

## MacConkey Agar (i23101)

For the detection and isolation of gram-negative organisms from clinical, dairy, food, water, pharmaceutical, cosmetic, and other industrial sources.

Industry: Pharmaceutical / Water / Cosmetics / Veterinary / Food / Clinical / Final product Quality Control

## Principles & Uses

MacConkey Agar, serves as a selective and differential medium for cultivating enteric microorganisms from various clinical specimens. It contains crystal violet and bile salts that effectively inhibit the growth of Gram-positive bacteria while allowing Gram-negative bacteria to thrive. The key components include peptones for nitrogen, vitamins, and amino acids supply, and lactose as a fermentable carbohydrate. The pH indicator neutral red is employed to detect lactose fermentation; when lactose is fermented, the pH drops, resulting in a color change to pink.

MacConkey Agar is primarily used for the selective isolation and identification of *Enterobacteriaceae* from various sources, including feces, urine, wastewater, and food. In diagnostic and testing procedures, it plays a vital role in differentiating between carbohydrate-fermenting strains and is especially recommended for the detection of *E. coli*. The medium is also endorsed by various standards such as the European Pharmacopoeia and ISO recommendations for detecting *E. coli*, *Shigella* spp., and its application in cosmetic products.

## Composition (gr/L)

Peptone from Casein 17, Peptone from Meat 3, Lactose 10, Bile Salts Mixture 1.5, Sodium Chloride 5, Neutral Red 0.03, Crystal Violet 0.001, Agar 13.5.

Final pH at 25°C 7.1 ± 0.2

## Preparation from dehydrated Powder

Suspend 50 g of the powder in 1 Liter of distilled water. Mix Thoroughly. Autoclave at 121°C for 15 minutes.

## Quality Control

Dehydrated Appearance: Beige, free-flowing, homogeneous.

Prepared Appearance: Red with purplish tinge colored, clear to slightly opalescent.

Reaction of 5.0% Solution at 25°C: pH 7.1 ± 0.2

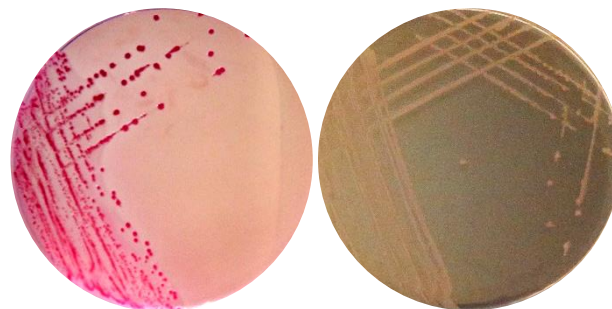
## Cultural Response

Inoculate and incubate at 35 ± 2°C for 18-24 hours (incubate *E. coli* ATCC 25922 for 40-48 hours).

For *E. coli* ATCC 8739, inoculate in duplicate and incubate one plate at 30-35°C for 18-24 hours and the other plate at 35-37°C for 18-72 hours.

Organism (ATCC*)	Recovery	Colony color	Bile PPT.
<i>Escherichia coli</i> (25922)	Good	Pink to red	+
<i>Escherichia coli</i> (8739)	Growth (30-35 °C)	Pink to red	+
<i>Escherichia coli</i> (8739)	Growth (35-37 °C)	Pink to red	+
<i>Enterococcus faecalis</i> (29212)	inhibition	-	-
<i>Salmonella Typhimurium</i> (14028)	Good	Colorless	-
<i>Proteus mirabilis</i> (12453)	Good	Colorless	-

\*ATCC is a registered trade mark of the American Type Culture Collection.



*E. coli* exhibits pink colonies with bile precipitation (left), while *Salmonella* displays colorless colonies (right). Please note that the background for *Salmonella* has been darkened to enhance colony visibility

## Storage

Keep the container at 15-30 °C. Store prepared medium at 2-8 °C.