

MRS Broth (i23117)

Media introduced by DE MAN, ROGOSA and SHARPE (1960) for the enrichment, cultivation and isolation of *Lactobacillus* species from all types of materials.

Industry: Dairy products / Food / Alcoholic beverages

Principles & Uses

The *Lactobacilli* MRS media, developed based on the formulation of deMan, Rogosa, and Sharpe with slight modifications, support robust growth of *Lactobacilli* from diverse sources, including the oral cavity, dairy products, foods, feces, and more. Key components in this medium have specific roles: peptone and beef extract provide essential nitrogen and carbon compounds, while yeast extract offers the vital B vitamin complex. Glucose serves as both the fermentable carbohydrate and energy source, and Tween 80 contributes necessary fatty acids for *Lactobacilli* metabolism. Sodium acetate and ammonium citrate effectively inhibit *Streptococci*, *molds*, and various other microorganisms, enhancing selectivity.

To promote the growth of certain *Lactobacillus* strains, it's essential to lower the pH of the media because they are inhibited at pH levels higher than 6.0. This can be achieved by adding a few drops of acetic acid to the media

Composition (gr/L)

Peptone from Casein 10, Meat Extract 8, Yeast Extract 4, D-Glucose 20, Dipotassium Hydrogen Phosphate 2, Tween® 80 1, di-Ammonium Hydrogen Citrate 2, Sodium Acetate 5, Magnesium Sulphate 0.2, Manganese Sulphate 0.04.

Final pH at 25°C 5.7 ± 0.2

Preparation from dehydrated Powder

Suspend 52.2 grams in 1 Liter of distilled water. Autoclave at 121°C for 15 minutes. Autoclavation at 118°C for 15 minutes results in better growth of *Bifidobacterium* spp.

Quality Control

Dehydrated Appearance: Tan, homogeneous, appears moist.

Prepared Appearance: Medium amber, clear to very slightly opalescent.

Reaction of 5.2% Solution at 25°C: pH 5.7 ± 0.2

Cultural Response

Inoculate *Lactobacilli* MRS Broth and incubate at 35 ± 2°C for 3 days up to 5 days.

Organism (ATCC*)	Recovery
<i>Lactobacillus acidophilus</i> (4356)	Good/ Very Good
<i>Lactobacillus plantarum</i> (8014)	Good/ Very Good
<i>Lactobacillus Casei</i> (39392)	Good/ Very Good
<i>Lactobacillus fermentum</i> (9338)	Good/ Very Good
<i>Escherichia coli</i> (25922)	Poor
<i>Pseudomonas aeruginosa</i> (27853)	None

*ATCC is a registered trade mark of the American Type Culture Collection.



Lactobacillus casei causes turbidity in the medium.

Storage

Keep dehydrated and prepared medium at 2-8°C.