

**Product :**
MacCONKEY BROTH (Eur. Pharm.)**Also known as**

Medium G

Specification

Liquid medium, for the detection and enumeration of coliforms, according to the Pharmacopeial Harmonized Method.

Formula * in g/L

Pancreatic digest of gelatin.....	20.00
Lactose monohydrate.....	10.00
Ox bile.....	5.00
Bromocresol purple.....	0.01

Final pH 7.3 ±0.2 at 25 °C

* Adjusted and /or supplemented as required to meet performance criteria

Directions

Dissolve 35 g of powder in 1 L of distilled water. Heat only if necessary. Distribute into suitable containers fitted with Durham tubes (or 100 ml Bottles). Sterilize in the autoclave at 121°C for 15 minutes.

Description

MacConkey media is a well known popular enrichment media for coliform bacteria. This MacConkey Broth is a modification of the classic medium, where neutral red is replaced by a less aggressive indicator (Bromocresol purple), according to the European Pharmacopoeia.

At the beginning of the last century, MacConkey made the original formulation and included ox bile as an inhibitor of Gram positive bacteria and litmus as the indicator of acid production from lactose sugar. More recently the litmus has been substituted by a neutral red indicator making interpretations easier and more precise.

Advancements in the knowledge of bacterial physiology has allowed adaptation of this media facilitating coliform detection.

Technique

The MacConkey Broth is used for the enumeration of coliforms by the MPN technique, selecting the positive tubes that show Turbidity, a colour change to yellow and gas production. Confirmation of the presence of coliform should be at 42-44 °C. The colour change of the medium to yellow in the presence of *E. coli* may be delayed 24 h to 48 h, depending on the volume and concentration of inoculum.

Quality control**Incubation temperature:** 30-35°C / 43°C±1**Incubation time:** 24-48 h**Inoculum:** Practical range 10-100 CFU (productivity)/ 10³-10⁴ CFU (selectivity), according to Ph. Eur. (bottle: 100 ml)

Microorganism	Growth	Remarks
<i>Staphylococcus aureus</i> ATCC® 6538	Inhibited	48h
<i>Escherichia coli</i> ATCC® 25922	Good	Medium (yellow) Gas (+) 43°C±1
<i>Escherichia coli</i> ATCC® 8739	Good	Medium (yellow) Gas (+) 43°C±1
<i>Salmonella typhimurium</i> ATCC® 14028	Good	Medium (violet) Gas (-)
<i>Pseudomonas aeruginosa</i> ATCC® 9027	Good	Medium (violet) Gas (-)

References

- ATLAS, R.M., L.C. PARKS (1993) Handbook of Microbiological Media. CRC Press, Inc. London.
- EUROPEAN PHARMACOPOEIA 10.0 (2020) 10th ed. § 2.6.13. Microbiological examination of non-sterile products: Test for specified microorganisms. Harmonised Method. EDQM. Council of Europe. Strasbourg.
- MacCONKEY, A.T. (1905) Lactose-Fermenting Bacteria in Faeces. J. Hyg 5:333.
- MacCONKEY, A.T. (1905) Lactose-fermenting bacteria in faeces. J. Hyg 5:333.
- USP 33 - NF 28 (2011) <62> Microbiological examination of non-sterile products: Test for specified microorganisms. Harmonised Method. USP Corp. Inc. Rockville. MD. USA.

Storage

For laboratory use only. Keep tightly closed, away from bright light, in a cool dry place (+4 °C to 30 °C).