TECHNICAL DATA SHEET

Article No. 9379

MRS Agar (ISO), ready-to-use culture medium

SPECIFICATION

Ready-to-use culture medium, sterile, bottles. Solid medium for the culture of lactic acid bacteria according to deMan, Rogosa and Sharpe, modified according to ISO standards and IFU methods.

Colour:	Yellowish-brown
pH:	pH: 5.7 ± 0.2 at 25ºC

COMPOSITION IN G/ L

Enzymatic digest of casein	10.00
Meat extract	10.00
Yeast extract	4.00
D(+)-Glucose	20.00
Sodium acetate	5.00
Triammonium citrate	2.00
Magnesium sulfate	0.20
Manganese sulfate	0.05
Dipotassium phosphate	2.00
Polysorbate 80	1.08
Agar	14.00

PACKAGE DETAILS

9379-10x200ML

Volume	200 ± 5 ml
Bottle size	250 ml
Packaging unit	10 bottles

1 box with 10 x 200 ml in 250-ml-bottles. Injectable cap: Plastic screw inner cap. The use of syringes needles with a diameter greater than 0.8 mm is not recommended.

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DESCRIPTION/TECHNIQUE

Description:
The MRS medium is an improved modification that replaces the media previously used for the cultivation of lactobacilli, all based on the nutritional properties of tomato juice. The addition of magnesium, manganese acetate, and polysorbate enhance the growth of lactobacilli, even the most fastidious species such as *Lactobacillus brevis* and *Lactobacillus fermenti*.
The high quality of peptones and supplements meat extracts and yeast, provide growth factors necessary to make the MRS one of the most complete for the cultivation of lactobacilli media. But selectivity is scarce and often the plates tend to show contaminants, which require a greater selection. For this, alternate subcultures on double layer solid medium and broth are recommended. In many cases growth is favored by an atmosphere enriched in CO_2. MRS medium is especially suited for enumeration and maintenance of lactobacilli in plate by mass inoculation and covering with a second layer of molten medium, which usually avoids the need for the CO_2 enriched atmosphere, especially in the first isolation.

Technique:
Collect , dilute and prepare samples and volumes as required according to specifications, directives, official standard regulations and/or expected results.
Melt the medium contained in the bottles in a water bath or in a microwave oven, avoiding overheating, before pouring into Petri dishes when cooled to room temperature.
Once solidified on a flat surface, spread the plate by streaking methodology or by spiral method.
Incubate in a 5 % CO_2 atmosphere at 30 ± 1 ºC for 72 h ± 3 h.
After incubation, enumerate all the colonies that have appeared onto the surface of the agar.
Each laboratory must evaluate the results according to their specifications.

MICROBIOLOGICAL CONTROL

Melting - pour plates - inoculation Practical range 100 ± 20 CFU. min. 50 CFU (productivity) / 103 -104 CFU (qualitative selectivity).
Microbiological control according to ISO 11133:2014/A1:2018.
Microaerofilic incubation at 30 ±1 ºC for 72 ±3 h

Microorganism	Growth
Staphylococcus aureus ATCC® 6538, WDCM 00032	Inhibited
Lactobacillus sakei ATCC® 15521, WDCM 00015	Good (≥70 %)
Lactococcus lactis ATCC® 19435, WDCM 00016	Good (≥70 %)
Pediococcus pentosaceus ATCC® 33316, WDCM 00158	Good (≥70 %)
Bacillus cereus ATCC® 11778, WDCM 00001	Inhibited

Sterility control:
Incubation 48 hours at 30-35 ºC and 48 hours at 20-25 ºC: NO GROWTH.
Check at 7 days after incubation in same conditions.

REFERENCES

- DOWNES, F.P. & K. ITO (2001) Compendium of Methods for the Microbiological Examination of Foods.4th Ed. APHA. Washington DC. USA
- FIL-IDF Standard 146 (2003) Yoghurt. Identification of characteristic micro-organisms.
- FIL-IDF Standard192 (2006) Enumeration of presumptive Lactobacillus acidophilus on a selective medium. - Colony-count technique at 37ºC.
- IFU Method No 5 (1996) Lactic Acid Bacteria Count Procedure. Schweizerischer Obstverband. CH-6302 Zug
- IFU Method No 9 (1998) Microbiological examination of potential spoilage micro-organisms of tomato products. Schweizerischer Obstverband. CH-6302 Zug
- ISO Standard 11133 (2014) Microbiology of food, animal feed and water. Preparation, production, storage and performance testing of culture media.
- ISO Standard 15214 (1998) Horizontal method for the enumeration of mesophilic lactic acid bacteria – Colony count technique at 30ºC
- ISO Standard 20128 (2006) Milk products. Enumeration of presumptive Lactobacillus acidophilus on a selective medium. - Colony-count technique at 37ºC.
- ISO Standard 9232 (2003) Yoghurt – Identification of characteristic microorganisms (*Lactobacillus delbrueckii* subsp *bulgaricus* and *Streptococcus thermophilus*)
- MAN, J.C. de, ROGOSA, M. y SHARPE, M. Elisabeth (1960) A medium for the cultivation of lactobacilli. J. Appl. Bact.; 23:130.

STORAGE

8 - 25 °C

SHELF LIFE

12 months unopened from date of manufacture

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