

Technical Data Sheet

MacConkey Broth

acc. harm. EP/USP/JP

Ordering number: 1.05396.0500

MacConkey broth is a selective culture medium used as a presumptive test for *Escherichia coli* and coliform bacteria and for determining the *Escherichia coli* or coliform titre of milk, water and other materials according to MacConkey and Hill (1901).

This medium complies with the specifications given by the harmonized methods of EP, USP, JP for Microbial Examination of Non-sterile Products: Tests for Specified Microorganisms.

Mode of Action

This broth contains lactose which, when degraded, gives acid and gas, according to the definition indicating the presence of *E. coli*. The gas formed is collected in Durham tubes and acid production is detected by the indicator bromocresol purple, which turns yellow. Ox bile promotes the growth of several species of intestinal bacteria and inhibits that of microorganisms, which do not inhabit the intestine.

Typical Composition

Peptone from Gelatine	20 g/l
Lactose	10 g/l
Ox Bile, dried	5 g/l
Bromocresol Purple	0.01 g/l

Preparation

Suspend 35 g/l or more (see Table under Lactose Broth). Fill into test tubes. If desired insert Durham tubes. Autoclave (15 min at 121 °C).

The appearance of the medium is clear and violet.

The pH value at 25 °C is in the range of 7.1-7.5.

Experimental Procedure and Evaluation

See 1.07661. Lactose Broth.

Incubation: 48 h at 30-35 °C.

	Microorganisms
Gas and acid are produced	suggests <i>Escherichia coli</i> and possibly other coliform bacteria
Only acid is produced	suggests coliform bacteria without <i>Escherichia coli</i>

Storage

The product can be used for sampling until the expiry date if stored upright, protected from light and properly sealed at +15 °C to +25 °C.

After first opening of the bottle the content can be used up to the expiry date when stored dry and tightly closed at +15 °C to +25 °C.

Disposal

Please mind the respective regulations for the disposal of used culture medium (e.g. autoclave for 20 min at 121 °C, disinfect, incinerate etc.).

Quality Control

Control Strains	ATCC #	Inoculum CFU	Incubation	Expected Results
<i>Escherichia coli</i>	25922	10-100	48 h at 30-35 °C	Good to very good growth, color change to yellow, gas
<i>Escherichia coli</i>	8739	10-100	48 h at 30-35 °C & 24 h at 42-44 °C	Good to very good growth, good to very good growth at 42-44 °C, gas
<i>Enterobacter cloacae</i>	13047	10-100	48 h at 30-35 °C	Good to very good growth, color change to yellow, gas
<i>Klebsiella pneumoniae</i>	13883	10-100	48 h at 30-35 °C	Good to very good growth, color change to yellow, gas
<i>Proteus mirabilis</i>	14273	10-100	48 h at 30-35 °C	Good to very good growth, no color change to yellow, no gas
<i>Pseudomonas aeruginosa</i>	27853	10-100	48 h at 30-35 °C	Medium to very good growth, no color change to yellow, no gas
<i>Staphylococcus aureus</i>	6538	≥ 100	48 h at 42-44 °C	No growth at 42-44 °C

Please refer to the actual batch related Certificate of Analysis.



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Literature

European Directorate for the Quality of Medicines and Healthcare. (2014): The European Pharmacopoeia. 8th Ed. Chapter 2.6.13 Microbiological examination of non-sterile products: Test for specified products. Strasbourg, France.

Japanese Ministry of Health, Labour and Welfare. (2011): The Japanese Pharmacopoeia. 16th Ed. Chapter 4.05 Microbial Limit Test II. Microbiological examination of non-sterile products: Test for specified products. Japanese Ministry of Health, Labour and Welfare. Tokyo, Japan.

MacConkey, A. (1905): Lactose-fermenting bacteria in faeces. J. Hyg. **8**: 333-379.

MacConkey, A. (1908): Bile salt media and their advantages in some bacteriological examinations. J. Hyg. **8**: 322-334.

MacConkey, A. and Hill (1901): Bile salt broth. Thompson Yates Lab. Rep., VI/1; 151 (cited in MacConkey, 1905).

United States Pharmacopoeia 38 NF 33 (2015): <62> Microbiological examination of non-sterile products: Tests for specified microorganisms.

Ordering Information

Product	Cat. No.	Pack size	Other pack sizes available
MacConkey Broth	1.05396.0500	500 g	
Tryptic Soy Broth	1.05459.0500	500 g	5 kg, 25 kg
MacConkey Agar	1.05465.0500	500 g	5 kg
MacConkey Agar - LI 30 ml	1.46022.0020	20 x 90 mm	120 x 90 mm

EMD Millipore Corporation
290 Concord Road
Billerica, MA 01821, U.S.A.
mibio@emdmillipore.com
www.emdmillipore.com/biomonitoring

Find contact information for your country at:
www.emdmillipore.com/offices
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