

Technical Information

M17 Broth

Product Code: DM 2029

Application: - M17 Media are used for cultivation of lactic Streptococci and plaque assay of lactic bacteriophages.

Composition**

| Ingredients | Gms / Litre |
|---------------------------------------|-----------------|
| Peptic digest of animal tissue | 2.500 |
| Casein enzymic hydrolysate | 2.500 |
| Papaic digest of soyabean meal | 5.000 |
| Yeast extract | 2.500 |
| Beef extract | 5.000 |
| Lactose | 5.000 |
| Ascorbic acid | 0.500 |
| Disodium - β - glycerophosphate | 19.000 |
| Magnesium sulphate | 0.250 |
| Final pH (at 25°C) | 7. 1 \pm 0. 1 |

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

M17 Broth is a modification of M16 Medium ⁽²⁾ and is based on the formulation described by Terzaghi and Sandine ⁽¹⁾ for the cultivation and enumeration of lactic Streptococci and their bacteriophages.

Shankar and Davies ⁽⁵⁾ reported isolation and enumeration of *Streptococcus thermophilus* from yoghurt. Lactic Streptococci are nutritionally fastidious and require complex media for optimal growth ^(3, 4). Disodium glycerophosphate maintains the pH above 5.7. The maintenance of pH during growth is very important as the lower pH results in injury and reduced recovery of lactic Streptococci. Even glycerophosphate does not form precipitate with calcium which is required for the plaque assay of lactic bacteriophages and suppresses *Lactobacillus balgaricus*.

Peptic digest of animal tissue, casein enzymic hydrolysate, papaic digest of soyabean meal, yeast extract, beef extract, provide carbonaceous, nitrogenous compounds, vitamin B complex and other essential growth factors. Lactose is the fermentable carbohydrate and ascorbic acid is stimulatory for the growth of lactic Streptococci. Magnesium sulphate provides essential ions to the organisms.

Methodology

Suspend 42.25 grams of powder media in 1000 ml distilled water. Shake well & heat if necessary to dissolve the medium completely.

Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and dispense as desired.

Quality Control

Physical Appearance

Cream to yellow homogeneous free flowing powder

Colour and Clarity of prepared medium

Light yellow coloured clear to slightly opalescent solution in tubes

Reaction

Reaction of 4.23% w/v aqueous solution at 25°C. pH : 7.1 \pm 0.1

pH Range 7.00-7.20

Cultural Response/Characteristics

DM 2029: Cultural characteristics observed after an incubation at 35-37°C for 24-48 hours.



Dehydrated Culture Media
Bases / Media Supplements

| Organism | Inoculum (CFU) | Growth |
|--|----------------|----------------|
| <i>Enterococcus faecalis</i> ATCC 29212 | 50-100 | good-luxuriant |
| <i>Lactobacillus bulgaricus</i> ATCC 11842 | 50-100 | None-poor |
| <i>Lactobacillus leichmannii</i> ATCC 4797 | 50-100 | good-luxuriant |
| <i>Lactobacillus plantarum</i> ATCC 8014 | 50-100 | good-luxuriant |
| <i>Streptococcus thermophilus</i> ATCC 14485 | 50-100 | good-luxuriant |

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.

Prepared Media: 2-8⁰ in sealable plastic bags for 2-5 days.

Further Reading

1. Terzaghi B.E. and Sandine W.E., 1975, Appl. Microbiol., 29:807.
2. Lawrie and Pearee, 1971, J. Dairy Sci. Technol., 6:166.
3. Anderson A.W. and Elliker P.R., 1953, J. Dairy Sci., 36:161.
4. Reiter B. and Oran J.D., 1962, J. Dairy Res., 29:63.
5. Shankar P.A. and Davies F.L., 1977, Soc. Dairy Technol., 30:28.

Disclaimer :

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