

Technical Information

Endo DEV Agar

Product Code: DM 2604

Application: - Endo DEV Agar is a selective agar used for the isolation and differentiation of *Escherichia coli* in the bacteriological analysis of water.

Composition**

Ingredients	Gms / Litre
Lactose	10.000
Meat peptone	10.000
Meat extract	10.000
Sodium chloride	5.000
Sodium sulphite	2.500
Basic fuchsin	0.500
Agar	20.000
Final pH (at 25°C)	7.4±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Endo Agar was developed by Endo to differentiate gram-negative bacteria on the basis of lactose fermentation, while inhibiting gram-positive bacteria (1). Endo DEV Agar is the modification of Endo Agar (1) according to the German legislation, to obtain a better detection of damaged coliforms. The agar concentration in Endo DEV Agar has been increased to maintain the strength of the medium after the water sample is incorporated. Also the buffering system is removed from this formulation. It includes more rich nutrient base and sodium chloride to restore the osmotic balance.

The medium contains meat peptone and meat extract, which supply nitrogen, carbon, vitamins and minerals required for bacterial growth. Sodium sulphite and basic fuchsin make this medium selective by suppressing gram-positive organisms. Coliforms produce pink colonies on fermenting lactose while lactose non-fermenters produce colourless colonies on the medium.

With *Escherichia coli*, this reaction is very pronounced as the fuchsin crystallizes, exhibiting a permanent greenish metallic luster (fuchsin luster) to the colonies. Medium should be stored away from light to avoid photo-oxidation.

Methodology

Suspend 58 grams of dehydrated media in 1000 ml distilled water. Mix thoroughly & heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Shake 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

Appearance

Light pink to purple homogeneous free flowing powder

Gelling

Firm, comparable with 2.0% Agar gel.

Colour and Clarity

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

Reaction

Reaction of 5.8% w/v aqueous solution at 25°C. pH : 7.4±0.2

pH Range

7.20-7.60

Cultural Response

M1604: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Colour of Colony
<i>Bacillus subtilis</i> ATCC 6633	>=10 ³	inhibited	0%	-
<i>Enterobacter aerogenes</i> ATCC 13048	50-100	good-luxuriant	>=50%	pink
<i>Enterococcus faecalis</i> ATCC 29212	50-100	none-poor	<=10%	pink, small
<i>Escherichia coli</i> ATCC 25922	50-100	good-luxuriant	>=50%	pink to rose red with metallic sheen
<i>Klebsiella pneumoniae</i> ATCC 13883	50-100	good-luxuriant	>=50%	pink, mucoid
<i>Proteus vulgaris</i> ATCC 13315	50-100	good-luxuriant	>=50%	colourless to pale pink
<i>Pseudomonas aeruginosa</i> ATCC 27853	50-100	good-luxuriant	>=50%	colourless, irregular
<i>Salmonella Typhi</i> ATCC 6539	50-100	good-luxuriant	>=50%	colourless to pale pink
<i>Shigella sonnei</i> ATCC 25931	50-100	good-luxuriant	>=50%	colourless to pale pink
<i>Staphylococcus aureus</i> ATCC 25923	>=10 ³	inhibited	0%	-
<i>Enterobacter cloacae</i> ATCC 13047	50-100	good	40-50%	pink
<i>Salmonella Typhimurium</i> ATCC 14028	50-100	good-luxuriant	>=50%	colourless
<i>Salmonella Enteritidis</i> ATCC 13076	50-100	good-luxuriant	>=50%	colourless
<i>Shigella flexneri</i> ATCC 12022	50-100	good-luxuriant	>=50%	colourless

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and prepared medium at 2 - 8°C. Use before expiry date on the label.

Prepared Media: 2-8° 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 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
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