

MRS/Broth

355-4488

DEFINITION

This medium is used for the identification of characteristic micro-organisms in yoghurt. (*Lactobacillus delbrueckii* subsp. *Bulgaricus* and *Streptococcus salivarius* subsp. *thermophilus*).

STANDARDS

FOOD MICROBIOLOGY

- **FIL 146 (2002):** Yoghurt - Identification of characteristic microorganisms (*Lactobacillus delbrueckii* subsp. *Bulgaricus* and *Streptococcus salivarius* subsp. *thermophilus*).

PRINCIPLE

The nutrient substances provided by bacteriological peptone, meat extract and the glucose used as an energy source favor the growth of micro-organisms typical of yoghurt. Due to the presence of ammonium citrate and sodium acetate, this medium inhibits other bacteria.

PRESENTATION

• Ready-to-use

10 ml x 25 tubes

code 355-4488

STORAGE

- Ready-to-use: + 2°C to 8°C.
- Expiration date and batch number are shown on the package.

THEORETICAL FORMULA

Bacteriological peptone	10 g
Meat extract	10 g
Yeast extract	5 g
Sodium acetate	5 g
Dipotassium phosphate	2 g
Ammonium citrate	2 g
Magnesium sulfate	200 mg
Manganese sulfate	50 mg
Glucose	20 g
Tween 80	1 ml
Distilled water	1,000 ml

Final pH (25°C) = 6.5 ± 0.2

OTHER PRODUCTS REQUIRED (NOT SUPPLIED)

- Distilled water

EQUIPMENT REQUIRED (NOT SUPPLIED) (non-exhaustive)

- Scales
- Sterile weighing bags
- Grinder
- Hotplate
- Mixer-homogenizer
- Test tubes (20 x 200 mm) with autoclave proof stoppers
- Sterile pipettes (code 355-0751) or inoculating loops
- Thermostatically-controlled incubator or incubation room, precise to ± 1°C
- Autoclave
- All usual laboratory equipment.

PROTOCOL

• Preparation of samples

According to the standards applicable to the product concerned.

• Enumeration

According to the standards applicable to the product concerned.

• Inoculation and incubation

Using the colonies selected from the plates used for enumeration, inoculate the MRS broth by means of an inoculating loop or Pasteur pipette (previously flame-sterilized). Incubate at 37°C ± 1°C for 24 hours.

READING AND INTERPRETATION

Tubes showing turbidity can be considered positive. Various tests will be carried out on these tubes according to the standards.

PRECAUTIONS

- The time lapse between the end of preparation of the stock solution (or the 10⁻¹ dilution in the case of a solid product) and the moment when the dilutions come into contact with the culture medium must not exceed 15 minutes.
- Comply with Good Laboratory Practice.

PERFORMANCES / QUALITY CONTROL OF THE TEST

The growth performances of the media are verified with the following strains:

STRAINS	Results of 24-48 hour culture at 30°C
<i>Lactobacillus casei</i> ATCC 9595	Good growth
<i>Lactobacillus fermentum</i> ATCC 9338	Good growth

QUALITY CONTROL OF MANUFACTURER

Every product manufactured and marketed by Bio-Rad is subject to a quality-assurance procedure at all stages, from the reception of raw materials to the marketing of the end-product. Each batch of finished product undergoes quality control and is marketed only if it satisfies the acceptability criteria.

Documentation relative to the production and control of each batch is kept on file.

KEY WORDS

MRS Broth / *Lactobacillus* / *Streptococcus* Yoghurt / Identification / Medium.

BIBLIOGRAPHY

• **DE MAN J.C., ROGOSA M. and SHARPE M.E. (1960):** A medium for the cultivation of *lactobacilli*. Journal of Applied Bacteriology 23 (1): 130.