Thayer Martin Medium Base

Intended use
Thayer Martin Medium Base used for selective isolation of Gonococci from pathological specimens.

Composition**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Gms / Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peptone, special</td>
<td>23.000</td>
</tr>
<tr>
<td>Starch</td>
<td>1.000</td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>5.000</td>
</tr>
<tr>
<td>Agar</td>
<td>13.000</td>
</tr>
<tr>
<td>Final pH (at 25°C)</td>
<td>7.0±0.2</td>
</tr>
</tbody>
</table>

**Formula adjusted, standardized to suit performance parameters

Directions
Suspend 21.0 grams in 450 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. Aseptically add 50 ml of sterile lysed blood and rehydrated contents of one vial of Vitamino Growth Supplement (FD025) and V.C.N Supplement (FD023) or V.C.N.T Supplement (FD024). If desired GC Supplement with Antibiotics (FD021) can be used as a single supplement. Mix well before pouring into sterile Petri plates. If Hemoglobin (FD022) is used suspend 21.0 grams of Thayer Martin Medium Base in 250 ml distilled water.Heat to boiling to dissolve the medium completely. Prepare 250 ml of 2% hemoglobin solution. Sterilize separately by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. Mix both and add the supplements as above.

Principle And Interpretation
Carpenter and Morton reported an improved medium to isolate Gonococci in 24 hours (1). Later on the efficiency of GC medium supplemented with haemoglobin and yeast concentrate was demonstrated for isolating gonococci (2). Subsequently Thayer and Martin Medium was developed for the primary isolation of Neisseria gonorrhoeae and Neisseria meningitidis from specimens containing mixed flora collected from throat, vagina, rectum and urethra (6, 8). Thayer and Martin (8) used Vancomycin, Colistin and Nystatin. Martin and Lester (7) used an additional antibiotic Trimethoprim to make the medium selective.

Special peptone provides nutrients to the organisms while starch neutralizes the toxic fatty acids if present in the agar. Haemoglobin provides the X factor whereas the V factor (N.A.D.) is provided by the added supplement. Supplement (FD025) also supplies vitamins, amino acids, coenzymes etc. which enhances the growth of pathogenic Neisseria. Vancomycin and colistin inhibits gram-positive and gram-negative bacteria respectively (5). Nystatin inhibits fungi. This medium may inhibit Haemophilus species. Some strains of Capnocytophaga species may grow on this medium when inoculated with oropharyngeal specimens.

Type of specimen
Clinical samples : Throat, vagina, rectum and urethra

Specimen Collection and Handling
For clinical samples follow appropriate techniques for handling specimens as per established guidelines (8,7). After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions :
In Vitro diagnostic Use only. 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 clinical specimens. Safety guidelines may be referred in individual safety data sheets.

Please refer disclaimer Overleaf.
Limitations:
1. Due to nutritional variations and fastidious nature of organisms certain strains may show poor growth.
2. Some strains of *Capnocytophaga* species may grow on this medium when inoculated with oropharyngeal specimens.

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

Quality Control

Appearance
Cream to yellow homogeneous free flowing powder

Gelling
Firm, comparable with 1.3% Agar gel.

Colour and Clarity of prepared medium
Basal Medium: Yellow coloured clear to slightly opalescent gel. After addition of haemoglobin or sterile lysed blood and supplements: chocolate coloured opaque gel forms in Petri plates.

Reaction
Reaction of 4.2% w/v aqueous solution at 25°C. pH: 7.0±0.2

pH
6.80-7.20

Cultural Response
M413: Cultural characteristics observed with added sterile lysed blood/Haemoglobin solution (FD022), Vitamino Growth Supplement (FD025) and V.C.N. Supplement (FD023)/V.C.N.T. Supplement (FD024) after an incubation at 35-37°C for 18-48 hours.

<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><em>Escherichia coli</em> ATCC 25922</td>
<td>&gt;=10⁴</td>
<td>inhibited</td>
<td>0%</td>
<td>small, grayish-white to colourless, mucoid</td>
</tr>
<tr>
<td><em>Neisseria gonorrhoeae</em> ATCC 19424</td>
<td>50-100</td>
<td>good-luxuriant</td>
<td>&gt;=50%</td>
<td>medium to large, blue-gray, mucoid</td>
</tr>
<tr>
<td><em>Neisseria meningitidis</em> ATCC 13090</td>
<td>50-100</td>
<td>good-luxuriant</td>
<td>&gt;=50%</td>
<td></td>
</tr>
<tr>
<td><em>Proteus mirabilis</em> ATCC 25933</td>
<td>&gt;=10⁴</td>
<td>inhibited</td>
<td>0%</td>
<td></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.

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 (3,4).

Reference

Please refer disclaimer Overleaf.

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.