PRODUCT SPECIFICATION SHEET

Agar Medium F (Crystal Violet, Neutral red, Bile Agar with Glucose) (DM1327E)

Intended Use

Agar Medium F (Crystal Violet, Neutral red, Bile Agar with Glucose) (DM1327E) is recommended for detection and enumeration of *Enterobacteria* in compliance with EP.

Product Summary and Explanation

Agar Medium F (Crystal violet, neutral red, bile agar with glucose) is a selective medium and is recommended for detection of *Enterobacteriaceae* species by European Pharmacopoeia from food, dietary supplement and pharmaceutical preparations.[1] The *Enterobacteriaceae* group includes lactose-fermenting coliform bacteria, lactose-nonfermenting strains of *E. coli*, and lactose-nonfermenting species, such as *Salmonella* and *Shigella*. When examining some foods, it is desirable to detect *Enterobacteriaceae* rather than the coliform bacteria.[2] *Enterobacteriaceae* are glucose-fermenting bacteria. Glucose was added to the medium by Mossel et al[3,4,5] which showed improved detection of coliforms. Depending upon the group of *Enterobacteriaceae* to be recovered, incubation can be carried out at different temperatures and incubation time.[6]

Principles of the Procedure

Violet Red Bile Glucose Agar contains pancreatic digest of gelatin and yeast extract which provide nitrogenous compounds, 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 glucose fermentation. Glucose fermenting strains produce red colonies with pink-red halos in the presence of neutral red. 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.

Formula / Liter

Ingredients	Gms / Liter
Pancreatic digest of gelatin	7.00
Yeast extract	3.00
Lactose monohydrate	10.00
Bile salts	1.50
Glucose monohydrate	10.00
Sodium chloride	5.00
Neutral red	0.03
Crystal violet	0.002
Agar	15.00
Final pH: 7.4 ± 0.2 at 25°C	
Formula may be adjusted and/or supplemented as required to meet performance specifications	

Precautions

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

Directions

1. Suspend 50.12 grams (the equivalent weight) of the medium in one liter of distilled water.
2. Heat to boiling to dissolve the medium completely.
3. DO NOT HEAT IN AN AUTOCLAVE.
4. Mix well and pour into sterile Petri plates.

PRODUCT SPECIFICATION SHEET

Quality Control Specifications

Dehydrated Appearance	Light yellow to pinkish beige homogeneous free flowing powder
Prepared Medium	Reddish purple coloured clear to slightly opalescent gel forms in Petri plates
Reaction of 5.01% solution	pH 7.4 ± 0.2 at 25°C
Gel Strength	Firm, comparable with 1.5% Agar gel

Growth Promotion Test

Growth Promotion was carried out in accordance with European Pharmacopoeia and cultural characteristics observed after an incubation at 35-37°c for 18-24 hours.

Expected Cultural Response:

Sr. No.	Organisms	Results to be achieved				
		Inoculum (CFU)	Growth	Observed Lot value (CFU)	Recovery	Colour of colony
1.	*Escherichia coli ATCC 8739*	50-100	good-luxuriant	25 -100	>=50 %	pink-red
2.	*Escherichia coli ATCC 25922*	50-100	good-luxuriant	25 -100	>=50 %	pink-red
3.	*Salmonella enteritidis ATCC 13076*	50-100	good-luxuriant	25 -100	>=50 %	light pink
4.	*Enterobacter aerogenes ATCC 13048*	50-100	good-luxuriant	25 -100	>=50 %	pink-red
5.	*Staphylococcus aureus ATCC 25923*	>=10^3	inhibited	0	0 %	--
6.	*Staphylococcus aureus ATCC 6538*	>=10^3	inhibited	0	0 %	--

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

Test Procedure

Refer to appropriate references for standard test procedures. This medium can be used in spread or pour plate procedures, with or without an overlay. In addition, this medium can be used as an overlayer for spread plates to both prevent swarming colonies and to provide semi-anaerobic conditions that suppress the growth of non-fermentative gram-negative organisms. Stab inoculation procedures can also be used with this medium.

Results

Refer to appropriate references and standard test procedures for interpretation of results.

Storage

Store the sealed bottle containing the dehydrated medium at 10 - 30°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light.

Expiration

Refer to the 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.

Limitations of the Procedure

1. When used in the pour plate procedure, the medium should be freshly prepared, tempered to 47°C, and used within 3 hours.
2. For identification, organisms must be in pure culture. Morphological, biochemical and/or serological tests should be performed for final identification.
3. Consult appropriate texts for detailed information and recommended procedures.

PRODUCT SPECIFICATION SHEET

Packaging
Product Name : Agar Medium F (Crystal Violet, Neutral red, Bile Agar with Glucose)
Product Code : DM1327E
Available Pack sizes : 500gm

References

1. The European Pharmacopoeia, 2008, European Department, for the Quality of Medicines.
2. Mossel. 1985. Int. J. Food Microbiol. 2:27.
3. Mossel D.A.A., Mengerink W.H.J. & Scholts H.H., 1962, J. Bacteriol, 84 : 381.
4. Mossel D.A.A. et al, 1978, Lab. practice, 27 No. 12 : 1049.
5. Mossel D.A.A. et al, 1979, Food Protect., 42 : 470.
6. Mossel D.A.A. et al, 1986, J. Appl. Bact., 60 : 289.

Further Information

For further information please contact your local MICROMASTER Representative.

MICROMASTER LABORATORIES PRIVATE LIMITED
Unit 38/39, Kalpataru Industrial Estate,
Off G.B. Road, Near 'R-Mall' , Thane (W) – 400607. M.S. INDIA.
Ph: +91-22-25895505, 4760, 4681. Cell: 9320126789.
Email: micromaster@micromasterlab.com
sales@micromasterlab.com

DM1327EPSS,QAD/FR/024,Rev.00/01.01.2018

Prepared By	Checked By	Approved By
01.01.2018	01.01.2018	01.01.2018

Disclaimer :

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