Cefixime Tellurite Supplement (CT) ISO

Cat. 6064

A selective supplement for the isolation of E. coli O157:H7.

Practical information

Aplications	Categories
Selective isolation	Escherichia coli O157

Industry: Clinical / Food

Regulations: ISO 16654

CE IVD

Principles and uses

Cefixime Tellurite Supplement is added to standard Sorbitol MacConkey agar media, which is an internationally accepted culture media for the selective isolation of E. coli O157:H7.

Macconkey Agar with Sorbitol (CT-SMAC) (Cat. 1099) is based on the formula developed by Rappaport & Hening. This medium is recommended for the research of E. coli O157:H7 in clinical and food testing. The composition is similar to MacConkey Agar (Cat. 1052) but the lactose has been substituted with sorbitol for differentiating enteropathogenic E. coli serotypes. These strains are typically sorbitol-negative. On standard MacConkey Agar containing lactose, this strain cannot be distinguished from other lactose fermenting E. coli.

E. coli O157:H7 does not ferment Sorbitol and therefore produces colorless colonies. As most of the other E. coli do ferment it, their colonies are pink.

The addition of cefixime and tellurite significantly reduces the number of sorbitol nonfermenters that need to be screened during the attempted isolation of E. coli O157:H7. Cefixime inhibits Proteus spp. and tellurite inhibits non-O157 E. coli and other organisms, thus improving the selectivity of the medium.

Formula per vial

Potassium tellurite (mg)	1,25	Cefixime (mg)	0,025

Preparation

Aseptically reconstitute 1 vial with 5 ml of sterile distilled water. Mix gently until complete dissolution and aseptically add to 500 ml of MacConkey Agar with Sorbitol (CT-SMAC) (Cat. 1099), autoclaved and cooled to 45-50 ºC. Mix well and distribute into sterile containers.

When Cefixime Tellurite Supplement (CT) is required to be added to another media, like E. coli O157:H7 Chromogenic Agar Base (Cat. 1588), refer to the specific instructions of the medium for the quantity of Cefixime Tellurite Supplement (CT) that should be added.

Instructions for use

» For clinical diagnosis, the type of sample is feces.
- Inoculate on the surface. Parallel striae with the handle or hyssop.
- Incubate in aerobic conditions at 35±2 ºC for 18-24 hours.
- Reading and interpretation of the results.

» For other uses not covered by the CE marking:
Detection of Escherichia coli O157 according to ISO 16654:
- Prepare the initial suspension adding the test portion to Tripticasein Soy Broth Modified with Novobiacin (Cat. 1292) prewarmed to 41,5 ºC to obtain a ratio of 1/10.
- Separate and concentrate the microorganisms by immunogenic particles coated with antibodies to E. coli O157.
- Incubate for 6 hours then a further 12 hours to 18 hours at 41,5 ºC.
- Subculture the immunomagnetic particles with the bacteria adhered on MacConkey Agar with Sorbitol (Cat. 1099) and a second selective isolation agar of choice by the laboratory. The optimal incubation temperature for E. coli O157 is 37±1 ºC for 18-24 hours.
- Confirm by indol production in Tryptophan Culture Broth (Cat. 1237) and agglutination with the serum anti E. coli O157.

Quality control

Solubility	Appareance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25ºC)
w/o rests	White lyophilized	N/A	Transparent	N/A

Microbiological test

According to ISO 11133:
Incubation conditions: (37±1 ºC / 21±3 h).
Inoculation conditions: Productivity qualitative (10^3 - 10^4 CFU) / Selectivity (10^4- 10^6 CFU).

Microrganisms	Specification	Characteristic reaction
Escherichia coli ATCC 25922	Inhibición parcial (1)	Growth of some pink colonies
Staphylococcus aureus ATCC 25923	Total inhibition (0)	
Escherichia coli O157:H7 ATCC 700728	Good growth (2)	Transparent colonies with a pale yellowish-brown appearance and a diameter ~1 mm

Storage

Temp. Min.:2 ºC
Temp. Max.:8 ºC

Bibliography

Doyle, M.P. and J.L. Schoeni. 1987. Applied Environmental Microbiology 53:2394-2396.
J. G Wells et al, 1991. Isolation of Escherichia coli serotype O157:H7 and other Shiga-like-toxin-producing E. coli from dairy cattle.