

## 63973 M-17 Broth without lactose NutriSelect® Basic

With the addition of lactose this medium is recommended to use for the cultivation of *Streptococcus thermophilus*.

### Composition:

Ingredients	Grams/Litre
Tryptone	2.5
Meat peptone(peptic)	2.5
Soya peptone(papainic)	5.0
Yeast extract	2.5
Meat extract	5.0
Sodium glycerophosphate	19.0
Magnesium sulphate	0.25
Ascorbic acid	0.5

Final pH 7.0 +/- 0.2 at 25°C

Store granulated media between 10-30°C in tightly closed container and the prepared medium at 15-25°C. Avoid freezing and overheating. Once opened keep powdered medium closed to avoid hydration. Use before expiry date on the label.

Appearance(color): Faint yellow to Faint brown, free flowing powder

Color and Clarity: Light yellow coloured clear to slightly opalescent solution in tubes

### Directions:

Suspend 37 g of powder in 1 litre of distilled water and let it soak. Heat to boiling and dispense into suitable containers. Sterilize by autoclaving at 121°C for 15 minutes.

### Principle and Interpretation:

M17 broth is based on the formulation described by Terzaghi and Sandine (1) for the isolation and enumeration of *Streptococcus* and their bacteriophages. Lactic streptococci are acid-producing bacteria. They are nutritionally fastidious and require complex media for optimal growth (2, 5). Tryptone, soya peptone, yeast extract, meat peptone provides carbonaceous, nitrogenous compounds, vitamin B complex and other essential growth factors. Lactose is the fermentable carbohydrate. Ascorbic acid stimulates growth of lactic streptococci. Magnesium sulphate provides essential ions to the organisms. Sodium  $\beta$ -glycerophosphate maintains the pH above 5.7 due to its buffering action. Shankar and Davies found that disodium- $\beta$ -glycerophosphate in M17 Broth suppressed *Lactobacillus bulgaricus* and selectively isolated *Streptococcus thermophilus* from yogurt (3). M17 broth is recommended by the International Dairy Federation (4) for selective enumeration of *Streptococcus thermophilus* from yoghurt. It is also suitable for cultivation and maintenance of starter cultures for cheese and yoghurt manufacturing.



Cultural characteristics observed after an incubation at 35-37°C for 24-48 hours.

Organisms (ATCC/WDCM)	Inoculum (CFU)	Growth
<i>Enterococcus faecalis</i> (29212/00087)	50-100	+++
<i>Lactobacillus bulgaricus</i> (11842/00102)	50-100	-
<i>Lactobacillus leichmannii</i> (4797/-)	50-100	+++
<i>Lactobacillus plantarum</i> (8014/-)	50-100	+++
<i>Streptococcus thermophilus</i> (14485/-)	50-100	+++

References:

1. Terzaghi B.E. and Sandine W.E., 1975, Appl. Microbiol., 29:807.
2. Anderson A.W. and Elliker P.R., 1953, J. Dairy Sci., 36:161.
3. Shankar P.A. and Davies F.L., 1977, Soc. Dairy Technol., 30:28.
4. International Dairy Federation, 1981, Joint IDF/ISO/AOAC Group E44.
5. Reiter B. and Oran J.D., 1962, J. Dairy Res., 29:63

**Precautions and Disclaimer**

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

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