



HiCrome Enrichment Broth Base for EC O157:H7

M1598

HiCrome Enrichment Broth Base for EC O157:H7 is recommended for isolation and selective differentiation of *Escherichia coli* O157:H7 from food and environmental samples by chromogenic method.

Composition**

Ingredients	Gms / Litre
Casein enzymic hydrolysate	10.000
Sorbitol	10.000
Bile salts mixture	1.500
Chromogenic mixture	1.300
Final pH (at 25°C)	7.1±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 11.4 grams in 500 ml distilled water. Heat if necessary to dissolve the medium completely. Sterilize by autoclaving at 15lbs pressure (121°C) for 15 minutes. For selective isolation of *E.coli* O157:H7, aseptically add the rehydrated contents of 1vial of HiCrome EC O157:H7 Selective Supplement I (FD230). Mix well and dispense into sterile test tubes.

Principle And Interpretation

March and Ratnam (1) reported the inability of *Escherichia coli* O157:H7 to ferment sorbitol while developing Sorbitol MacConkey medium. Subsequently Thomson et al (2) observed the absence of β-glucuronidase activity in *E.coli* O157:H7 from a variety of samples by direct culture.

The medium contains casein enzymic hydrolysate that provides nitrogenous, carbonaceous compounds and other essential growth nutrients. Sorbitol is the fermentable carbohydrate; bile salt mixture inhibits most of the gram-positive organisms. Addition of tellurite (FD230) makes the medium more specific and selective. The bluish colour development by colonies of *E.coli* and *Klebsiella* in the medium is due to the enzymes β-D-galactosidase and β-glucuronidase that cleaves the chromogenic substrates present in chromogenic mixture. However *E.coli* O157:H7 gives a purple colour to the medium due to the absence of β-glucuronidase and its inability to ferment sorbitol.

Key: *: Formerly known as *Enterobacter sakazakii*

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Colour and Clarity of preapred medium

Light yellow coloured, clear solution without any precipitate

Reaction

Reaction of 2.28% w/v aqueous solution at 25°C. pH : 7.1±0.2

pH

6.90-7.30

Cultural Response

M1598: Cultural characteristics observed with added HiCrome EC O157:H7 Selective Supplement I (FD230), after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Colour of Medium	Growth (after addition of FD230)	Colour of Medium (after addition of FD230)
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Cultural Response

<i>Escherichia coli</i> ATCC 25922	50-100	good-luxuriant	blue may show slight precipitation of growth	inhibited	
<i>Escherichia coli</i> 0157:H7 (NCTC 12900)	50-100	good-luxuriant	purple may show slight precipitation of growth	good-luxuriant	purple may show slight precipitation of growth
<i>Enterococcus faecalis</i> ATCC 29212	$\geq 10^3$	inhibited		inhibited	
* <i>Cronobacter sakazakii</i> ATCC 12868	50-100	good-luxuriant	white may show slight precipitation of growth	none-poor	colourless may show slight precipitation of growth
<i>Klebsiella pneumoniae</i> ATCC 13883	50-100	good-luxuriant	bluish-green may show slight precipitation of growth	good	bluish green may show slight precipitation of growth
<i>Staphylococcus aureus</i> ATCC 25923	$\geq 10^3$	inhibited		inhibited	
<i>Salmonella Enteritidis</i> ATCC 13076	50-100	good-luxuriant	colourless may show slight precipitation of growth	good	colourless may show slight precipitation of growth
<i>Shigella flexneri</i> ATCC 12022	50-100	good	colourless	inhibited	

Storage and Shelf Life

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

Reference

1. March S. B and Ratnam S., 1986, J. Clin. Microbiol., 23:869-872.
2. Thompson J. S., Hodge D. S., Borczyk A. A., 1990, J. Clin. Microbiol. 28, 2165-2168.

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