

MacConkey Sorbitol agar

MacConkey Sorbitol Agar is used for isolation and identification of enteropathogenic Escherichia coli strains associated with infant diarrhea.

REF: BS.1/SK01.100.0100	100 Gram	REF: BS.1/SK01.250.0250	250 Gram
REF: BS.1/SK01.500.0500	500 Gram		

CLINICAL SIGNIFICANCE

MacConkey Sorbitol Agar is based on the formulation described by Rappaport and Henigh (1). This medium is recommended for isolation of enteropathogenic Escherichia coli O157: H7, which ferments lactose but does not ferment sorbitol, hence produces colourless colonies. This organism has been recognized as a cause of hemorrhagic colitis (2). E.coli O157: H7 is a human pathogen associated with hemorrhagic colitis that results from the action of a shiga-like toxin (SLT) (5, 6). On standard MacConkey Agar containing lactose, this strain is indistinguishable from other lactose-fermenting E.coli. In MacConkey Sorbitol Agar Base, lactose is replaced by sorbitol. Unlike most E.coli strains, E.coli O157:H7 ferments sorbitol slowly or not at all (3,8). The growth of E.coli O157:H7 on MacConkey Agar with Sorbitol shows colourless colonies and most of the fecal flora ferment sorbitol and appear pink. MacConkey Agar with Sorbitol therefore permits ready recognition of E.coli O157:H7 (5,6,7).

METHOD PRINCIPLE

Peptone and proteose peptone supply necessary nutrients like nitrogenous and carbonaceous compounds, long chain amino acids, minerals, vitamins and trace ingredients for the growth of organisms. Crystal violet and bile salt mixture present in the medium inhibit growth of gram-positive bacteria. Sodium chloride maintains osmotic equilibrium. Neutral red is an indicator. D-Sorbitol is the fermentable carbohydrate.

MEDIA COMPOSITION

Item	Formula in g/L
Peptone	17
Protese peptone	3
D-Sorbitol	10
Bile salts mixture	1.5
Sodium chloride	5
Neutral red	0.03
Crystal violet	0.001
Agar	13.5

pH 7.1 ± 0.2 at 25°C

PRECAUTIONS AND WARNINGS

Media to be handled by entitled and professionally educated person. Good Laboratories practices using appropriate precautions should be followed in:

- Wearing personnel protective equipment (overall, gloves, glasses,...).
- Do not pipette by mouth.
- In case of contact with eyes or skin; rinse immediately with plenty of soap and water. In case of severe injuries; seek medical advice immediately.
- Handle specimens and inoculated culture bottles as though capable of transmitting infectious agents. All inoculated culture bottles, specimen collection needles, and blood drawing devices

should be decontaminated according to country requirement for waste disposal.

S56: dispose of this material and its container at hazardous or special waste collection point.

S57: use appropriate container to avoid environmental contamination.

S61: avoid release in environment.

For further information, refer to the MacConkey Sorbitol Agar material safety data sheet.

MEDIA PREPARATION, STORAGE AND STABILITY

STORAGE AND STABILITY

BioScien MacConkey Sorbitol Agar should be stored between 10-30°C in a firmly 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 avoid lump development due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in a dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Product performance is best if used within stated expiry period.

PROCEDURE

1. Suspend 50.0 grams in 1000 ml purified / distilled water.
2. Adjust pH to pH 7.1 ± 0.2 at 25°C.
3. Heat to boiling to dissolve the medium completely.
4. Sterilize by autoclaving at 15 lbs. pressure (121°C) for 15 minutes.
5. Mix well and pour into sterile Petri plates.

Deterioration

BioScien MacConkey Sorbitol Agar is Light yellow to pink homogeneous free flowing powder. Prepared medium is Purplish red coloured clear to slightly opalescent gel forms in Petri plates. Media should not be used if there are any signs of deterioration (shrinking, cracking, or discoloration), and contaminations

SPECIMEN COLLECTION AND PRESERVATION

For clinical samples follow appropriate techniques for handling specimens as per established guidelines (11,12). For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (9,10,13). After use, contaminated materials must be sterilized by autoclaving before discarding.

TYPE OF SPECIMEN

Clinical samples- stool,
Food and Dairy samples

Fits your perfection

EQUIPMENT REQUIRED NOT PROVIDED

- Sterile cups
- Sterile petri-dishes
- Incubator
- Autoclave

QUALITY CONTROL

To ensure adequate quality control, it is recommended that positive and negative control included in each run. If control values are found outside the defined range, check the system performance. If control still out of range please contact the technical support.

PERFORMANCE CHARACTERISTICS

The following organisms are used by us as part of the quality assurance of the product. The total inoculum challenge for each test organism per bottle is 10 to 50 colony forming units (CFU's).

Test Organisms	Growth	Colony color
Salmonella Typhi ATCC 6539	Luxuriant	Pink
Shigella flexneri ATCC 12022	Luxuriant	colorless
Escherichia coli ATCC 25922	Luxuriant	Pink
Escherichia coli serotype O11 and O55	Luxuriant	colorless
Escherichia coli O157:H7 NCTC 29900	Luxuriant	colorless

REFERENCES

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SYMBOLS IN PRODUCT LABELLING		
IVD For in-vitro diagnostic use		Number of <n> test in the pack
LOT Batch Code/Lot number		Caution
REF Catalogue Number		Do not use if package is damaged
 Temperature Limitation		Consult Instruction for use
 Expiration Date		
 Manufactured by		