# TM 1393 - MacCONKEY SORBITOL AGAR BASE

## INTENDED USE

A selective medium for isolation and detection of *Escherichia coli* O157:H7 from food and animal feedstuff.

## PRODUCT SUMMARY AND EXPLANATION

MacConkey Sorbitol Agar is recommended by ISO Committee with a slight modification of MacConkey Sorbitol Agar formulated by Rappaport and Henigh. 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. *E. coli* O157: H7 is a human pathogen associated with hemorrhagic colitis that results from the action of a shiga-like toxin. MacConkey Sorbitol Agar however should not be solely used to detect pathogenic *E. coli* O157: H7 strains as some non-toxic strains will also not ferment sorbitol.

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. 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.

## COMPOSITION

| Ingredients | Gms / Ltr |
|---|---|
| **Casein enzymic hydrolysate** | 17.000 |
| **Meat peptone** | 3.000 |
| **D-Sorbitol** | 10.000 |
| **Bile salts mixture** | 1.500 |
| **Sodium chloride** | 5.000 |
| **Neutral red** | 0.030 |
| **Crystal violet** | 0.001 |
| **Agar** | 13.500 |

## PRINCIPLE

Casein enzymic hydrolysate and meat peptone supply necessary nutrients like nitrogenous and carbonaceous compounds, 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. The addition of cefixime and tellurite, as FD147 significantly reduces the number of sorbitol non-fermenters that are to be screened during theattempted isolation of *E. coli* O157:H7. Sodium chloride maintains osmotic equilibrium. Neutral red is an indicator. D-Sorbitol is the fermentable carbohydrate.

## INSTRUCTION FOR USE

- Dissolve 50.03 grams in 990 ml distilled water.
- Heat to boiling to dissolve the medium completely.
- Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes.
- Cool to 45-50°C and aseptically add rehydrated contents of 2 vials of Tellurite- Cefixime Supplement.
- Mix well and pour into sterile Petri plates.

## QUALITY CONTROL SPECIFICATIONS

**Appearance of Powder** : Light yellow to pink homogeneous free flowing powder.
**Appearance of prepared medium** : Purplish red coloured clear to slightly opalescent gel forms in Petri plates.
**pH (at 25°C)** : 7.1±0.2

## INTERPRETATION

Cultural characteristics observed with added Tellurite-Cefixime Supplement, after an incubation.

| Microorganism | ATCC | Inoculum (CFU/ml) | Growth | Recovery | Colour of Colony | Incubation Temperature | Incubation Period |
|---|---|---|---|---|---|---|---|
| *Escherichia coli* | 25922 | >=$10^3$ | Inhibited | 0% | Colourless | 35-37°C | 18-24 Hours |
| *Pseudomonas aeruginosa* | 27853 | 50-100 | None-poor | 0-10% | - | 35-37°C | 18-24 Hours |
| *Staphylococcus aureus* | 25923 | >=$10^3$ | Inhibited | 0% | Colourless | 35-37°C | 18-24 Hours |

## PACKAGING:

In pack size of 100 gm and 500 gm bottles.

## STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.
**Product Deterioration:** Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

## DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

## REFERENCES

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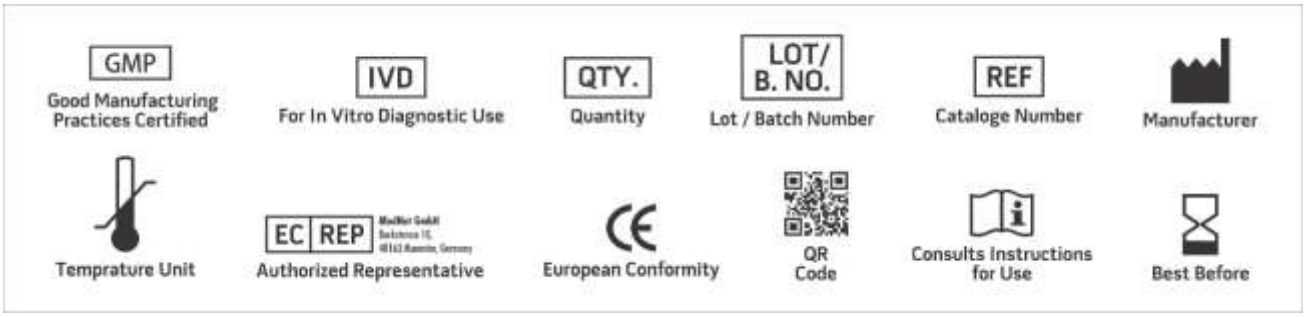


**NOTE:** Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For Lab Use Only**

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