



## Hicrome™ ECD Agar w/ MUG

M1488

### Intended use

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
Tryptone	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 purified/distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C. Mix well and pour into sterile Petri plates.

### 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  $\beta$ -D-glucuronidase, possessed by *Escherichia coli* to yield a fluorescent end product. The reaction is indicated by a blue fluorescence under UV light.

Tryptone provides carbon, nitrogen substances, long chain amino acids, vitamins and other 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*.

### Type of specimen

Clinical samples; Food samples; Water samples

### Specimen Collection and Handling

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (4,5).

For food samples, follow appropriate techniques for sample collection and processing as per guidelines ( ).

For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards (3).

After use, contaminated materials must be sterilized by autoclaving before discarding.

### Warning and Precautions :

In Vitro diagnostic Use only. Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling clinical specimens. Safety guidelines may be referred in individual safety data sheets

## Limitations

1.  $\beta$ -glucuronidase is present in 97% of *E.coli* strains, however few *E.coli* may be negative.
2. Slight colour variation may be observed depending upon the utilization of the substrate by the organism.

## Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

## Quality Control

### Appearance

Cream to 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
<i>Enterococcus faecalis</i> ATCC 29212 (00087*)	$\geq 10^3$	inhibited	0%			
<i>Escherichia coli</i> ATCC 25922 (00013*)	50-100	good	40-50%	bluish-green	positive	positive reaction
<i>Klebsiella pneumoniae</i> ATCC 13883 (00097*)	50-100	good	40-50%	colourless	negative	negative reaction
<i>Pseudomonas aeruginosa</i> ATCC 27853 (00025*)	50-100	good	40-50%	colourless	negative	negative reaction
<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC 25923 (00034*)	$\geq 10^3$	inhibited	0%			

Key : \* Corresponding WDCM numbers.

## Storage and Shelf Life

Store dehydrated powder and prepared medium on receipt at 2-8°C. Use before expiry period on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition Seal the container tightly after use. Use before expiry date on the label. Product performance is best if used within stated expiry period.

## Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques ( ).

## Reference

1. Baird R.B., Eaton A.D., and Rice E.W., (Eds.), 2015, Standard Methods for the Examination of Water and Wastewater, 23rd ed., APHA, Washington, D.C.
2. Feng PCS and Hartman PAS, (1982), Appl. Environ. Microbiol. 43:132.
3. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
4. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock, D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.
5. Robinson (1984), Appl. Environ. Microbiol., 48:285.
6. Salfinger Y., and Tortorello M.L. Fifth (Ed.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.

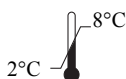
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In vitro diagnostic medical device



CE Marking



Storage temperature



Do not use if package is damaged



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23 Vadhani Industrial Estate,  
LBS Marg, Mumbai-86, MS, India



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DB Maarn The Netherlands,  
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