Yersinia Isolation Agar

Intended use

Yersinia Isolation Agar is recommended for the selective isolation of *Yersinia* species from foods.

Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peptone</td>
<td>5.000</td>
</tr>
<tr>
<td>HM extract*</td>
<td>5.000</td>
</tr>
<tr>
<td>Yeast extract</td>
<td>5.000</td>
</tr>
<tr>
<td>Lactose</td>
<td>10.000</td>
</tr>
<tr>
<td>Sodium deoxycholate</td>
<td>10.000</td>
</tr>
<tr>
<td>Sodium citrate</td>
<td>10.000</td>
</tr>
<tr>
<td>Bile#</td>
<td>8.500</td>
</tr>
<tr>
<td>Sodium thiosulphate</td>
<td>8.500</td>
</tr>
<tr>
<td>Ferric citrate</td>
<td>1.000</td>
</tr>
<tr>
<td>Calcium chloride</td>
<td>1.000</td>
</tr>
<tr>
<td>Neutral red</td>
<td>0.025</td>
</tr>
<tr>
<td>Brilliant green</td>
<td>0.0003</td>
</tr>
<tr>
<td>Agar</td>
<td>15.000</td>
</tr>
</tbody>
</table>

**Formula adjusted, standardized to suit performance parameters

* - Equivalent to Meat extract

# - Equivalent to Ox bile

Directions

Suspend 79.02 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. DO NOT AUTOCLAVE OR OVERHEAT. Cool to 45-50°C. Mix well and pour into sterile Petri plates.

Principle And Interpretation

*Yersinia* is a gram-negative bacillus that is usually nitrate reductase-positive, fermentative, oxidase-negative and facultative with respect to oxygen requirement.*Yersinia* is usually urease-positive and motile at 25°C but not at 35°C. It is relatively sensitive to acidic conditions; therefore acid foods and fermented products should be analyzed promptly. A variety of enrichment methods have been described for recovery of *Yersinia enterocolitica* from foods. A highly selective enteric plating media, such as SS Agar (M108) have been used for isolation of *Yersinia*. Yersinia Isolation Agar has been developed for selective isolation of *Yersinia* species and preliminary differentiation of *Y. enterocolitica* from human and animal intestinal contents (1). The medium is recommended by the ISO Committee for identification of *Yersinia* species from foods (2). Peptone, HM extract and yeast extract provide nitrogenous and carbonaceous compounds, vitamin B complex, trace elements and other essential growth nutrients. Neutral red acts as the pH indicator. Lactose is the fermentable carbohydrate. High amount of sodium deoxycholate and bile inhibit *Enterobacteriaceae* but not *Y. enterocolitica*. Brilliant green and sodium citrate suppresses growth of accompanying gram-positive bacteria. Within 24 hours of incubation at 29-30°C, *Y. enterocolitica* and some species of *Enterobacteriaceae* exhibit scanty growth, however, after 48 hours, *Y. enterocolitica* colonies are well established and other *Yersinia* species start growing.

For isolation, streak the primary or secondary enrichment broths after incubation on one or more selective agar plates. After appropriate incubation period, examine the plates for colonies resembling *Yersinia*.

Type of specimen

Food and dairy samples

Specimen Collection and Handling

For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (3,4,5). After use, contaminated materials must be sterilized by autoclaving before discarding.

Please refer disclaimer Overleaf.
**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. Further identification must be carried out by performing 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 1.5% Agar gel.

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

**Reaction**
Reaction of 7.9% w/v aqueous solution at 25°C. pH : 7.4±0.2

**pH**
7.20-7.60

**Cultural Response**
Cultural characteristics observed after an incubation at 25-30°C for 24-48 hours.

<table>
<thead>
<tr>
<th>Organism</th>
<th>Inoculum (CFU)</th>
<th>Growth</th>
<th>Recovery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Escherichia coli ATCC 25922</td>
<td>50-100</td>
<td>none-poor</td>
<td>&lt;=10%</td>
</tr>
<tr>
<td>Proteus mirabilis ATCC 25933</td>
<td>50-100</td>
<td>fair-good</td>
<td>30-40%</td>
</tr>
<tr>
<td>Salmonella Typhimurium ATCC 14028</td>
<td>50-100</td>
<td>fair-good</td>
<td>30-40%</td>
</tr>
<tr>
<td>Shigella flexneri ATCC 12022</td>
<td>50-100</td>
<td>none-poor</td>
<td>&lt;=10%</td>
</tr>
<tr>
<td>Yersinia enterocolitica ATCC 27729</td>
<td>50-100</td>
<td>good-luxuriant</td>
<td>&gt;=50%</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 20-30°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle inorder 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.

**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 sample must be decontaminated and disposed of in accordance with current laboratory techniques (6,7).
Reference


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.