



Reference: 06-146LYO1

Scharlau Microbiology - Technical Data

Product: CT SMAC SUPPLEMENT

Specification

Sterile selective supplement used for isolation of *E.coli* O157

Presentation

10 Freeze dried vials
Vial
with: 3 ± 0.1 g

Packaging Details

23x60 mm glass vials, tag labelled, White plastic cap -
10 vials per box.

Shelf Life

49 months

Storage

2-25 °C

Composition

Composition (vial):

Cefixime.....0.025 mg

Potassium tellurite..... 1.250 mg

Reconstitute the original freeze-dried vial

with:

sterile distilled water.....6 ml

Description /Technique

Description:

The principal cause of haemorrhagic colitis, and others significant human illnesses characterised by bloody diarrhoea and severe abdominal pain, is suppose to be *Escherichia coli* O157 .

The selectivity is due to the high level of potassium tellurite who separates *serogroup* O157 from other *E. coli serogroups* and inhibits *Providencia* and *Aeromonas spp.*

Cefixime is inhibitory to *Proteus spp.*

Instead of the majority *E. coli* strains, this microorganism does not ferment sorbitol producing colourless colonies (brownish-yellow) in A. MaConkey Sorbitol.

Technique:

Collect, dilute and prepare samples and volumes as required according to specifications, directives, official standard regulations and/or expected results.

Reconstitute the vial with 6 ml to the sterile diluent (distilled water) in aseptic conditions and add it to 500 ml of any melted Agar base cooled to 50°C. Do not overheat once supplemented.

Pour the complete medium into Petri dishes and, once solidified on a flat surface, spread the plates either by streaking or by spiral method.

Incubate the plates in aerobic atmosphere at 37 ± 1 °C for 21± 3h.

(Incubation times, temperature and sample volumes may vary depending on the sample, on the specifications,...)

After incubation, count all the colonies that have appeared onto the surface of the agar.

Presumptive isolation / recovery of *E.coli* O157 must be confirmed by further microbiological and biochemical tests.



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Quality control

Physical/Chemical control

Color : Off-white

Microbiological control

Add 1 vial to 500 ml of medium base. DO NOT HEAT once supplemented.

Inoculate: Practical range 100 ± 20 CFU. min. 50 CFU (productivity)/ 10^4 - 10^6 (selectivity).

Analytical methodology according to ISO 11133:2014/A1:2018; A2:2020.

Distribute the complete medium, cooled to 50 °C, into 90 mm plates

Aerobiosis. Incubation at 37 ± 1 °C, reading after 21 ± 3 h

Microorganism

E. coli 0157:H7 (non toxg.) ATCC® 700728 WDCM 00014

Escherichia coli ATCC® 8739, WDCM 00012

Staphylococcus aureus ATCC® 6538, WDCM 00032

Escherichia coli ATCC® 43888

Stph. aureus ATCC® 25923, WDCM 00034

Sterility control

Add 5 ml of the sample to:

100 ml TSB and 100 ml Thioqlycollate.

Incubation 48 h at 30-35 °C and 48 h at 20-25 °C: NO GROWTH.

Growth

Good. Colourless colonies (brownish-yellow)

Partial Inhibition- Red colonies

Inhibited

Poor to good. Transparent colonies (Brown-yellowish)

Inhibited

Bibliography

- ADAMS, S. (1991) Screening for verotoxin-producing *E. coli*. *Clin Lab. Science* 4:1:19-20.
- ATLAS, R.M., L.C. PARKS (1993) *Handbook of Microbiological Media*. CRC Press Inc., London.
- DOWNES, F.P. & K. ITO (2001) *Compendium of Methods for the Microbiological Examination of Foods*. 4th ed. APHA. Washington.
- FDA (food and drug administration) (1998) *Bacteriological Analytical Manual*. 8th ed. Revision A. AOAC International. Gaithersburg, MD. USA.
- HEUVELINK, A.E. (2003) Review of media for the isolation of diarrhoeagenic *Escherichia coli*, in "Handbook of Culture Media for Food Microbiology", § 16. J.E.L. Corry et al. (Eds.) Elsevier Sci. B.V. Amsterdam.
- HITCHINS, A.D., P. FENG, W.D. WATKINS, S.R. RIPEY & C.A. CHANDLER (1998) *E. coli* and coliform bacteria. In "Bacteriological Analytical Manual" 8th ed., AOAC International. Gaithersburg, MD. USA.
- HORWITZ, W. (2000) *Official Methods of Analysis*. AOAC Intl. Gaithersburg, MD. USA.
- ISO Standard 16654 (2001) *Microbiology of food and animal feeding stuffs*. Horizontal method for the detection of *Escherichia coli* O157.
- ISO 11133:2014/ Adm 1:2018. *Microbiology of food, animal feed and water*. Preparation, production, storage and performance testing of culture media.
- MARCH, S.B. & S. RATMANN (1986) Sorbitol-MacConkey Medium for detection of *E. coli* O157:H7 associated with hemorrhagic colitis. *J. Clin. Microbiol.* 23:869-872.
- MacCONKEY, A.T. (1905) Lactose-fermenting Bacteria in faeces. *J. Hyg* 5:333.
- MURRAY, P.R., E.J. BARON, M.A. PFALLER, F.C. TENOVER, & R.H. YOLKEN (Eds) (1995) *Manual of Clinical Microbiology* 6th ed. A. S.M. Washington. DC. USA.
- RAPPAPORT, F. & E. HENING (1952) Media for the isolation and differentiation of pathogenic *E. coli* (serotypes O111 and O55) *J. Clin. Pathology* 5:361-362.
- VARNAM, A.H. & M.G. EVANS (1991) *Food-borne pathogens*. Manson Publishing Ltd., London. UK.
- ZADIK, P.M., P.A. CHAPMAN, & C.A. SIDONS (1993) Use of tellurite for the selection of verocytotoxigenic *Escherichia coli* O157. *J. Med. Microbiol.* 39:155-158.