

MacConkey Agar N° 2

For the identification of enterococci in the presence of coliforms and non-fermenting organisms in water, foods and clinical samples

Practical information

| Applications | Categories |
|--------------|------------|
| Detection | Coliforms |

Industry: Water / Clinical / Food

Principles and uses

MacConkey Agar N° 2 is a slightly selective and differential medium especially useful for the recognition of enterococci in the presence of coliforms and non-lactose fermenters from water, sewage, food and clinical samples.

Bacteriological peptone provides nitrogen, vitamins, minerals and amino acids essential for growth. Lactose is the fermentable carbohydrate energy source, causing a pH drop and a color change in the pH indicator (Neutral red), and bile precipitation. Bile salts N° 2 and crystal violet are the selective agents, inhibiting Gram-positive, bile-tolerant microorganisms such as staphylococci and non-fecal streptococci. Sodium chloride supplies essential electrolytes for transport and osmotic balance. Bacteriological agar is the solidifying agent.

The presence of intestinal enterococci, is an indicator for faecal contamination, especially when the contamination occurred a long before and the less resistant coliform bacteria, including *Escherichia coli*, may already be dead when the analysis is carried out.

Formula in g/L

| | | | |
|----------------------|------|-------------------------|-------|
| Bacteriological agar | 13,5 | Bacteriological peptone | 20 |
| Bile salts | 1,5 | Crystal violet | 0,001 |
| Lactose | 10 | Neutral red | 0,05 |
| Sodium chloride | 5 | | |

Preparation

Suspend 50 grams of medium in one liter of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Sterilize in autoclave at 121 °C for 15 minutes. Cool to 45-50 °C, mix well and dispense into plates.

Instructions for use

- Inoculate and incubate at 35±2 °C for 18-24 hours.
- Enterococci grow as intensely red, small colonies surrounded by a zone of pale red precipitate.
- Non-lactose fermenting bacteria form colorless colonies.

Quality control

| Solubility | Appearance | Color of the dehydrated medium | Color of the prepared medium | Final pH (25°C) |
|------------|-------------|--------------------------------|------------------------------|-----------------|
| w/o rests | Fine powder | Beige-pink | Red-violet | 7,2±0,2 |

Microbiological test

Incubation conditions: (35±2 °C / 18-24 h).

| Microorganisms | Specification | Characteristic reaction |
|--|---------------|---|
| <i>Salmonella enteritidis</i> ATCC 13076 | Good growth | Colony color: Colorless |
| <i>Escherichia coli</i> ATCC 25922 | Good growth | Colony color: Pink-red (bile precipitate) |

Staphylococcus aureus ATCC 25923
Enterococcus faecalis ATCC 29212

Inhibited growth
Good growth

Colony color: Red

Storage

Temp. Min.:2 °C
Temp. Max.:25 °C

Bibliography

Mac Geachie J. and Kennedy A.C. J. Clin. Path. 16. 32-38, 1963

DOMINIQUE DUTSCHER SAS