LACTOBACILLUS MRS AGAR (MRS AGAR) TM 146

For isolation and cultivation of *Lactobacillus* species

Composition

Ingredients	Gms/Ltr.
Dextrose	20.00
Agar	12.00
Proteose peptone	10.00
Beef extract	10.00
Yeast extract	5.00
Sodium acetate	5.00
Ammonium citrate	2.00
Disodium phosphate	2.00
Tween 80	1.00
Magnesium sulphate	0.10
Manganese sulphate	0.05

* Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers below 25°C and protect from direct Sunlight.

Instructions for Use

Dissolve 67.15gms in 1000ml of distilled water. Gently heat to boiling with gentle swirling and dissolve the medium completely. Sterilize by autoclaving at 15 psi (121°C) for 15 minutes. Cool the medium at 45 – 50^{0}C prior to dispense into sterile Petri plates.

Appearance: Medium to dark amber colour, clear to slightly opalescent gel
pH (at 25°C): 6.5 ± 0.2

Principle

LACTOBACILLUS MRS AGAR (MRS AGAR) is used for isolation and cultivation of *Lactobacilli* species. Medium contains Proteose peptone, Beef extract, and Yeast extract are the carbon, nitrogen and vitamin sources used to satisfy general growth requirements in Lactobacilli MRS agar. Dextrose is the fermentable carbohydrate and energy source. Tween 80 is a surfactant, which supplies fatty acids required for facilitating metabolism uptake of nutrients by *Lactobacilli*. Sodium acetate and Ammonium citrate acts as a selective inhibitory agent for e.g., *Streptococci*, moulds and many other microorganisms. Magnesium sulphate and Manganese sulphate provide cations used in metabolism. Disodium phosphate provides good buffering action in the media. *Lactobacilli* appear as large, white colonies embedded in or on Lactobacilli MRS Agar. Growth may be subcultured onto the appropriate media for use in additional procedures. Lactobacilli are microaerophillic and generally require layer plates for aerobic cultivation on solid media. Organisms other than lactobacilli may grow in these media. Isolates of Lactobacilli confirmation must be done by biochemical testing.

Interpretation

Culture characteristics observed after inoculating (10^3CFU / ml), for incubation period of 3 days at 35°C and for 5 days at 30^0C, in an aerobic atmosphere supplemented with CO_2.

Microorganism	ATCC	* Inoculum (CFU)	Observation (CFU)	Standard recovery (%)	Recovery on test media (%)
Lactobacillus casei	9595	85	Good	>=50%	>=50%
Lactobacillus fermentum	9338	83	Good	>=50%	>=50%
Lactobacillus leichmannii	7830	82	Good	>=50%	>=50%
Lactobacillus plantarum	8014	80	Good	>=50%	>=50%
Escherichia coli	25922	80	Inhibited	0%	0%

References

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