

## TM 183 - M17 AGAR W/O LACTOSE

### INTENDED USE

For isolation and cultivation of lactic Streptococci from dairy products like yoghurt, cheese, etc.

### PRODUCT SUMMARY AND EXPLANATION

M17 agar is based on the formulation described by Terzaghi and Sandine for the cultivation and enumeration of lactic Streptococci and their bacteriophages.

This medium is a standard medium for isolating lactic streptococi. M17 Agar is recommended by the International Dairy Federation and ISO Committee for selective enumeration of *Streptococcus thermophilus* from yoghurt. It is also suitable for cultivation and maintenance of starter cultures for cheese and yoghurt manufacturing.

### COMPOSITION

Ingredients	Gms / Ltr
Tryptone	5.000
Soya peptone	5.000
Meat extract	5.000
Yeast extract	2.500
Ascorbic acid	0.500
Magnesium sulphate	0.250
Disodium - $\beta$ - glycerophosphate	19.000
Agar	11.000

### PRINCIPLE

Lactic Streptococci are nutritionally fastidious and require complex media for optimal growth. Tryptone, soya peptone, yeast extract, Meat extract provide carbonaceous, nitrogenous compounds, vitamin B complex and other essential growth factors. Lactose is the fermentable carbohydrate. Ascorbic acid is stimulatory for the growth of lactic Streptococci. Magnesium sulphate provides essential ions to the organisms. Disodium -  $\beta$  - glycerophosphate maintains the pH about 5.7 due to its buffering action. Shankar and Davies reported isolation and enumeration of *Streptococcus thermophilus* from yoghurt. Disodium glycerophosphate suppresses *Lactobacillus bulgaricus*.

### INSTRUCTION FOR USE

- Dissolve 48.25 grams in 950 ml purified/distilled water.
- Heat to boiling to dissolve the medium completely.
- Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes.
- Cool to 45-50°C and aseptically add 50 ml of 10% w/v lactose solution sterilized separately by autoclaving at 15 psi pressure (121°C) for 15 minutes or by filtration through a 0.2 $\mu$ m membrane filter.
- Mix well and dispense as desired.

### QUALITY CONTROL SPECIFICATIONS

<b>Appearance of Powder</b>	: Cream to yellow homogeneous free flowing powder
<b>Appearance of prepared medium</b>	: Light yellow coloured clear to slightly opalescent gel forms in Petri plates
<b>pH (at 25°C)</b>	: 6.9 $\pm$ 0.2

### INTERPRETATION



Cultural characteristics observed after an incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Incubation Temperature	Incubation Period
<i>Enterococcus faecalis</i>	29212	50-100	good-luxuriant	≥50 %	35-37°C	24-48 Hours
<i>Lactobacillus bulgaricus</i>	11842	50-100	none-poor	0-10%	35-37°C	24-48 Hours
<i>Lactobacillus leichmannii</i>	4797	50-100	good-luxuriant	≥50 %	35-37°C	24-48 Hours
<i>Lactobacillus plantarum</i>	8014	50-100	good-luxuriant	≥50 %	35-37°C	24-48 Hours
<i>Streptococcus thermophilus</i>	14485	50-100	good-luxuriant	≥50 %	35-37°C	24-48 Hours

#### PACKAGING:

In pack size of 500 gm bottles.

#### STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.

**Product Deterioration:** Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

#### DISPOSAL










After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

#### REFERENCES

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3. International Dairy Federation, 1981, Joint IDF/ISO/AOAC Group E44.
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5. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
6. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock, D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.
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9. Shankar P.A. and Davies F.L., 1977, Soc. Dairy Technol., 30:28.
10. Terzaghi B.E. and Sandine W.E., 1975, Appl. Microbiol., 29:807.
11. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.

 <b>GMP</b> Good Manufacturing Practices Certified	 <b>Best Before</b>	 <b>QTY.</b> Quantity	 <b>REF</b> Catalogue Number	 <b>Manufacturer</b>
 <b>Temperature Unit</b>	 <b>LOT/ B. NO.</b> Lot / Batch Number	 <b>Consults Instructions for Use</b>	 <b>QR Code</b>	

**NOTE:** Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

**\*For Lab Use Only**  
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