

## Lactobacilli MRS Broth (NCM0079)

### Intended Use

Lactobacilli MRS Broth is used for the cultivation of lactobacilli and is not intended for use in the diagnosis of disease or other conditions in humans.

### Description

Lactobacilli MRS broth was originally developed in 1960 by de Man, Rogosa & Sharpe, the medium can be used for confirmatory tests on organisms isolated on MRS Agar. The medium can also be used for enumeration by the Miles and Misra technique.

Nutrition is provided by a mixture of carefully selected peptones, glucose, beef and yeast extracts while Tween® 80, magnesium and manganese sulfates act as growth stimulants. Selectivity against streptococci & molds is provided by ammonium citrate and sodium acetate.

Occasionally, sterilization of this medium at 121°C for 15 minutes, in some autoclaves, may cause the pH to fall outside of the specified pH limits 6.4 +/- 0.2. In these rare cases, adjustment of the medium using acetic acid or sodium hydroxide is recommended.

### Typical Formulation

Peptone	10 g/L
Yeast Extract	5 g/L
Beef Extract	10 g/L
Glucose	20 g/L
Potassium Phosphate	2 g/L
Sodium Acetate	5 g/L
Magnesium Sulfate	0.2 g/L
Manganese Sulfate	0.05 g/L
Tween® 80	1.08 g/L
Ammonium Citrate	2 g/L

Final pH: 6.4 ± 0.2 at 25°C

Formula may be adjusted and/or supplemented as required to meet performance specifications.

### Precaution

Refer to SDS

### Preparation

1. Dissolve 55 grams of powder and add 1 liter of deionized water.
2. Mix thoroughly
3. Autoclave at 121°C for 15 minutes.

### Test Procedure

1. Samples can be inoculated directly into Lactobacilli MRS Broth.
2. Incubate broth tubes at 35°C for 3 days, or at 30°C for 5 days in an aerobic atmosphere.
3. Subculture growth in broth tubes to appropriate solid media.

### Quality Control Specifications

Dehydrated Appearance: Powder is homogeneous, slightly clumped and beige.

Prepared Appearance: Prepared medium is clear with no precipitate and amber.



# Technical Specification Sheet



**Expected Cultural Response:** Cultural response in Lactobacillus MRS Broth at 30 ± 1°C and examined for growth after 18 - 48 hours incubation.

Microorganism	Approx. Inoculum (CFU)	Expected Result
Lactobacillus casei ATCC® 393	10-100	Growth
Lactobacillus delbrueckii ATCC® 4797	10-100	Growth
Lactobacillus fermentum ATCC® 9338	10-100	Growth
Lactobacillus plantarum ATCC® 8014	10-100	Growth
Lactobacillus rhamnosus ATCC® 7469	10-100	Growth

The organisms listed are the minimum that should be used for quality control testing.

## **Results**

Growth of Lactobacillus spp. appear turbid. Growth can be subcultured onto appropriate media for use in additional procedures. Refer to appropriate references for recommendation on the identification of Lactobacillus spp.

## **Expiration**

Refer to expiration date stamped on the container. The dehydrated medium should be discarded if not free flowing, or if appearance has changed from the original color. Expiry applies to medium in its intact container when stored as directed.

## **Limitations of the Procedure**

1. Due to varying nutritional requirements, some strains may be encountered that grow poorly or fail to grow on this medium.
2. Organisms other than lactobacilli may grow in this medium. Isolates must be confirmed as lactobacilli by appropriate biochemical testing.

## **Storage**

Store dehydrated culture media at 10 – 25°C away from direct sunlight. Once opened and recapped, place the container in a low humidity environment at the same storage temperature. Protect from moisture and light by keeping container tightly closed.

## **References**

1. de Man, J.C., Rogosa, M and Sharpe, M.E. (1960). A medium for the cultivation of lactobacilli. J. Appl. Bacteriol. 23, 130-135.
2. MacFaddin, J. F. 1985. Media for the isolation-cultivation-identification-maintenance of medical bacteria, vol. 1 Williams & Wilkins, Baltimore, MD.
3. Vanderzant, C. and D. F. Splittstoesser (eds.). Compendium of methods for the microbiological examination of foods, 4<sup>th</sup> ed. American Public Health Association, Washington, D.C.

