

MacConkey Agar with Sorbitol, SMAC Agar (i23103)

A Selective Agar for the direct isolation and differentiation of enterohemorrhagic (EHEC) *E. coli* O157:H7-strains from foodstuffs and stool.

Industry: Food / Clinical

Principles & Uses

MacConkey Sorbitol Agar is designed for detecting *E. coli* O157:H7, a strain causing hemorrhagic colitis. This medium substitutes lactose with sorbitol to differentiate enteropathogenic *E. coli* serotypes, known to be sorbitol-negative. Peptone supplies essential nutrients, sorbitol acts as the carbohydrate energy source, and bile salts with Crystal violet inhibit Gram-positive organisms. Sodium chloride maintains osmotic balance, and neutral red serves as the pH indicator. *E. coli* O157:H7, being unable to ferment sorbitol, produces colorless colonies, while other *E. coli* strains ferment sorbitol, resulting in pink colonies. Incorrect antibiotic treatment of O157:H7 infections may escalate the risk of hemolytic uremic syndrome.

Composition (gr/L)

Peptone 20 g, Sorbitol 10 g, Bile Salts Mixture 1.5 g, Sodium Chloride 5 g, Neutral Red 0.03 g, Crystal Violet 0.001 g, Agar 15 g.

Final pH at 25°C 7.1 ± 0.2

Preparation from dehydrated Powder

Suspend 51.5 g of the powder in 1 L of distilled water. Mix Thoroughly. Autoclave at 121°C for 15 minutes.

Quality Control

Dehydrated Appearance: Pinkish beige, free-flowing, homogeneous.

Prepared Appearance: Reddish purple, slightly opalescent.

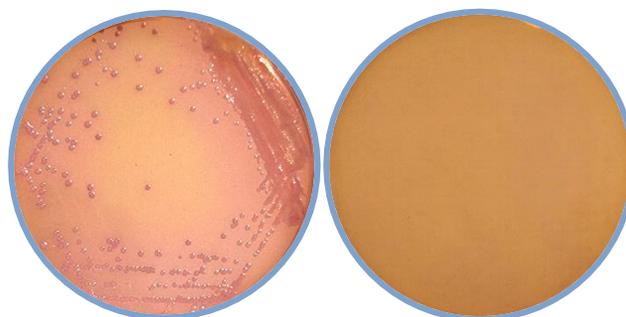
Reaction of 5.15% Solution at 25°C: pH 7.1 ± 0.2

Cultural Response

Inoculate and incubate at 35 ± 2°C for 18 - 24 hours.

Organism (ATCC*)	Recovery	Colony color	Bile PPT.
<i>Escherichia coli</i> (25922)	Good	Pink to red	+
<i>Enterococcus faecalis</i> (29212)	Marked to complete inhibition	-	-
<i>Escherichia coli</i> O157:H7 (35150)	Good	Colorless	-

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



Escherichia coli (left). Prepared Culture Medium (right).

Storage

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