

M17 Agar (i23098)

Media proposed by TERZAGHI and SANDINE (1975) for the cultivation and enumeration of lactic *streptococci* in milk and dairy products and for the differentiation of bacteriophages infecting lactic *streptococci*.

Industry: Dairy Products

Principles & Uses

M17 Agar, developed based on the formulation by Terzaghi and Sandine, serves as a nutrient-rich medium for cultivating and enumerating lactic *Streptococci*, particularly *Streptococcus thermophilus* from yogurt. It's also recommended by the International Dairy Federation for selective enumeration. The medium's components play crucial roles in supporting the growth of fastidious lactic *streptococci*. Sodium β -glycerophosphate is vital for maintaining pH, preventing injury, and promoting recovery. The addition of Sodium β -glycerophosphate enhances buffering capacity, fostering the growth of lactic *streptococci* and promoting the development of large bacteriophage plaques. Various peptones, yeast extract, and lactose provide essential nutrients, vitamins, and a fermentable carbohydrate. Ascorbic acid stimulates *streptococcal* growth, while magnesium sulfate supplies essential ions. Agar solidifies the medium. M17 Agar is not only suitable for the detection of lactose-positive *streptococci* colonies but also helps in isolating *Streptococcus thermophilus* from yogurt. It is recommended for cultivating and maintaining starter cultures for cheese and yogurt production.

Composition (gr/L)

Peptone from Casein 2.5 g, Peptone from Soymeal 5 g, Peptone from Meat 2.5 g, Yeast Extract 2.5 g, Meat Extract 5 g, Lactose 5 g, Ascorbic Acid 0.5 g, Sodium β -glycerophosphate 19 g, Magnesium Sulfate 0.25 g, Agar 12.75 g.

Final pH at 25°C 7.2 \pm 0.2

Preparation from dehydrated Powder

Suspend 55 g of the powder in 1 L of purified water. Autoclave at 121°C for 15 minutes.

Quality Control

Dehydrated Appearance: Beige to medium tan, free flowing, homogeneous.

Prepared Appearance: Light to medium amber, very slightly to slightly opalescent, no significant precipitate.

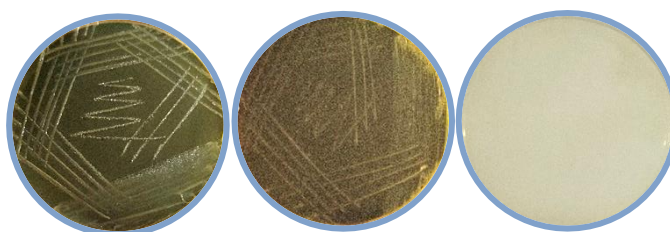
Reaction of 5.5% Solution at 25°C: pH 7.2 \pm 0.2

Cultural Response

Inoculate and incubate for 40 - 48 hours; *Lactococcus lactis* subsp. *Cremoris* at 30 \pm 2°C and the remaining organisms at 35 \pm 2°C.

Organism (ATCC*)	Recovery
<i>Lactobacillus delbrueckii</i> subsp. <i>Bulgaricus</i> (11842)	None to poor
<i>Lactococcus lactis</i> subsp. <i>Cremoris</i> (19257)	Good
<i>Lactococcus lactis</i> subsp. <i>Cremoris</i> (9625)	Good
<i>Streptococcus thermophilus</i> (19258)	Good

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



Lactobacillus lactis (left). *Lactobacillus acidophilus* (middle). Prepared Culture Media (right).

The background of cultured plates has been darkened for better visibility of colonies.

Storage

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