



HiCrome EC O157:H7 Agar

M1574

HiCrome EC O157: H7 Agar is a chromogenic medium recommended for isolation and differentiation of *Escherichia coli* O157:H7 from food and environmental samples.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	8.000
Sorbitol	7.000
Bile salts mixture	1.500
Sodium lauryl sulphate	0.100
Chromogenic mixture	0.250
Agar	12.000
Final pH (at 25°C)	6.8±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 28.85 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. Cool to 50°C and pour into sterile Petri plates. This medium can be made more selective by aseptically adding 0.25 ml of rehydrated contents of one vial of FD052 (1% Potassium Tellurite Solution) to 1000 ml molten and cooled medium (45°C).

Principle And Interpretation

Escherichia coli O157:H7 belongs to the Enterohemorrhagic *Escherichia coli* (EHEC) group and it predominates as a food borne pathogen. *E.coli* O157: H7 was first recognized as a human pathogen in 1982 when two outbreaks of hemorrhagic colitis were associated with consumption of undercooked ground beef that has been contaminated with this organism (1).

HiCrome EC O157:H7 Agar is a chromogenic medium recommended for the isolation and differentiation of *E.coli* O157:H7 from food and environmental samples. HiCrome EC O157:H7 Agar is based on the formulation described by Rappaport and Henigh (2). The medium contains sorbitol and a chromogenic mixture instead of lactose and indicator dyes respectively, as is conventionally used. The chromogenic substrate is specifically and selectively cleaved by *E.coli* O157: H7 resulting in a dark purple to magenta coloured moiety. *E.coli* give light pink - mauve coloured colonies.

Casein enzymic hydrolysate provides carbonaceous, nitrogenous and growth nutrients. Sodium chloride maintains osmotic equilibrium. Bile salts mixture and Sodium lauryl sulphate inhibits gram-positive organisms. Potassium tellurite selects the serogroups and inhibits *Aeromonas* species and *Providencia* species.

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.2% Agar gel.

Colour and Clarity of prepared medium

Light amber coloured, clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 2.88% w/v aqueous solution at 25°C. pH : 6.8±0.2

pH

6.60-7.00

Cultural Response

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

Cultural Response

Organism	Inoculum (CFU)	Growth	Recovery	Colour of Colony
Cultural Response				
<i>Bacillus subtilis</i> ATCC 6633	$\geq 10^3$	inhibited	0 %	
<i>Escherichia coli</i> O157:H7 (NCTC 12900)	50-100	luxuriant	$\geq 50\%$	dark purple-magenta
<i>Escherichia coli</i> ATCC 25922	50-100	luxuriant	$\geq 50\%$	light pink-mauve
<i>Klebsiella pneumoniae</i> ATCC 13883	50-100	luxuriant	$\geq 50\%$	blue, mucoid
<i>Pseudomonas aeruginosa</i> ATCC 27853	50-100	luxuriant	$\geq 50\%$	colourless
<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. Use before expiry period on the label.

Reference

- Downes F. P. and Ito K., (Ed.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th Ed., American Public Health Association, Washington, D.C.
- Rappaport F. and Henigh E., 1952, J. Clin. Pathol., 5:361.

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