

TECHNICAL DATA SHEET

MSE AGAR (Mayeux, Sandine & Elliker)

DETECTION AND ENUMERATION OF *LEUCONOSTOC*

1 INTENDED USE

This medium, developed by Mayeux, Sandine and Elliker in 1962, is an elective medium for the detection and enumeration of *Leuconostoc* in milk, dairy products and sweet foods.

2 PRINCIPLES

Sodium azide inhibits Gram-negative bacteria and lactic streptococci coexisting with *Leuconostoc* in dairy products. *Leuconostoc mesenteroides* and *Leuconostoc dextranicum* utilize the sucrose in the medium to synthesize polysaccharides (dextrans) which impart a gelatinous appearance to the colonies.

3 TYPICAL COMPOSITION

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

For 1 liter of media :

- Tryptone 10,0 g
- Gelatin 2,5 g
- Yeast extract 5,0 g
- Saccharose 100,0 g
- Glucose 5,0 g
- Sodium citrate 1,0 g
- Sodium azide 75,0 mg
- Bacteriological agar..... 15,0 g

pH of ready-to-use media at 25 °C : 6,9 ± 0,2.

4 PREPARATION

- Dissolve 138,5 g of dehydrated media (BK087) in 1 liter of distilled or demineralized water.
- Slowly bring to boiling, stirring with constant agitation until complete dissolution.
- Dispense in tubes or vials.
- Sterilize in an autoclave at 110 °C for 20 minutes.
- Cool and maintain in a molten state at 44-47 °C.
- Pour into sterile Petri plates and let solidify on a cold, flat surface.
- Dry in an incubator with the covers partially removed.

✓ **Reconstitution :**
138,5 g/L

✓ **Sterilization :**
20 min at 110 °C

5 INSTRUCTIONS FOR USE

- On the surface of media prepared as above, transfer 0,1 mL of the sample to test and its serial dilutions.
- Spread the inoculum on the surface of the agar with a sterile triangle.
- Incubate at 21 °C, then examine regularly for 4 days.

✓ **Inoculum :**
0,1 mL on surface

✓ **Incubation :**
4 days at 21 °C

6 RESULTS

Leuconostoc dextranicum presents colorless colonies, gelatinous, 1 to 5 mm in diameter.

Leuconostoc citrovorum and *Leuconostoc kefir* give rise to small, colorless colonies from 0,5 to 2 mm in diameter.

Leuconostoc cremoris presents translucent colonies with a hint of blue, of 0,5 to 2 mm.

After 4 days of incubation, lactic streptococci may develop on the medium as small, opaque, white or yellowish-white colonies

7 QUALITY CONTROL

Dehydrated media : off-white powder, free-flowing and homogeneous.

Prepared media : cream-white agar.

Typical culture response after 72 hours of incubation at 21° C :

Microorganisms		Growth Productivity Ratio : P_R
<i>Leuconostoc mesenteroides</i> subsp. <i>mesenteroides</i>	ATCC® 14935	$P_R \geq 70 \%$
<i>Leuconostoc mesenteroides</i> subsp. <i>dextranicum</i>	ATCC 19255	$P_R \geq 70 \%$
<i>Escherichia coli</i>	WDCM 00013	Inhibited, score 0
<i>Streptococcus thermophilus</i>	ATCC 14485	Inhibited, score 0

8 STORAGE / SHELF LIFE

Dehydrated media : 2-30 °C.

The expiration date is indicated on the label.

Prepared media in vials (*) : 180 days at 2-8 °C.

Prepared media in plates (*) : 15 days at 2-8 °C.

(*) Benchmark value determined under standard preparation conditions, following manufacturer's instructions.

9 PACKAGING

Dehydrated media :

500 g bottle BK087HA

10 BIBLIOGRAPHY

Mayeux, J.V., Sandine, W.E., and Elliker, P.R. 1962. A selective medium for detecting *Leuconostoc* in mixed-strain starter cultures. J. Dairy Science, 45: 655-656.

Buttiaux, R., Beerens, H., et Tacquet. 1962. Manuel des techniques bactériologiques. 4^{ème} Ed. Flammarion, 455-458.

Devoyod, J.S., et Muller, M. 1969. La flore microbienne du fromage de Roquefort. Les streptocoques lactiques et les *Leuconostoc*. Le lait, 49: 369-399.

11 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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