

83339 Mac Conkey-Sorbitol ChromoSelect Agar

A selective agar for the direct isolation and differentiation of *E. coli* 0157:H7 strains from foodstuffs and clinical specimen.

Composition:

Ingredients	Grams/Litre
Casein enzymic hydrolysate	17.0
Proteose peptone	3.0
Sorbitol	10.0
Bile salts mixture	1.5
Sodium chloride	5.0
Crystal violet	0.001
Neutral red	0.03
5-Bromo-4-Chloro-3-Indolyl- β -D-glucuronide Sodium salt	0.1
Agar	13.5
Final pH (at 25 °C)	7.1 \pm 0.3

Store prepared media below 8°C, protected from direct light. Store dehydrated powder, in a dry place, in tightly-sealed containers at 2-25°C.

Directions:

Suspend 50.1 grams in 1000 ml distilled water. Boil gently to dissolve the medium completely. **DO NOT AUTOCLAVE**. Cool to 50°C. Mix well and pour into sterile petri plates. If desired add Tellurite-Cefixime Supplement to the molten and cooled medium (50°C) before pouring into sterile petri plates.

Principle and Interpretation:

Sorbitol MacConkey Agar is based on the formulation described by Rappaport and Henigh (1). The medium contains sorbitol instead of lactose and it is recommended for the detection of enteropathogenic strains of *E. coli* 0157:H7 which ferments lactose but does not ferment sorbitol (2) and hence produce colorless colonies. Sorbitol fermenting strains of *E. coli* produce pink-red colonies. The red colour is due to production of acid from sorbitol, absorption of neutral red and a subsequent colour change of the dye when pH of the medium falls below 6.8. *E. coli* 0157:H7 has been recognized as a cause of haemorrhagic colitis (3). March and Ratnam (2) reported that the detection of *E. coli* 0157:H7 had a sensitivity of 100% and specificity of 85% on Sorbitol Mac Conkey Agar and they recommended this medium as reliable means of screening *E. coli* 0157:H7.

B.C. indicator is added to detect the presence of an enzyme β -D-glucuronidase which is specific for *E. coli* (4). Strains of *E. coli* possessing β -D-glucuronidase appear as blue coloured colonies on the medium. Enteropathogenic strains of *E. coli* 0157:H7 do not possess β -D-glucuronidase activity (5) and thus produce colorless colonies.

E. coli fermenting Sorbitol and possessing β -D-glucuronidase activity produce purple colored colonies. Casein enzymic hydrolysate and proteose peptone provide carbonaceous, nitrogenous and other essential growth nutrients. Most of the gram positive organisms are inhibited by crystal violet and bile salts. Sodium chloride maintains the osmotic equilibrium.

Addition of Tellurite-Cefixime Supplement makes the medium selective (6). Potassium tellurite selects the serogroups and inhibits *Aeromonas* species and *Providencia* species. Cefixime inhibits *Proteus* species. Pseudomonas if present produces colorless colonies on this medium. For confirmation oxidase test may be performed with suspect colonies and result should be noted within 5-10 seconds.

Cultural characteristics after 24 hours (48h if necessary) at 37°C.



Organisms (ATCC)	Color of Colony *	Sorbitol	β -glucuronidase	Oxidase
<i>Escherichia coli</i> 0157:H7	colorless	-	-	-
<i>Escherichia coli</i> (25922)	purple	+	+	-
<i>Pseudomonas aeruginosa</i> (27853)	colorless	-	-	+

* Color of the colony without addition of Tellurite-Cefixime Supplement

References:

1. Rappaport F. and Henigh E., 1952, J. Clin. Path., 5:361.
2. March S.B., and Ratnam S. (1986), J. Clin. Microbiol. 23, 869-872.
3. Karmali M.A., Petric M., Lim C., et al, 1985, J. infect. Dis., 151-775.
4. Hansen W. und Yourassawsky E., 1984, J. Clin. Microbiol., 20:1177,
5. Thompson (1990), J. Clin. Microbiol. 29, 2165-2168.
6. Zadik P.M., Chapman P.A., and Siddons C.A. (1993), J. Med. Microbiol., 39, 155-158

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

The vibrant M, Millipore, and Sigma-Aldrich are trademarks of Merck KGaA, Darmstadt, Germany or its affiliates. Detailed information on trademarks is available via publicly accessible resources.
© 2018 Merck KGaA, Darmstadt, Germany and/or its affiliates. All Rights Reserved.

The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the US and Canada.

