

LACTOBACILLI MRS BROTH (7406)

Intended Use

Lactobacilli MRS Broth is used for the cultivation of lactobacilli.

Product Summary and Explanation

Lactobacilli MRS Broth is based on the formulations of deMan, Rogosa and Sharpe (MRS).¹ This medium supports luxuriant growth of lactobacilli from oral, fecal, dairy, and other sources.

Principles of the Procedure

Enzymatic Digest of Animal Tissue, Beef Extract, and Yeast Extract are the carbon, nitrogen, and vitamin sources used to satisfy general growth requirements in Lactobacilli MRS Broth. Dextrose is the fermentable carbohydrate. Sodium Acetate is an inhibitory agent. Sodium Acetate and Ammonium Citrate act as selective agents as well as energy sources. Potassium Phosphate is the buffering agent. Magnesium Sulfate and Manganese Sulfate provide cations used in metabolism. Polysorbate 80 is a surfactant, facilitating uptake of nutrients by lactobacilli.

Formula / Liter

| | |
|--|--------|
| Enzymatic Digest of Animal Tissue..... | 10 g |
| Beef Extract | 10 g |
| Yeast Extract..... | 5 g |
| Dextrose..... | 20 g |
| Sodium Acetate..... | 5 g |
| Polysorbate 80 | 1 g |
| Potassium Phosphate | 2 g |
| Ammonium Citrate | 2 g |
| Magnesium Sulfate | 0.1 g |
| Manganese Sulfate | 0.05 g |

Final pH: 6.5 ± 0.2 at 25°C

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

Precaution

1. For Laboratory Use.

Directions

1. Dissolve 55 g of the medium in one liter of purified water.
2. Heat with frequent agitation to boiling to completely dissolve the medium.
3. Autoclave at 121°C for 15 minutes.

Quality Control Specifications

Dehydrated Appearance: Powder is homogeneous with soft lumps and yellow-tan.

Prepared Appearance: Prepared medium is clear.

Expected Cultural Response: Cultural response in Lactobacillus MRS Broth at 35°C after 18 - 48 hours incubation.

| Microorganism | Response |
|---|----------|
| <i>Lactobacillus casei</i> ATCC® 393 | growth |
| <i>Lactobacillus fermentum</i> ATCC® 9338 | growth |
| <i>Lactobacillus plantarum</i> ATCC® 8014 | growth |

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

Test Procedure

1. Samples can be inoculated directly into Lactobacillus 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.

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.²⁻⁴

Storage

Store sealed bottle containing the dehydrated medium at 2 - 8°C. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light by keeping container tightly closed.

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.

Packaging

| | | | |
|-------------------------------|-----------------|--------------|--------------|
| Lactobacilli MRS Broth | Code No. | 7406A | 500 g |
| | | 7406B | 2 kg |
| | | 7406C | 10 kg |

References

1. **deMan, J. C., M. Rogosa, and M. E. Sharpe.** 1960. A medium for the cultivation of lactobacilli. *J. Bacteriol.* **23**:130.
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*, 3rd ed. American Public Health Association, Washington, D.C.
4. **Murray, P. R., E. J. Baron, M. A. Pfaller, F. C. Tenover, and R. H. Tenover (eds.)**. 1995. *Manual of clinical microbiology*, 6th ed. American Society for Microbiology, Washington, D.C.

Technical Information

Contact Acumedia Manufacturers, Inc. for Technical Service or questions involving dehydrated culture media preparation or performance at (410)780-5120 or fax us at (410)780-5470.