MacConkey Agar with Sorbitol, SMAC | AS-1284

Used for selective isolation and differentiation of enterohemorrhagic (EHEC) *E. coli 0157:H7*-strains from foodstuffs and stool.

A major pathogen linked to hemorrhagic colitis and hemolytic uremic syndrome, E*scherichia coli O157:H7*, is mainly isolated and differentiated using MacConkey Sorbitol Agar (MSA), a selective and differential culture medium.

The medium is selective because it contains crystal violet and bile salts, which inhibit Gram-positive organisms from growing. Essential nutrients for bacterial growth are provided by peptone, while osmotic equilibrium is preserved by sodium chloride. The main carbon source in MacConkey sorbitol agar is sorbitol, which takes the place of lactose. Neutral red, a pH indicator, is responsible for the distinct characteristics of MSA. Usually sorbitol-negative, *E. Coli O157:H7* forms colorless colonies on MSA. On the other hand, most other strains of *E. coli* ferment sorbitol, producing acid and changing its color to pink as a result.

It is important to remember that although MSA is a useful tool for identifying *E. Coli O157:H7* presumedly, more biochemical and serological testing is necessary for a conclusive diagnosis.

Composition (gr/L)	
Peptone	20
Sorbitol	10
Bile Salts Mixture	1.5
Sodium Chloride	5
Neutral Red	0.03
Crystal Violet	0.001
Agar	15
Final pH at 25°C	7.1 ± 0.2

Preparation

Dissolve 51.5 g of the powder into 1 litter distilled water. 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

Microbial Test Results

incubate at 35 ± 2 °C for 18 to 24 hours.

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

Storage

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