

## Product Insert

### LACTOBACILLUS MRS AGAR (LMRS AGAR)

#### Products

AS-6429 Lactobacillus MRS Agar (LMRS AGAR) 4 plates / pkg

#### Intended Use

Lactobacillus MRS Agar (LMRS) is an enriched selective medium for the isolation and cultivation of *Lactobacillus* found in clinical, dairy, and food specimens.

#### Summary

Lactobacillus MRS (deMan, Rogosa, and Sharpe) agar is an enriched selective medium for the cultivation of *Lactobacillus* from clinical, dairy, and food specimens. LMRS agar consists of proteose peptone no. 3, beef extract, yeast extract, and dextrose as the nutritive base. The medium is supplemented with polysorbate 80 (Tween 80) and magnesium as a source of fatty acids and additional growth requirements. Sodium acetate and ammonium citrate may inhibit normal flora, such as gram-negative bacteria, oral flora, and fungi. Improved recovery of *Lactobacilli* occurs in the presence of these selective agents. The pH is adjusted to 6.3 to 6.7 to favor the growth of *Lactobacillus* spp. This medium is prepared, dispensed, and packaged under oxygen-free conditions to prevent the formation of oxidized products prior to use.

#### Formulation\*

Proteose Peptone No. 3	10.00	g
Beef Extract	10.00	g
Yeast Extract	5.00	g
Dextrose	20.00	g
Polysorbate 80	1.00	g
Ammonium Citrate	2.00	g
Sodium Acetate	5.00	g
Magnesium Sulfate	0.10	g
Manganese Sulfate	0.05	G
Dipotassium Phosphate	2.00	g
Agar	15.00	g
DI Water	1.00	L

Final pH: 6.5 ± 0.2 at 25° C

Final weight: 16.0 g ± 1.6 g

\*Approximate formula. Adjusted and/or supplemented as required to meet performance criteria.

#### Precautions

For *IN VITRO DIAGNOSTIC USE* only. Utilize approved biohazard precautions and aseptic technique when using this product. This product is for use only by properly-trained and qualified personnel. Sterilize all biohazard waste prior to disposal.

#### Storage and Shelf Life

**Storage:** Upon receipt, store at room temperature in original package until used. Avoid overheating or freezing. Do not use media if there are signs of deterioration (shrinking, cracking, or discoloration due to oxidation of media) or contamination. The expiration date applies to the product in its original packaging and stored as directed. Do not use product past the expiration date shown on the label.

**Shelf Life:** 90 days from date of manufacture.

## Procedure

**Specimen Collection:** Protect specimens for anaerobic culture from oxygen during collection, transportation, and processing. Consult appropriate references for detailed instructions concerning collection and transportation of anaerobes.

**Methods for Use:** LMRS agar should be inoculated directly with clinical specimen or from a broth that has been inoculated with a clinical specimen. Streak plates with inoculum to obtain isolated colonies and immediately place into an anaerobic atmosphere, incubating at 35-37°C for 18-48 hours. Extended periods of incubation may be required to recover some anaerobes. Extended incubation time may also result in loss of selectivity of the media which can result in the overgrowth of organisms that should be inhibited. Detailed instructions for processing anaerobic cultures can be found in the listed references.

## Materials Required, But Not Provided

Standard microbiological supplies and equipment such as loops, saline blanks, slides, staining supplies, microscope, incinerator / autoclave, incubators, anaerobic chamber / anaerobic jars, disinfectant, other culture media, and serological / biochemical reagents.

## Interpretation of Results

If used properly, LMRS agar will support the good growth of *Lactobacillus* from clinical and non-clinical specimens.

## Limitations

LMRS will not provide complete information for identification of bacterial isolates. Additional test procedures and media are required for complete identification. It is recommended that a non-selective media, such as Brucella Blood Agar (BRU, catalog #: AS-111) also be inoculated from the same clinical specimen to assure recovery of all species present. Consult reference materials for additional information.

## Quality Control

The following organisms are routinely used for quality control testing at Anaerobe Systems.

Organism Tested	ATCC #	Results	Time
<i>Lactobacillus vaginalis</i>	49540	Growth	24 – 48 hrs
<i>Lactobacillus acidophilus</i>	4356	Growth	24 – 48 hrs
<i>Lactobacillus crispatus</i>	33197	Growth	24 – 48 hrs
<i>Lactobacillus jensenii</i>	25258	Growth	24 – 48 hrs
<i>Lactobacillus fermentum</i>	9338	Growth	24 – 48 hrs

**User Quality Control:** The final determination to the extent and quantity of user laboratory quality control must be determined by the end user.

If sterility testing is to be performed on this product, a representative sample of the lot(s) should be incubated anaerobically and aerobically for 48 – 96 hours.

If the nutritive/inhibitory capacity of this media is to be tested for performance, it is recommended that the following ATCC organisms be evaluated for growth/inhibition.

Organism	ATCC #	Expected Growth
<i>L. acidophilus</i>	4356	24 – 48 hrs
<i>L. crispatus</i>	33197	24 – 48 hrs
<i>L. fermentum</i>	9338	24 – 48 hrs
<i>L. jensenii</i>	25258	24 – 48 hrs

**Physical Appearance:** LMRS agar should appear translucent light-yellow in color.

## References

1. Dowell, V. R., Jr., G. L. Lombard, F. S. Thompson and A. Y. Armfield. 1977. *Media for the Isolation, Characterization and Identification of Obligately Anaerobic Bacteria*. USDHHS, CDC. Atlanta, GA 30333.
2. Engelkirk, P. G., Duben-Engelkirk, J. and Dowell, V. R. 1992. *Principles and Practices of Clinical Anaerobic Bacteriology*. Star Publishing Co., Belmont, CA 94002.
3. Holdeman, L. V., F. P. Cato and W. E. C. Moore. 1987. *Anaerobe Laboratory Manual*. Virginia Polytechnic Institute and State University. Blacksburg, VA 24061
4. Jousimeis-Somer, H. R., Summanen, P., Citron, D. M., Baron, E. J., Wexler, H. M. and S. M. Finegold. 2002. *Wadsworth – KYL Anaerobic Bacteriology Manual*. Star Publishing Co., Belmont, CA 94002.
5. CLSI. *Quality Control for Commercially Prepared Microbiological Culture Media; Approved Standard- Third Edition*. (2004). CLSI document M22-A3. CLSI, 940 West Valley Road, Suite 1400, Wayne, PA 19087-1898.
6. De Man, J. C., Rogosa, M. and Sharpe, M. E. 1960. *A medium for the cultivation of lactobacilli*. J. Appl. Bacteriol. 23(1), 130.

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