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

**MacConkey Sorbitol agar**

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| REF: V.1/SK01.100.0100 100 gram REF: V.1/SK01.250.0250 250 gram |  REF: V.1/BC01.500.0500 500 gram  |

# CLINICAL SIGNIFICANCE (1,2)

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 (4,5)

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| **Item**  | **Formula in g/L**  |
| PeptoneProtese peptoneD-SorbitolBile salts mixture Sodium chlorideNeutral red Crystal violetAgar  |  173101.550.030.00113.5 |

## pH 7.1 ± 0.2 at 25°C

# PRECAUTIONS AND WARNINGS (2)

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**

**Lab.Vie**. 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

**Lab.Vie**. 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

# 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  | A black and white triangle with a exclamation mark  Description automatically generated Caution  |
|  REF Catalogue Number  | Do not use if package is damaged   |
|   Temperature Limitation   Expiration Date   Manufactured by  |  Consult Instruction for use      |