

Cefixime Supplement

PRODUCT INFORMATION

C051-25mg - Cefixime, Powder, 25mg

C051-100mg - Cefixime, Powder, 100mg

DESCRIPTION

Cefixime Rhamnose Sorbitol Macconkey Agar (CR-SMAC Agar Base) with Cefixime Supplement is a medium designed for differentiation of *Escherichia coli* O157.

BACKGROUND

Cefixime is an oral third generation cephalosporin antibiotic.

Mechanism of action

APPLICATION IN MODIFIED TRYPTONE SOYA BROTH (MTSB)

The addition of rhamnose to Sorbitol MacConkey Agar (SMAC) has been shown to aid the differentiation of *Escherichia coli* O157 from background flora. Approximately 60% of non-sorbitol fermenting *Escherichia coli* of serogroups other than O157 ferment rhamnose (Sheffield PHL, unpublished data). Cefixime has been shown to reduce the level of competing flora, particularly *Proteus* spp., that often account for large numbers of non-sorbitol fermenting colonies.

Escherichia coli O157 do not usually ferment sorbitol or rhamnose, so will appear as straw coloured colonies. However, rhamnose is fermented by most sorbitol negative *Escherichia coli* of other serogroups. These colonies will be pink/red and will not be counted as presumptive *Escherichia coli* O157 colonies¹.

Cefixime Rhamnose Sorbitol MacConkey Agar (CR-SMAC) is a selective and differential medium for the detection of *Escherichia coli* O157. Field trials have shown that using CR-SMAC, in conjunction with the more selective CT-SMAC, leads to a higher overall recovery of *Escherichia coli* O157 from enrichment broths.

Content concentrations

Typical Formula*	mg/litre
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Cefixime Rhamnose Sorbitol Macconkey Agar	
Peptone	20
Sorbitol	10
Bile Salts No. 3	1.5
Sodium chloride	5
Rhamnose	5
Neutral red	0.03
Crystal violet	0.001
Agar	15
Final pH 7.1 ± 0.2 @ 25°C	
Cefixime Supplement	
Cefixime	0.05
* Adjusted as required to meet performance standards	

Table 1 - Typical Formula for Cefixime Rhamnose Sorbitol Macconkey Agar (CR-SMAC Agar Base) and Cefixime Supplement

METHOD

Preparation

Suspend appropriate amount of Cefixime Rhamnose Sorbitol Macconkey Agar in distilled water. Mix well and sterilise by autoclaving at 121°C for 15 minutes. Cool to approximately 50°C and aseptically add the contents of one vial of Cefixime Supplement, reconstituted as directed. Mix well and pour into sterile Petri dishes.

Protocol

Inoculate the plates with a suspension of the sample to produce separated colonies. Incubate for 24 hours at 35-37°C.

Examine the plates for straw coloured colonies; these are sorbitol and rhamnose negative organisms. Confirm suspected *Escherichia coli* O157.

Coloured colonies may also occur:

sorbitol positive	pink to red
rhamnose positive	pink to red

Quality control

Positive control:

Escherichia coli O157:H7 NCTC 12900 (sorbitol negative, rhamnose negative): Good growth, straw coloured colonies

Negative control:

Escherichia coli ATCC® 25922 (sorbitol positive): Good growth, pink colonies

Proteus mirabilis ATCC® 29906 (sorbitol negative, rhamnose negative): Inhibited

REFERENCES

1. Chapman, P.A., Siddons, C. A., Zadik, P. M. and Jewes L. (1991) J. Med. Microbiol. 35:107-110
2. Wallace, J. S. and Jones, K. (1996) J. App. Bacteriology 81:663-668

