ARENA BioScien

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MRS (deMan, Rogosa, Sharpe) Agar

For the enrichment, cultivation and isolation of all species of *Lactobacillus* from all types of material according to DeMan, Rogosa and Sharpe.

REF: BS.1/MR01.100.0100	100 Gram	REF: BS.1/MR01.250.0250	250 Gram
REF: BS.1/MR01.500.0500	500 Grams		

CLINICAL SIGNIFICANCE

Lactobacilli MRS Agar and Lactobacilli MRS Broth are based on the formulations of deMan, Rogosa and Sharpe.1. These media were shown by the authors to support luxuriant growth of all lactobacilli from oral, fecal, dairy and other sources.

METHOD PRINCIPLE

The MRS media formulation was developed by de Man, Rogosa and Sharpe to replace the tomato juice medium and the meat extract tomato juice medium. It is a medium supporting good growth of *lactobacilli* in general, even those strains which have shown poor growth in existing media, like strains of *L. brevis* and *L. fermenti*. The MRS culture media contain polysorbate (Tween 80), acetate, magnesium and manganese which are known to act as special growth factors for *lactobaciili* as well as a rich nutrient base. As these media show a very low degree of selectivity, *Pediococcus* and *Leuconostoc* species as well as other secondary bacteria may grow on them. Most of the accompanying microflora can be inhibited by thallium acetate, sorbic acid, acetic acid, sodium nitrite, cycloheximide and polymyxin. These substances can be used at varying concentrations and combinations, but inevitably a compromise has to be reached between selectivity and productivity of the organism sought.

MEDIA COMPOSITION

Item	Formula per liter of medium
Universal peptone	10
Meat extract	5
Yeast extract	5
D(+)-Glucose	20
Dipotassium hydrogen phosphate	2
Diammonium hydrogen citrate	2
Sodium acetate	5
Magnesium sulfate	0.1
Manganous sulfate	0.05
Agar	12

PRECAUTIONS AND WARNINGS

Media to be handled by entitled and professionally educated person. Do not ingest or inhale.

Good Laboratories practices using appropriate precautions should be followed in:

- Wearing personnel protective equipment (overall, gloves, glasses,).
- Do not pipette by mouth.
- In case of contact with eyes or skin; rinse immediately with plenty of soap and water. In case of severe injuries; seek medical advice immediately.
- Respect country requirement for waste disposal.
  S56: dispose of this material and its container at hazardous or special waste collection point.
  S57: use appropriate container to avoid environmental contamination.
  S61: avoid release in environment.

For further information, refer to the MRS Agar material safetydata sheet.

STORAGE AND STABILITY

BioScien Store between 10-30°C in tightly closed container and the prepared medium at 2 - 8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle in order to avoid lump development due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in a dry ventilated area protected from extremes of temperature and sources of ignition. Seal the container tightly after use. Product performance is best if used within stated expiry period.

Final pH 6.5 +/- 0.2 at 25°C

PREPARATION

Dissolve 61.15 g in distilled water, add 1 ml Tween 80 and bring volume to 1000 ml. Boil to dissolve the medium completely. Autoclave at 121°C for 15 minutes. Incubate the culture up to 3 days at 35°C or up to 5 days at 30°C. If possible, incubate the plates in a CO2-enriched atmosphere in an anaerobic jar. Do not allow the surface of the plates to dry as this will cause acetate concentration increasing at the surface, which inhibits the growth of lactobacilli.

Deterioration

The color of ***BioScien*** MRS Agar is Cream to light yellow homogeneous free flowing powder. Prepared Media is Medium to dark amber coloured, clear to slightly opalescent gel forms in Petri plates. If there are any physical changes for powder or signs of deterioration (shrinking, cracking, or discoloration), and contaminations for hydrated media, discard the medium.

SPECIMEN

Clinical samples - urine, faeces, etc.; Food and dairy samples

EQUIPMENT REQUIRED NOT PROVIDED

- Sterile petri dishes
- Incubator
- Autoclave
- Tween 80

PERFORMANCE CHARACTERISTICS

Cultural characteristics observed after incubation at 35-37°C for 18-72H.

Microorganism	Result
Lactobacillus acidophilus (4356)	Luxuriant growth
Lactobacillus fermentum (9338)	Luxuriant growth

Bifidobacterium bifidum (11863)	Fair-good growth
Escherichia coli (25922)	Luxuriant growth
Pseudomonas aeruginosa (27853)	none to poor

QUALITY CONTROL

To ensure adequate quality control, it is recommended that positive and negative control included in each run. If control still out of range please contact ***BioScien*** technical support.

REFERENCES

1. J. C. de Man, M. Rogosa and M. Elisabeth Sharpe, Appl. Bact. 23. 130-135 (1960) 2. M. Briggs, J. Dairy Res. 20. 36-40 (1953) 3. G. Reuter, Intern. J. Food Microbiol. 2. 55-68 (1985) 4. ISO/TC 34/SC 6/WG 15, No.3 and 5, Enumeration of Lactobacteriaceae in meat and meat products (1984) 5. Lankaputhra W.E.V., Shah N.P. and Britz M.L. Food Australia 48. 113-118 (1996) 6. W. Hummel, et al., Biocatalysis 2, 293 (1989) 7. L.C. Laleye, et al., Involvement of heterofermentative lactobacilli in development of open texture in cheese, J. Food Prot. 50, 1009 (1987) 8. P. Laloi, et al., Cell-wall-associated proteinase of L. delbrueckii subsp. bulgaricus CNRZ 397, Appl. Microbiol. Biotechnol. 36, 196 (1991)

SYMBOLS IN PRODUCT LABELLING			
IVD	For in-vitro diagnostic use	Σ	Number of <n> test in the pack
LOT	Batch Code/Lot number		Caution
REF	Catalogue Number		Do not use if package is damaged
	Temperature Limitation		Consult Instruction for use
	Expiration Date		
	Manufactured by		