



Technical Data

Agar medium F(Crystal Violet, Neutral Red, Bile Agar with Glucose) M1684B

Intended use

Agar Medium F is recommended for detection and enumeration of *Enterobacteria* in accordance with British Pharmacopoeia .

Composition**

Ingredients	Gms / Litre
Gelatin peptone \$	7.000
Yeast extract	3.000
Lactose monohydrate	10.000
Bile salts	1.500
Glucose monohydrate	10.000
Sodium chloride	5.000
Neutral red	0.030
Crystal violet	0.002
Agar	15.000
Final pH (at 25°C)	7.4±0.2

**Formula adjusted, standardized to suit performance parameters

\$ - Equivalent to pancreatic digest of gelatin

Directions

Suspend 50.12 grams (the equivalent weight of dehydrated medium per litre) in 1000 ml purified /distilled water. Heat to boiling to dissolve the medium completely. DO NOT HEAT IN AN AUTOCLAVE. Cool to 45-50°C. Mix well and pour into sterile Petri plates.

Principle And Interpretation

It is selective medium recommended for detection of *Enterobacteriaceae* species as recommended by British Pharmacopoeia and is also cited as Agar medium F (1). Mossel et al (2,3,4) added glucose to the medium observing improved detection of coliforms. Incubation can be carried out at different temperatures and incubation time depending upon the group of *Enterobacteriaceae* to be recovered (5).

Gelatin and yeast extract provide nitrogenous and carbonaceous compounds, long chain amino acids, vitamins and other nutrients essential for bacterial metabolism. This media is selective due to presence of the inhibitors; bile salts and crystal violet. Crystal violet inhibits gram-positive organisms especially Staphylococci. Neutral red indicator helps to detect lactose monohydrate and glucose monohydrate fermentation. Lactose and glucose fermenting strains grow as red or pink and may be surrounded by a zone of acid precipitated bile. Sodium chloride maintains the osmotic equilibrium in the medium. The red colour is due to absorption of neutral red and a subsequent colour change of the dye when the pH of medium falls below 6.8.

Type of specimen

Pharmaceutical samples

Specimen Collection and Handling

For pharmaceutical samples, follow appropriate techniques for handling specimens as per established guidelines (1). 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 :

Further biochemical tests must be carried out for confirmation.

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

Reddish purple coloured clear to slightly opalescent gel forms in Petri plates.

Reaction

After heating, reaction of 5.01% w/v aqueous solution. pH : 7.4±0.2

pH

7.20-7.60

Growth Promotion Test

Growth Promotion is carried out in accordance with British Pharmacopoeia and cultural characteristics are observed after an incubation at 35-37°C for 18-24 hours.

Cultural Response

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony
Cultural Response				
<i>Enterobacter aerogenes</i> ATCC 13048 (00175*)	50 -100	good-luxuriant	≥50 %	pink-red
<i>Escherichia coli</i> ATCC 25922 (00013*)	50 -100	good-luxuriant	≥50 %	pink-red
<i>Salmonella Enteritidis</i> ATCC 13076 (00030*)	50 -100	good-luxuriant	≥50 %	light pink
<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC 25923 (00034*)	≥10 ³	inhibited	0 %	
<i>Escherichia coli</i> ATCC 8739 (00012*)	50 -100	luxuriant	≥50 %	pink-red
<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC 6538 (00032*)	≥10 ³	inhibited	0 %	

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 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 (6,7).

Reference

1. The British Pharmacopoeia 2008, The Stationery Office. British Pharmacopoeia.
2. Mossel D.A.A., Mengerink W.H.J. & Scholts H.H., 1962, J. Bacteriol, 84 : 381.

3. Mossel D.A.A. et al, 1978, Lab. practice, 27 No. 12 : 1049
4. Mossel D.A.A. et al, 1979, Food Protect., 42 : 470.
5. Mossel D.A.A. et al, 1986, J. Appl. Bact., 60 : 289
6. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
7. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock, D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.

Revision : 02 / 2018

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.