EP
USP
JP

MacCONKEY Broth

Selective culture medium used as a presumptive test for E. coli and coliform bacteria and for determining the E. coli or coliform titre of milk, water and other materials according to MacCONKEY and HILL (1901).

This medium complies with the recommendations of the harmonized method in the European Pharmacopeia 5.6 and the USP 29.

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 (g/litre)

Peptone from gelatine 20.0; lactose 10.0; ox bile, dried 5.0; bromocresol purple 0.01.

Preparation

Suspend 35 g/litre or more (see Table under Lactose Broth), fill into test tubes, if desired insert DURHAM tubes, autoclave (15 min at 121 °C).

pH: 7.3 ± 0.2 at 25 °C.

The prepared broth is clear and purple.

Experimental Procedure and Evaluation

See 1.07661. Lactose Broth.

Incubation: 48 hours at 35 °C.

Gas and acid are produced:	suggests E. coli and possibly other coliform bacteria
Only acid is produced:	suggests coliform bacteria without E. coli

Literature

European Pharmacopeia 5.6, Chapter 2.6.13 B (Harmonized Method) (2006).

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

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

United States Pharmacopeia 29-NF 24, Chapter <62> (2006).

MacCONKEY, A., a. HILL: Bile salt broth. ñ **Thompson Yates Lab. Rep., VI/1**; 151 (1901) (zitiert in MacCONKEY, 1905).

Ordering Information

Product	Merck Cat. No.	Pack size
MacCONKEY Broth	1.05396.0500	500 g

Quality control

Test strains	Inoculum [CFU]	Growth	Colour change to yellow	Gas formation
Escherichia coli ATCC 25922	10-100	good	+	+
Escherichia coli ATCC 8739	10-100	good	+	+
Escherichia coli ATCC 8739 (24 h/42-44 °C)	10-100	good	+	+
Enterobacter cloacae ATCC 13047	10-100	good	+	+
Klebsiella pneumoniae ATCC 13883	10-100	good	+	+
Proteus mirabilis ATCC 14273	10-100	good	-	-
Pseudomonas aeruginosa ATCC 27853		moderate	-	-
Staphylococcus aureus ATCC 6538		no growth	-	-
Staphylococcus aureus ATCC 6538 (48 h/42-44 °C)		no growth	-	-
Aeromonas hydrophila ATCC 7966		good		