MRS Broth
(Lactosebacillus Broth acc. to DE MAN, ROGOSA and SHARPE)

Media introduced by DE MAN, ROGOSA and SHARPE (1960) for the enrichment, cultivation and isolation of Lactobacillus species from all types of materials.

The medium complies with the German DIN-Norm 10109 and for the inspection of meat and to the regulations acc. to § 35 LMBG (06.00/35) for the inspection of food.

Mode of Action

The MRS culture media contain polysorbate, acetate, magnesium and manganese, which are known to act as special growth factors for lactobacilli, as well as a rich nutrient base. As these media exhibit a very low degree of selectivity, Pediococcus and Leuconostoc species and other secondary bacteria may grow on them.

Typical Composition (g/litre)

Peptone from casein 10.0; meat extract 8.0; yeast extract 4.0; D(+)-glucose 20.0; dipotassium hydrogen phosphate 2.0; Tween® 80 1.0; di-ammonium hydrogen citrate 2.0; sodium acetate 5.0; magnesium sulfate 0.2; manganese sulfate 0.04.

Preparation

Suspend 52.2 g MRS Broth/litre, autoclave 15min at 121°C (or 15 min at 118 °C). Autoclavation at 118 °C result in better growth of Bifido bacterium spp.

pH: 5.7 ± 0.2 at 25 °C.

The broth filled into tubes are clear and brown.

Experimental Procedure and Evaluation

If necessary, homogenize the sample material and then transfer to MRS Broth for enrichment or for determining the bacterial count by the MPN method.

Incubation: up to 3 days at 35 °C or up to 5 days at 30 °C.

Determine the bacterial count. Identify the lactobacilli by the methods proposed by SHARPE (1962) and SHARPE et al. (1966). For further methods of differentiation and identification see ROGOSA et al. (1953), ROGOSA and SHARPE (1959) and DAVIS (1960).

Literature

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SHARPE, M.E.: Taxonomy of the Lactobacilli. – **Dairy Sci. Abstr., 24**; 109 (1962).

SHARPE, M.E., FRYER, T.F., a. SMITH, D.C.: Identification of the Lactic Acid Bacteria. – in GIBBS, B.M., a. SKINNER, P.A.: Identification Methods for Microbiologists, Part A; 65-79 (1966).

Ordering Information

Product	Merck Cat. No.	Pack size
MRS Broth (Lactobacillus Broth acc. to DE MAN, ROGOSA and SHARPE)	1.10661.0500	500 g
Anaerobic jar	1.16387.0001	1 ea
Anaeroclip®	1.14226.0001	1 x 25
Anaerocult® C	1.16275.0001	1 x 10
Anaerocult® C mini	1.13682.0001	1 x 25
Plate basket	1.07040.0001	1 ea

Quality control of MRS Broth

Test strains	Growth
Lactobacillus acidophilus ATCC 4356	good / very good
Lactobacillus plantarum ATCC 8014	good / very good
Lactobacillus casei ATCC 393	good / very good
Lactobacillus fermentum ATCC 9338	good / very good
Escherichia coli ATCC 25922	fair / good
Pseudomonas aeruginosa ATCC 27853	none