

Technical Information

M Endo Broth MF (MF Endo Medium) (M-Coliform Broth)

Product Code: DM 2103

Application: - M-Endo Broth MF is used in the one step membrane filter technique for the enumeration of coliform bacteria in water samples.

Composition**

Ingredients	Gms / Litre
Tryptose	10.000
Casein enzymic hydrolysate	5.000
Peptone, special	5.000
Yeast extract	1.500
Lactose	12.500
Sodium deoxycholate	0.100
Dipotassium phosphate	4.375
Monopotassium phosphate	1.375
Sodium chloride	5.000
Sodium lauryl sulphate	0.050
Sodium sulphite	2.100
Basic fuchsin	1.050
Final pH (25°C)	7.2±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

It is possible to remove bacteria from fluids by passing them through filters with small pore size. This filtration technique enables fairly large volumes of water to pass rapidly under pressure, but prevents the passing out of any bacteria present through it. These bacteria are retained on the surface of the membrane which is then brought into contact with suitable liquid nutrients. Which diffuse upwards through the pores thereby inducing the organisms to grow as surface colonies which can be counted ⁽¹⁾ for enumeration of coliform bacteria in water sample.

M-Endo broth is used for the estimation of coliform bacteria in water samples using the membrane filtration technique. Endo Medium was first developed by Endo to differentiate between lactose-fermenters and non-fermenters. This medium contains sodium sulphite and basic fuchsin instead of bile salts for inhibiting the growth of gram-positive bacteria ⁽²⁾.

M-Endo Broth MF is a selective and differential medium for the detection of coliforms by the membrane filter technique ⁽³⁾. Preliminary enrichment on a non-selective medium is not required in case of M-Endo Broth MF and therefore this is a medium of choice for the determination of coliform bacteria in water and other specimens by one step filtration technique.

Casein enzymic hydrolysate, tryptose, peptone special and yeast extract provide essential nutrients especially nitrogenous for the coliforms. Lactose is the fermentable carbohydrate. Sodium sulphite, sodium deoxycholate and basic fuchsin inhibit the growth of gram-positive organisms. Phosphates buffer the medium. Coliforms ferment lactose and the resulting acetaldehyde reacts with sodium sulphite and basic fuchsin to form red colonies and similar colouration of the medium. Lactose nonfermenters form colourless colonies.



Dehydrated Culture Media
Bases / Media Supplements

Methodology

Suspend 48.05 grams of powder media in 1000 ml distilled water containing 20 ml ethanol. Shake well heat if necessary to dissolve the medium completely. DO NOT AUTOCLAVE. Cool to room temperature and dispense about 2 ml onto sterile absorbent pads. This medium should be used on the same day it is prepared and should be protected from bright light.

Caution: Basic fuchsin is a potential carcinogen and care should be taken to avoid inhalation of the powdered dye and contamination of the skin.

Quality Control

Physical Appearance

Light pink to purple homogeneous free flowing powder

Colour and Clarity of prepared medium

Red coloured opalescent solution in tubes

Reaction

Reaction of 4.8% w/v aqueous solution containing 2.0% v/v ethanol at 25°C. pH : 7.2±0.2

pH range 7.00-7.40

Cultural Response/ characteristics

DM 2103: Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours.

Organism	Inoculum (CFU)	Growth	Colour of Colony (on Membrane filter)
<i>Escherichia coli</i> ATCC 25922	50-100	good-luxuriant	pink with metallic sheen
<i>Enterobacter aerogenes</i> ATCC 13048	50-100	good-luxuriant	pink to red(may have sheen)
<i>Salmonella Typhi</i> ATCC 6539	50-100	luxuriant	colourless to very light pink
<i>Staphylococcus aureus</i> ATCC 25923	>=10 ³	inhibited	
<i>Klebsiella pneumoniae</i> ATCC 13883	50-100	good-luxuriant	pink to red
<i>Salmonella Typhimurium</i> ATCC 14028	50-100	luxuriant	colourless to very light pink

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.

Prepared Media: 2-8° in sealable plastic bags for 2-5 days.

Further Reading

1. Cruickshank R., Duguid J. P., Marmion B. P., Swain R. H. A., (Eds.), Medical Microbiology, 1975, 12th Ed. Vol. II, Churchill Livingstone
2. Endo S., 1904, Zentralbl. Bakteriol., Abt. 1, Orig.35:109-110.
3. Fifield C. W. and Schaufus C. P., 1958, J. Am. Water Works Assoc. 50:193

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
- The product conform solely to the technical information provided in this booklet and to the best of knowledge research and development work carried at **CDH** is true and accurate
- **Central Drug House 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 diagnostic or therapeutic use but for laboratory, research or further manufacturing of diagnostic reagents extra.
- 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.
- Donot use the products if it fails to meet specifcatons for identity and performens parameters.

