

PRODUCT CODE: 413785

MRS Broth (Dehydrated Culture Media) for microbiology

Preparation

Suspend 52.25 grams of the medium in one litre of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Dispense into appropriate containers and sterilize in autoclave at 121°C for 12 minutes. The prepared medium should be stored at 2-8°C.

The colour is clear amber. The dehydrated medium should be homogeneous, free-flowing and beige in colour. If there are any physical changes, discard the medium.

Uses

MRS BROTH has the same formulation as MRS Agar without the agar as a solidifying agent. It is used when a fluid medium is preferred. It was developed by de Man, Rogosa and Sharpe to provide a medium that would support the good growth of *lactobacilli*, but in particular for those strains which showed poor growth in existing media such as *L. brevis* and *L. fermenti*, replacing a variable product (tomato juice).

The medium is apt for the growth of lactic acid bacteria, including *Lactobacillus*, *Pediococcus* and *Leuconostoc*. Ammonium citrate at a low pH inhibits most microorganisms but allows the growth of *lactobacilli*. Dipotassium phosphate and Sodium acetate are buffer agents to maintain a low pH. Tween 80 is an emulsifier; Manganese and Magnesium sulfates are sources of ions and sulfate. Bacteriological peptone and Beef extract provide nitrogen, vitamins, minerals and amino acids essential for growth. Yeast extract is source of vitamins, particularly the B-group. Dextrose is the fermentable.

The times and temperatures of incubation are the same as in MRS Agar (35 ± 2°C for 3 days or better, 30°C for 5 days). Tubes showing growth are subcultured to MRS Agar to confirm the presence of *Lactobacilli*. MRS Broth may be used for other tests in the identification of *lactobacilli* such as temperature dependence, growth in 4% NaCl, growth in 0.4% Teepol, etc. as recommended by Sharpe, Fryer and Smith.

The growth of some *Lactobacillus* strains is inhibited at a higher pH of 6.0 and it is necessary to acidify the media to promote the growth. To acidify the media some drops of acetic acid can be added.

Composition

See in Data Sheet (TDS).

Microbiological Test

The following results were obtained in the performance of the medium from type cultures after incubation at a temperature of 35°C for 3 days or at 30°C during 5 days in a CO₂ enriched atmosphere.

Microorganism	Growth
<i>Lactobacillus acidophilus</i> ATCC 4356	Good
<i>Lactobacillus casei</i> ATCC 393	Good
<i>Lactobacillus fermentum</i> ATCC 9338	Moderate-Good
<i>Escherichia coli</i> ATCC 25922	Moderate-Good
<i>Pseudomonas aeruginosa</i> ATCC 27853	Inhibited

Storage

Once opened keep powdered medium closed to avoid hydration.

