Technical Information

Endo Agar Modified

Product Code: DM 2075

Application: - Endo Agar Modified is recommended for the detection of coliform and other enteric organisms.

Composition**

Ingredients	Gms / Litre
Peptic digest of animal tissue	10.000
Dipotassium phosphate	2.500
Lactose	10.000
Sodium sulphite	3.300
Basic fuchsin	0.300
Agar	12.500
Final pH (at 25°C)	7.4±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Endo Agar was formulated by Endo to differentiate gram-negative bacteria on the basis of lactose fermentation, while inhibiting the growth of gram-positive bacteria [(1).] Inhibition of the later was achieved without the use of bile salts which was used traditionally. Endo was successful in inhibiting gram-positive bacteria on his medium by adding sodium sulphite and basic fuchsin. The resulting Endo Agar, also known as Fuchsin Sulphite and Infusion Agar, was used to isolate the typhoid bacilli. Many modifications of this media have been made over the years. Endo Agar, modified is one of the modifications of Endo Agar.

The medium contains peptic digest of animal tissue that provide nitrogen, carbon, vitamins and minerals required for bacterial growth. Sodium sulphite and basic fuchsin has inhibitory effect on gram-positive microorganisms. Lactose fermenting coliforms produce aldehyde and acid. The aldehyde in turn liberates fuchsin from the fuchsin-sulphite complex, giving rise to a red colouration of colonies. With *Escherichia coli,* this reaction is very pronounced as the fuchsin crystallizes, exhibiting a permanent greenish metallic lustre (fuchsin lustre) to the colonies.

Methodology

Suspend 38.6 grams of powder media in 1000 ml distilled water. Shake well & heat to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well before pouring into sterile Petri plates. If the solidified culture medium is somewhat too red, then to remove the colour, add a few drops (max. 1 ml/litre) of a freshly prepared 10% Sodium sulphite solution and boil.

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

Gelling

Firm, comparable with 1.25% Agar gel

Colour and Clarity of prepared medium

Orangish pink coloured, clear to slightly opalescent gel with fine precipitate forms in Petri plates.

Reaction

Reaction of 3.86% w/v aqueous solution at 25°C. pH : 7.4±0.2

pH Range

7.20-7.60

Cultural Response/Characteristics

DM2075: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony
Bacillus subtilis ATCC 6633	>=10^3	inhibited	0%	
Enterobacter aerogenes ATCC 13048	50-100	good-luxuriant	>=50%	pink
Enterococcus faecalis ATCC 29212	50-100	none-poor	>=50%	Pink small
Escherichia coli ATCC 25922	50-100	good-luxuriant	>=50%	pink to rose red with metallic sheen
Klebsiella pneumoniae ATCC 13883	50-100	good-luxuriant	>=50%	pink, mucoid
Proteus vulgaris ATCC 13315	50-100	good-luxuriant	>=50%	colourless to pale pink
Pseudomonas aeruginosa ATCC 27853	50-100	good-luxuriant	>=50%	colourless, irregular
Salmonella Typhi ATCC 6539	50-100	good-luxuriant	>=50%	colourless to pale pink
Shigella sonnei ATCC 25931	50-100	good-luxuriant	>=50%	colourless to pale pink
Staphylococcus aureus ATCC 25923	>=10^3	inhibited	0%	
Enterobacter cloacae ATCC 13047	50-100	good	40-50%	pink
Salmonella Typhimurium ATCC 14028	50-100	good-luxuriant	>=50%	colourless
Salmonella Enteritidis ATCC13076	50-100	good-luxuriant	>=50%	colourless
Shigella flexneri ATCC 12022	50-100	good-luxuriant	>=50%	colourless

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: 2-8^0 in sealable plastic bags for 2-5 days.

Further Reading

1. Endo, 1904, Zentralbl. Bakteriol., Abt. I. Orig., 35:109.

Disclaimer :

- User must ensure suitability of the product(s) in their application prior to use.
- The product conforms 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.
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