

CM 20910 – LACTOBACILLUS MRS AGAR (ISO 1995, DRAFT ISO/DIS 13720:2010)

INTENDED USE

For the isolation and enumeration of lactic acid bacteria from meat and meat products.

PRODUCT SUMMARY AND EXPLANATION

Lactobacilli MRS medium is based on the formulation of deMan, Rogosa and Sharp with slight modification. It supports luxuriant growth of all Lactobacilli from oral cavity, dairy products, foods, faeces and other sources. Lactobacillus MRS Agar is recommended by ISO Committee.

COMPOSITION

Ingredients	Gms / Ltr
Beef extract	8.000
Peptone	10.000
Yeast extract	5.000
Ammonium citrate	2.000
Sodium acetate	5.000
Magnesium sulphate, heptahydrate	0.200
Manganese sulphate, tetrahydrate	0.050
Dipotassium phosphate	2.000
Glucose, anhydrous	20.000
Polysorbate 80 (Tween 80)	1.000
Agar	12.000

PRINCIPLE

The medium consists of Peptone and Beef extract which supplies nitrogenous and carbonaceous compounds, long chain amino acids and other essential growth nutrients. Yeast extract provides vitamin B complex and glucose is the fermentable carbohydrate and energy source. Polysorbate 80 supplies fatty acids required for the metabolism of Lactobacilli. Sodium acetate and ammonium citrate inhibit Streptococci, moulds and many other microorganisms. Phosphates provide good buffering action in the media. Lactobacilli are micro aerophilic and generally require layer plates for aerobic cultivation on solid media. When the medium is set, another layer of un-inoculated MRS Agar is poured over the surface to produce a layer plate (5). Lactobacilli isolated on MRS Agar should be further confirmed biochemically.

INSTRUCTION FOR USE

- Dissolve 65.13 grams in 1000 ml purified / distilled water.
- Heat to boiling to dissolve the medium completely.
- Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes. Cool to 45-50°C.
- Mix well and pour into sterile Petri plates.

QUALITY CONTROL SPECIFICATIONS



Appearance of Powder : Cream to light yellow homogeneous free flowing powder.
 Appearance of prepared medium : Medium to dark amber coloured clear to slightly opalescent gel forms in Petri plates.
 pH (at 25°C) : 5.7 ± 0.2

INTERPRETATION

Cultural characteristics observed after incubation with 5% CO₂.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Incubation temperature	Incubation Period
Lactobacillus acidophilus	4356	50-100	Luxuriant	≥70%	35-37°C	18-24 Hours or Longer
Lactobacillus casei	9595	10-100	Luxuriant	≥70%	35-37°C	18-24 Hours or Longer
Lactobacillus fermentum	9338	50-100	Luxuriant	≥70%	35-37°C	18-24 Hours or Longer
Lactobacillus plantarum	8014	50-100	Luxuriant	≥70%	35-37°C	18-24 Hours or Longer
Lactococcus lactis subsp. lactis	19435	50-100	Luxuriant	≥70%	35-37°C	18-24 Hours or Longer
Lactococcus sakei	15521	50-100	Luxuriant	≥70%	35-37°C	18-24 Hours or Longer
Pediococcus damnosus	29358	50-100	Luxuriant	≥70%	35-37°C	18-24 Hours or Longer
Pediococcus pentosaceus	33316	50-100	Luxuriant	≥70%	35-37°C	18-24 Hours or Longer
Bifidobacterium bifidum	11863	50-100	Luxuriant	≥70%	35-37°C	18-24 Hours or Longer



Escherichia coli	25922	$\geq 10^3$	Inhibited	0%	35-37°C	18-24 Hours or Longer
Bacillus cereus	11778	$\geq 10^3$	Inhibited	0%	35-37°C	18-24 Hours or Longer

PACKAGING:

In pack size of 500 gm bottles.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 2-8°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.

Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

1. deMan J., Rogosa M. and Sharpe M., 1960, J. Appl. Bacteriol., 23:130.
2. Marshall R.T. (Ed.), 1992, Standard Methods for the Examination of Dairy Products, 16th ed., APHA, Washington, D.C.
3. Salfinger Y., and Tortorello M.L. Fifth (Ed.), 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.
4. Sabine and Vaselekos, 1965, Nature, 206:960.
5. MacFaddin J., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol.1, Williams and Wilkins, Baltimore.
6. International Organization for Standardization (ISO), 1995, Draft ISO/DIS, 13721.



NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

*For Lab Use Only

