitol is the energy source. Sodium deoxycholate inhibits the growth of most of the non-enteric organisms. Magnesium sulphate provides essential ions and sodium chloride maintains the osmotic equilibrium of the medium. Neutral red and crystal violet acts as the indicators and agar as the solidifying agent.

**Type of specimen**

Food and dairy samples

*Please refer disclaimer Overleaf.*
Specimen Collection and Handling
For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (2,4,7,8). After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions:
Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations:
1. Serratia liquefaciens, Citrobacter freundii and Enterobacter agglomerans may resemble Y. enterocolitica that can be further identified by biochemical tests.

Performance and Evaluation
Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality Control
Appearance
Light yellow to pink homogeneous free flowing powder

Gelling
Firm, comparable with 1.2% Agar gel.

Colour and Clarity of prepared medium
Orange red coloured clear to slightly opalescent gel forms in Petri plates.

Reaction
Reaction of 5.75% w/v aqueous solution at 25°C. pH : 7.4±0.2

pH
7.20 - 7.60

Cultural Response
Cultural characteristics observed with added Yesinia Selective Supplement (FD034) and Yersinia Selective Supplement-2 (FD301) after an incubation at 30°C for 24-48 hours.

Cultural Response

<table>
<thead>
<tr>
<th>Organism</th>
<th>Inoculum (CFU)</th>
<th>Growth</th>
<th>Recovery</th>
<th>Colour of colony</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enterococcus faecalis ATCC 29212 (00087*)</td>
<td>&gt;=10⁴</td>
<td>inhibited</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Escherichia coli ATCC 25922 (00013*)</td>
<td>&gt;=10⁴</td>
<td>inhibited</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Proteus mirabilis ATCC 25933</td>
<td>&gt;=10⁴</td>
<td>inhibited</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Pseudomonas aeruginosa ATCC 27853 (00025*)</td>
<td>&gt;=10⁴</td>
<td>inhibited</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Yersinia enterocolitica ATCC 27729</td>
<td>50-100</td>
<td>good-luxuriant</td>
<td>&gt;=50%</td>
<td>translucent with dark pink centre &amp; bile precipitate.</td>
</tr>
</tbody>
</table>

Key: *Corresponding WDCM numbers.

Storage and Shelf Life
Store between 10-30°C in a tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition Seal the container tightly after use. Use before expiry date on the label. Product performance is best if used within stated expiry period.

Please refer disclaimer Overleaf.
Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (5, 6).

Reference


Revision: 02 / 2019

Disclaimer:
User must ensure suitability of the product(s) in their application prior to use. Products conform solely to the information contained in this and other related HiMedia™ publications. The information contained in this publication is based on our research and development work and is to the best of our knowledge true and accurate. HiMedia™ Laboratories Pvt Ltd reserves the right to make changes to specifications and information related to the products at any time. Products are not intended for human or animal or therapeutic use but for laboratory, diagnostic, research or further manufacturing use only, unless otherwise specified. Statements contained herein should not be considered as a warranty of any kind, expressed or implied, and no liability is accepted for infringement of any patents.