

92587 EC O157:H7 ChromoSelect Agar, Modified

A chromogenic medium recommended for isolation and differentiation of *E. coli* O157:H7 from food and environmental samples.

Composition:

Ingredients	Grams/Litre
Tryptone	5.0
Yeast extract	3.0
Sorbitol	7.0
Bile salts mixture	1.5
Sodium Lauryl Sulfate	0.1
Chromogenic mixture	0.25
Agar	12.0
Final pH 6.8 +/- 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 below 8°C.

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

Directions:

Suspend 28.85 g in 1 liter 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 1% potassium tellurite solution (Cat. No. 17774) to 1 liter molten and cooled medium (45-50°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).

EC O157:H7 *ChromoSelect* Agar for the isolation and differentiation of *E. coli* O157:H7 from food and environmental samples. The medium is based on the formulation described by Rappaport and Henigh (2). The medium contains sorbitol and a proprietary chromogenic mixture instead of lactose and indicator dyes respectively.

The chromogenic substrate is specifically and selectively cleaved by *Escherichia coli* O157:H7 resulting in a dark purple to magenta coloured moiety. *Escherichia coli* gives bluish green coloured colonies. Tryptone and yeast extract provides carbonaceous, nitrogenous and growth nutrients. Sodium chloride maintains osmotic equilibrium. Bile salts mixture and sodium lauryl sulfate inhibits gram positive organisms. Potassium tellurite selects the serogroups and inhibits *Aeromonas* species and *Providencia* species (3).

Limitation: Due to variable nutritional requirements, some strains show poor growth on this medium.



Cultural characteristics after 18 - 24 hours at 35-37°C.

Organisms (ATCC)	Inoculum (CFU)	Growth	Recovery [%]	Colour of Colony
<i>Bacillus subtilis</i> (6633)	$\geq 10^3$	-	0	-
<i>Escherichia coli</i> 0157:H7 (NCTC 12900)	50-100	+++	≥ 50	dark purple - magenta
<i>Escherichia coli</i> (25922, WDCM 00013)	50-100	+++	≥ 50	bluish green
<i>Klebsiella pneumoniae</i> (13883)	50-100	+++	≥ 50	blue, mucoid
<i>Pseudomonas aeruginosa</i> (27853, WDCM 00025)	50-100	+++	≥ 50	colourless
<i>Staphylococcus aureus</i> (25923, WDCM 00034)	$\geq 10^3$	-	0	-

References:

1. F.P. Downes, K. Ito, (Ed.), Compendium of Methods for the Microbiological Examination of Foods, 4th Edition, American Public Health Association, Washington, D.C. (2001)
2. F. Rappaport, E. Henigh, J. Clin. Path., 5:361.
3. P.M. Zadik, P.A. Chapman, C.A. Siddons, Use of tellurite for the selection of verocytotoxigenic *Escherichia coli* O157, J. Med. Microbiol., 39, 155-158 (1993)

Precautions and Disclaimer

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