TECHNICAL DATA SHEET

M 17 BROTH

ENRICHMENT FOR LACTOCOCCI

1 INTENDED USE

Le M17 Broth was developed for the growth and enumeration of lactic streptococci (lactococci) in milk and dairy products. It favors the growth of mutants unable to ferment lactose. It is well adapted to the culture of *Lactococcus lactis* (a particularly fastidious species).

2 HISTORY

Terzhagi and Sandine showed that the incorporation of sodium β-glycerophosphate in M16 medium increased the buffering capacity of the medium. The new medium, named M17, led to an increase in the development of lactic streptococci, which are bacteria producing large quantities of acid via the homofermentative metabolism of lactose.

3 PRINCIPLES

Casein, meat and soybean peptones contain the carbon and nitrogen sources required to cultivate lactococci.

Yeast extract is a source of B vitamins .

Ascorbic acid stimulates growth.

Lactose is fermented to lactic acid, which is buffered by glycerophosphate, in order to stabilize the pH of the media.

4 TYPICAL COMPOSITION

The composition can be adjusted in order to obtain optimal performance.

For 1 liter of media :

- Tryptone ..... 2,50 g
- Peptic digest of meat..... 2,50 g
- Papaic digest of soybean meal ..... 5,00 g
- Yeast extract ..... 2,50 g
- Meat extract..... 5,00 g
- Lactose..... 5,00 g
- Sodium glycerophosphate..... 19,00 g
- Magnesium sulfate ..... 0,25 g
- Ascorbic acid ..... 0,50 g

pH of ready-to-use media at 25 °C : 7,1 ± 0,2.

5 PREPARATION

- Dissolve 42,2 g of dehydrated media (BK012) in 1 liter of distilled or demineralized water.
- Stir slowly until complete dissolution.
- Dispense into appropriately sized tubes or vials, 20 mL per container.
- Sterilize in an autoclave at 115 °C for 20 minutes.
- Cool to room temperature.

✓ **Reconstitution : 42,2 g/L**

✓ **Sterilization : 20 min at 115 °C**

6 INSTRUCTIONS FOR USE

- Inoculate each tube or vial with 1 mL of inoculum or of its serial dilutions.
- Incubate at
  - 37 ± 1 °C for 48 hours for the culture of S*treptococcus thermophilus.*
  - 30 ± 1 °C for 72 hours for the culture of mesophilic lactococci.

✓ **Inoculation :**
1 mL

✓ **Incubation :**
48 h at 37 °C or
72 h at 30 °C

7 RESULTS

Growth is demonstrated by turbidity in the media.

8 QUALITY CONTROL

Dehydrated media : cream powder, free-flowing and homogeneous.
Prepared media : light brown solution, limpid.

Typical culture response after 48 hours of incubation at 37 °C, inoculum ≤ 10^2 microorganisms :

Microorganisms		Growth
Streptococcus thermophilus	ATCC 14485	Good, score 2
Lactococcus lactis subsp*. lactis*	ATCC 11454	Good, score 2

9 STORAGE / SHELF LIFE

Dehydrated media : 2-20 °C.
The expiration date is indicated on the label.

Prepared media in tubes or vials (*) : 180 days at 2-8 °C.
(*) Benchmark value determined under standard preparation conditions, following manufacturer's instructions.

10 PACKAGING

Dehydrated media :
500 g bottle BK012HA

11 BIBLIOGRAPHY

Terzaghi, B.E., and Sandine, W.E.. 1975. Improved medium for lactic streptococci and their bacteriophages. Applied Microbiology, **29** : 807-813.

ISO 9232 / IDF 146. Février 2003. Yaourt. Identification des micro-organismes caractéristiques (*Lactobacillus delbrueckii* subsp. *bulgaricus* et *Streptococcus thermophilus*).

12 ADDITIONAL INFORMATION

The information provided on the labels take precedence over the formulations or instructions described in this document and are susceptible to modification at any time, without warning.

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