



Hicrome ECD Agar w/ MUG

M1488

Hicrome ECD Agar w/ MUG is recommended for the detection of *Escherichia coli* in water and food samples by using a combination of chromogenic and fluorogenic substrate

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	20.000
Bile salts mixture	1.500
L-Tryptophan	1.000
Lactose	5.000
Sodium chloride	5.000
Dipotassium hydrogen phosphate	4.000
Potassium dihydrogen phosphate	1.500
Fluorogenic substrate	0.070
Chromogenic substrate	0.100
Agar	15.000
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 53.17 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.

Principle And Interpretation

HiCrome ECD Agar w/ MUG is recommended for rapid detection of *Escherichia coli* by using a combination of chromogenic and fluorogenic substrates. The presence of *Escherichia coli* is indicated by blue coloured colony formation due to cleavage of chromogenic substrate. Fluorogenic substrate permits rapid detection of *Escherichia coli* when medium is observed for fluorescence using UV light (1,2). Fluorogenic substrate also detects anaerogenic strains, which may not be detected in conventional procedure (1). It is hydrolysed by enzyme β-D-glucuronidase, possessed by *Escherichia coli* to yield a fluorescent end product. The reaction is indicated by a blue fluorescence under UV light.

Casein enzymic hydrolysate provides essential nutrients. Lactose is the fermentable carbohydrate. Sodium chloride maintains osmotic equilibrium. The medium has a strong buffering system to control the pH in the presence of fermentive action. The bile salt mixture inhibits gram-positive bacteria especially Bacillus species and faecal Streptococci.

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Light amber coloured, clear gel forms in Petri plates

Reaction

Reaction of 5.32% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH

6.80-7.20

Cultural Response

M1488: Cultural characteristics observed after an incubation at 44-45°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Colour of Colony	Fluorescence (under uv)	Indole
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Cultural Response

<i>Enterococcus faecalis</i> ATCC 29212	$\geq 10^3$	inhibited	0%			
<i>Escherichia coli</i> ATCC 25922	50-100	good	40-50%	bluish-green	positive	positive reaction
<i>Klebsiella pneumoniae</i> ATCC 13883	50-100	good	40-50%	colourless	negative	negative reaction
<i>Pseudomonas aeruginosa</i> ATCC 27853	50-100	good	40-50%	colourless	negative	negative reaction
<i>Staphylococcus aureus</i> ATCC 25923	$\geq 10^3$	inhibited	0%			

Storage and Shelf Life

Store dehydrated powder and prepared medium at 2-8°C in tightly closed container. Use before expiry period on the label.

Reference

1. Feng PCS and Hartman PAS, (1982), Appl. Environ. Microbiol. 43:132.
2. Robinson (1984), Appl. Environ. Microbiol., 48:285.

Revision : 2 / 2015

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