M17 AGAR

INTENDED USE

M17 Agar is used for the enumeration of lactococci (especially *Lactococcus lactis*) in dairy products. It is also used to study the sensitivity of these species to bacteriophages. It is well adapted to the enumeration of *Streptococcus thermophilus* in natural or flavored yogurts, textured or not, and in yogurts containing morsels of fruit.

HISTORY

Terzhagi and Sandine showed that the incorporation of sodium β-glycerophosphate in M 16 medium increased the buffering capacity of the medium. The new medium, named M 17, led to an increase in the development of lactic streptococci, which are bacteria producing large quantities of acid via the homofermentative metabolism of lactose.

PRINCIPLES

- Casein, meat and soybean peptones contain the carbon and nitrogen sources required to grow lactic streptococci.
- Yeast extract is a source of B vitamins.
- Ascorbic acid stimulates growth.
- Lactose is fermented to lactic acid, which is buffered by glycerophosphate.

PREPARATION

- Suspend 57.2 g of dehydrated medium (BK088) in 1 liter of distilled or deionized water
- Slowly bring to boiling, stirring with constant agitation until complete dissolution.
- Dispense in tubes or flasks.
- Sterilize in an autoclave at 115°C for 20 minutes.

NOTE :

Incomplete dissolution of the agar will invariably lead to a significant alteration in gel strength of the solidified agar, after sterilization and cooling.

INSTRUCTIONS FOR USE

- Cool and maintain the medium at 44-47°C.
- Transfer 1 mL of the product to analyze and its serial tenfold dilutions to sterile Petri dishes.
- Pour in 15 mL of medium.
- Homogenize by swirling.
- Let solidify on a cold surface.
- Incubate :
  - at 37°C for 48 hours for *Streptococcus thermophilus*.
  - at 30°C for 48 to 72 hours for mesophilic lactococci.
RESULTS

*Streptococcus thermophilus* and mesophilic lactococci form colonies 1-2 mm in diameter, depending on colony density in the dish. Microscopic verification shows whether the Gram-positive cocci are in chains or are diplococci.

TYPICAL COMPOSITION
(can be adjusted to obtain optimal performance)

For 1 liter of medium:

- Tryptone .................................................................2.5 g
- Peptic digest of meat .................................................2.5 g
- Papain digest of soybean meal.................................5.0 g
- Yeast extract ............................................................2.5 g
- Meat extract ..............................................................5.0 g
- Lactose .................................................................5.0 g
- Sodium glycerophosphate ......................................19.0 g
- Magnesium sulfate ..................................................0.25 g
- Ascorbic acid ..........................................................0.5 g
- Bacteriological agar .................................................15.0 g

pH of the ready-to-use medium at 25°C: 7.1 ± 0.2.

QUALITY CONTROL

- Dehydrated medium: beige powder, free-flowing and homogeneous.
- Prepared medium: amber agar.
- Typical culture response after 48 hours of incubation at 37°C (XP CEN ISO/TS 11133-2):

<table>
<thead>
<tr>
<th>Microorganisms</th>
<th>Growth (Productivity ratio: ( P_R ))</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Streptococcus thermophilus</em> ATCC® 14485</td>
<td>( P_R \geq 70% )</td>
</tr>
<tr>
<td><em>Lactococcus lactis</em> subsp. <em>Lactis</em> ATCC 11454</td>
<td>( P_R \geq 70% )</td>
</tr>
</tbody>
</table>

STORAGE / SHELF LIFE

**Dehydrated medium**: 2-20°C.
- Be advised not to exceed the maximum storage temperature of 20°C.
- The expiration date is indicated on the label.

**Prepared medium (benchmark value*)**:
- Media in vials: 6 months at 2-8°C.

PACKAGING

<table>
<thead>
<tr>
<th>Dehydrated medium:</th>
<th>Code</th>
</tr>
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<tbody>
<tr>
<td>500 g bottle</td>
<td>BK088HA</td>
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BIBLIOGRAPHY


*Benchmark value refers to the expected shelf life when prepared under standard laboratory conditions following manufacturer's instructions. It is provided as a guide only and no warranty, implied or otherwise is associated with this information.

The information provided on the package take precedence over the formulations or instructions described in this document.

The information and specifications contained in this technical data sheet date from 2009-02-17. They are susceptible to modification at any time, without warning.