



## MRS Broth w/ Low pH

M1926

### Intended Use:

Recommended for cultivation of all *Lactobacillus* species from all types of material.

### Composition\*\*

| Ingredients                      | Gms / Litre |
|----------------------------------|-------------|
| HM peptone #                     | 10.000      |
| HM peptone B ##                  | 10.000      |
| Yeast extract                    | 5.000       |
| Diammonium citrate               | 2.000       |
| Dipotassium hydrogen phosphate   | 2.000       |
| Dextrose (Glucose)               | 20.000      |
| Magnesium sulphate, heptahydrate | 0.200       |
| Manganese sulphate, tetrahydrate | 0.050       |
| Sodium acetate, trihydrate       | 5.000       |
| Final pH ( at 25°C)              | 5.4±0.2     |

\*\*Formula adjusted, standardized to suit performance parameters

# - Equivalent to Meat peptone

## - Equivalent to Beef extract

### Directions

Suspend 52.15 grams (the equivalent weight of dehydrated medium per litre) in 1000 ml purified / distilled water. Heat if necessary to boiling to dissolve the medium completely. Distribute in tubes, bottles or flasks as desired. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

### Principle And Interpretation

The media formulation is based on the formulation of deMan, Rogosa and Sharpe (2) with slight modification. It supports luxuriant growth of all Lactobacilli from dairy products (6), foods (7) and other sources (5).

HM peptone and HM peptone B supply nitrogenous and carbonaceous compounds. Yeast extract provides vitamin B complex and dextrose is the fermentable carbohydrate and energy source. Sodium acetate and ammonium citrate inhibit Streptococci, moulds and many other microorganisms. Glucose serves as carbohydrate source. Phosphates buffers the medium. Magnesium sulphate and manganese sulphate provide ions used in metabolism.

### Type of specimen

Food and dairy samples.

### Specimen Collection and Handling:

For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (1,7,8). After use, contaminated materials must be sterilized by autoclaving before discarding.

### Warning and Precautions :

Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/ face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling specimens. Safety guidelines may be referred in individual safety data sheets.

### Limitations :

1. Further biochemical and serological test must be carried out for complete identification.

### Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

## Quality Control

### Appearance

Cream to yellow homogeneous free flowing powder

### Colour and Clarity of prepared medium

Medium amber coloured, clear to slightly opalescent solution in tubes

### Reaction

Reaction of 5.22% w/v aqueous solution at 25°C. pH : 5.4±0.2

### pH

5.20-5.60

### Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours or longer. (with 5% CO<sub>2</sub>)

| Organism                                   | Inoculum (CFU) | Growth    |
|--|----------------|-----------|
| <i>Lactobacillus fermentum</i> ATCC 9338   | 50-100         | luxuriant |
| <i>Lactobacillus leichmannii</i> ATCC 7830 | 50-100         | luxuriant |
| <i>Lactobacillus plantarum</i> ATCC 8014   | 50-100         | luxuriant |
| <i>Lactobacillus casei</i> ATCC 9595       | 50-100         | luxuriant |

## Storage and Shelf Life

Store dehydrated and prepared medium at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Product performance is best if used within stated expiry period.

## Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (3,4).

## Reference

1. American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed., Washington D.C.
2. deMan J., Rogosa M. and Sharpe M., 1960, J. Appl. Bacteriol., 23:130.
3. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
4. 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.
5. MacFaddin J., 1985, Media for Isolation-Cultivation-Identification -Maintenance of Medical Bacteria, Vol.1, Williams and Wilkins, Baltimore.
6. Marshall R.T. (Ed.), 1992, Standard Methods for the Examination of Dairy Products, 16th ed., APHA, Washington, D.C.
7. Salfinger Y., and Tortorello M.L. Fifth (Ed.), 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.
8. Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed., APHA Inc., Washington, D.C.

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