

HiCrome™ EC 0157: H7 Agar, Modified

Recommended for isolation and differentiation of *Escherichia coli* O157:H7 from food and environmental samples.

M1574A

Composition **

Ingredients	Grams/Litre
Tryptone	8.000
Sorbitol	7.00
Bile salts mixture	1.50
Sodium Lauryl Sulphate	0.10
Chromogenic mixture	0.25
Agar	12.00

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 45-50°C. Mix well 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 1% Potassium Tellurite Solution (FD052) to 1000 ml 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).

HiCrome™ EC 0157:H7 Agar, Modified is a chromogenic medium recommended for the isolation and differentiation of *E. coli* O157:H7 from food and environmental samples. HiCrome™ EC0157:H7 Agar, Modified 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, 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* gives bluish green coloured colonies. Tryptone and yeast extract provides carbonaceous, nitrogenous and growth nutrients. Bile salts mixture and SLS inhibits gram-positive organisms. Potassium tellurite selects the serogroups and inhibits *Aeromonas* species and *Providencia* species.

Type of specimen

Food and Environmental samples.

Specimen Collection and Handling

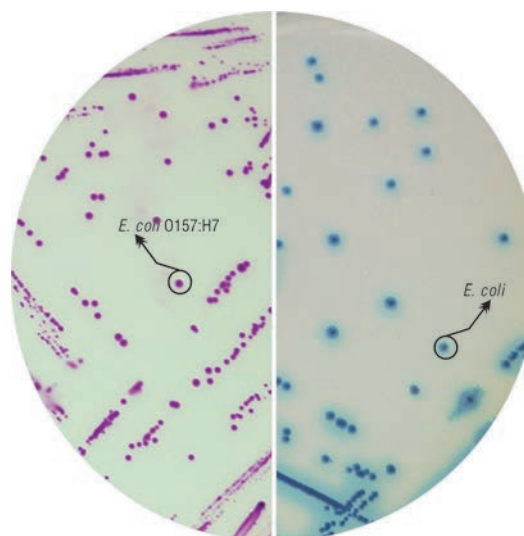
For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (3, 4, 5).

Warning and Precautions

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 specimens. Safety guidelines may be referred in individual safety data sheets

Limitations

1. Some species may show poor growth due to varying nutritional requirements.
2. Further biochemical test must be carried out for confirmation.



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Performance and Evaluation

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

Quality Control

- Appearance of Powder** : Cream to yellow coloured, 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.
- Cultural Response** : Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Organisms (ATCC)	Inoculum (CFU)	Growth	Recovery	Colour of colony
<i>Escherichia coli</i> O157:H7 (NCTC 12900)	50-100	luxuriant	≥50%	dark purple-magenta
<i>Escherichia coli</i> (25922) (00013*)	50-100	luxuriant	≥50%	bluish green
<i>Klebsiella pneumoniae</i> (13883) (00097*)	50-100	luxuriant	≥50%	colourless mauve (mucoid)
<i>Pseudomonas aeruginosa</i> (27853) (00025*)	50-100	luxuriant	≥50%	colourless
<i>Bacillus subtilis</i> sub spizizenii (6633) (00003*)	≥10 ³	inhibited	0%	-
<i>Staphylococcus aureus</i> subsp aureus (25923) (00034*)	≥10 ³	inhibited	0%	-

Key : * : corresponding WDCM Numbers

Storage and Shelf-life

Store between 2-8°C in a tightly closed container and the prepared medium at 2-8°C. Use before expiry date 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 sample must be decontaminated and disposed of in accordance with current laboratory techniques (6, 7).

References

- 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.
- American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed., Washington D.C.
- 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.
- Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed APHA Inc., Washington, D.C.
- Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2nd Edition.
- 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.

Ready Prepared Media			
Code	Product Name	Usage	Packing
Category : Dirfilter Membrane Nutrient Pad			
MF019	EC 0157 : H7 Filter Membrane Medium (without Membrane Filter)	for detection and enumeration of enterohaemorrhagic <i>E. coli</i> based on chromogenic differentiation.	20 plts 50 plts
MF019E	EC 0157 : H7 Filter Membrane Medium (Economy pack) (without Membrane Filter)	for detection and enumeration of enterohaemorrhagic <i>E. coli</i> based on chromogenic differentiation.	20 plts 50 plts
MF019F	EC 0157 : H7 Filter Membrane Medium w/ Sterile Membrane Filter	for detection and enumeration of enterohaemorrhagic <i>E. coli</i> based on chromogenic differentiation.	20 plts 50 plts