

## TM 2217 – MRS SELECTIVE AGAR BASE (ISO 20128:2006)

### INTENDED USE

Recommended for the selective cultivation of Lactic acid bacteria from food.

### PRODUCT SUMMARY AND EXPLANATION

MRS Selective Agar Base has been developed as per specification laid down in ISO 20128 for enumeration of presumptive Lactobacillus acidophilus from milk products. Lactobacilli MRS medium is based on the formulation of deMan, Rogosa and Sharpe with slight modification. It supports luxuriant growth of all Lactobacilli from oral cavity, dairy products, foods, and other sources.

### COMPOSITION

Ingredients	Gms / Ltr
Tryptone	10.000
Beef extract	10.000
Yeast extract	5.000
Glucose (Dextrose)	20.000
Tween 80 (Polysorbate 80)	1.000
Dipotassium hydrogen phosphate	2.000
Triammonium citrate	2.000
Sodium acetate trihydrate	5.000
Magnesium sulphate heptahydrate	0.200
Manganese sulphate tetrahydrate	0.050
Agar	12.000

### PRINCIPLE

The medium consists of Proteose peptone and Beef extract which supply nitrogenous and carbonaceous compounds. Yeast extract provides vitamin B complex and dextrose 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. Magnesium sulphate and manganese sulphate provide essential ions for multiplication of lactobacilli. Phosphates provide good buffering action in the media. Lactobacilli are microaerophilic 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. Lactobacilli isolated on MRS Agar should be further confirmed biochemically. Clindamycin and ciprofloxacin helps in the elimination of contaminating flora.

### INSTRUCTION FOR USE

- Dissolve 65.15 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. Aseptically add rehydrated contents of one vial of Ciprofloxacin Clindamycin Selective Supplement.



- 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)** : 6.5 ± 0.2

**INTERPRETATION**

Cultural characteristics observed after incubation. (with 5% CO<sub>2</sub>)

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Incubation temperature	Incubation Period
<i>Lactobacillus acidophilus</i>	4356	50-100	Luxuriant	>=70%	35-37°C	18-24 Hours
<i>Lactobacillus fermentum</i>	9338	50-100	Luxuriant	>=70%	35-37°C	18-24 Hours
<i>Lactobacillus leichmannii</i>	7830	50-100	Luxuriant	>=70%	35-37°C	18-24 Hours
<i>Lactobacillus plantarum</i>	8014	50-100	Luxuriant	>=70%	35-37°C	18-24 Hours
<i>Escherichia coli</i>	25922	>=10 <sup>3</sup>	Inhibited	0%	35-37°C	18-24 Hours
<i>Bacillus cereus</i>	11778	>=10 <sup>3</sup>	Inhibited	0%	35-37°C	18-24 Hours

**PACKAGING:**

In pack size of 100 gm and 500 gm bottles.

**STORAGE**

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°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.

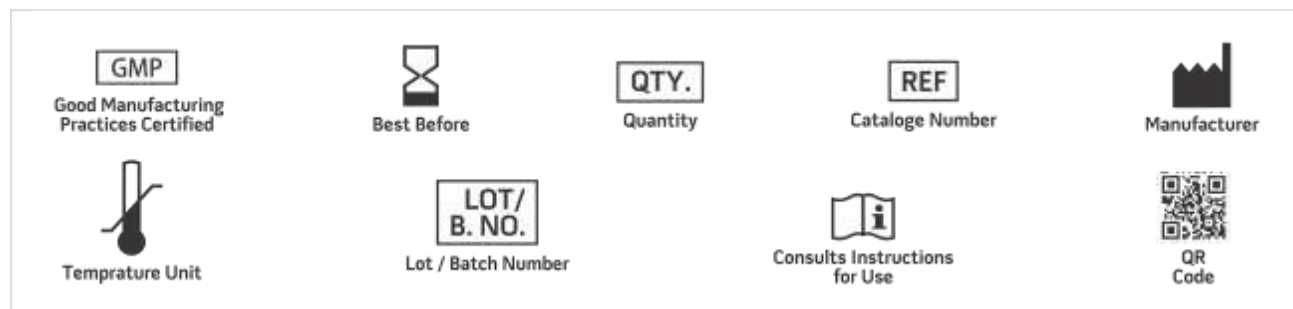
**Product Deterioration:** Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

### DISPOSAL

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

### REFERENCES

1. American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed., Washington D.C.
2. deMan J., Rogosa M. and Sharpe M., 1960, J. Appl. Bacteriol., 23:130.
3. Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
4. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.
5. MacFaddin J., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol.1, Williams and Wilkins, Baltimore.
6. Marshall R.T. (Ed.), 1992, Standard Methods for the Examination of Dairy Products, 16th ed., APHA, Washington, D.C.
7. Milk products -- Enumeration of presumptive Lactobacillus acidophilus on a selective medium -- Colony-count technique at 37 degrees C . ISO 20128:2006 (IDF 192:2006).



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

**\*For Lab Use Only**  
**Revision: 10 June, 2023**