Endo DEV Agar

M1604

Endo DEV Agar is a selective agar recommended 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

Directions

Suspend 58 grams in 1000 ml distilled water. Heat to boiling 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.

Principle And 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 provide 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.

Quality Control

Appearance
Light pink to purple homogeneous free flowing powder

Gelling
Firm, comparable with 2.0% 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 5.8% w/v aqueous solution at 25°C. pH : 7.4±0.2

pH
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
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	<=10%	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 ATCC 13076	50-100	good-luxuriant	>=50%	colourless
Shigella flexneri ATCC 12022	50-100	good-luxuriant	>=50%	colourless

Storage and Shelf Life

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

Reference

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

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Disclaimer :

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