

## 09142 ECD ChromoSelect Agar with MUG

For the detection of *Escherichia coli* in water and food samples by using a combination of chromogenic and fluorogenic substrate.

### Composition:

Ingredients	Grams/Litre
Tryptone (vegetable)	20.0
Synthetic detergent (Bile salt replacement)	1.5
Tryptophan	1.0
Lactose	5.0
Sodium chloride	5.0
Dipotassium hydrogen phosphate	4.0
Potassium dihydrogen phosphate	1.5
Fluorogenic substrate (MUG)	0.07
Chromogenic substrate	0.1
Agar	15.0
Final pH 7.0 +/- 0.2 at 25°C	

Store prepared media below 8°C, protected from direct light. Store dehydrated powder, in a dry place, in tightly-sealed containers at 2-25°C.

Appearance: Light yellow coloured, homogeneous, free flowing powder.  
 Colour and Clarity: Light amber coloured, clear gel forms in petri plates.

### Directions:

Suspend 53.17 g in 1000 ml distilled water. Boil to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

### Principle and Interpretation:

ECD ChromoSelect Agar with 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 (MUG) 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  $\beta$ -D-Glucuronidase, possessed by *Escherichia coli* to yield a fluorescent end product. The reaction is indicated by a blue fluorescence under UV light. Tryptone (vegetable) provides essential nutrients. Lactose is the fermentable carbohydrate. Sodium chloride maintains osmotic equilibrium. The medium has a strong buffering system (potassium phosphates) to control the pH in the presence of fermentive action. The synthetic detergent inhibits gram-positive bacteria especially *Bacillus species* and faecal Streptococci.

Cultural characteristics after 18-24 hours at 44°C.

Organisms (ATCC)	Growth	Colour of Colony	Fluorescence under UV light	Indole Reaction
<i>E. coli</i> (25922)	++	blue	+	+
<i>K. pneumoniae</i> (13883)	++	colourless	-	-
<i>S. aureus</i> (25923)	-	-	-	-
<i>E. faecalis</i> (29212)	++	colourless	-	-



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#### References:

1. P.C.S. Feng, P.A.S., Hartman, Fluorogenic assays for immediate confirmation of *Escherichia coli*, Appl. Environ. Microbiol. 43, 1320-1329 (1982)
2. B.J. Robinson, Evaluation of a fluorogenic assay for detection of *Escherichia coli* in foods. Appl. Environ. Microbiol., 48, 285-288 (1984)

#### Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

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