MACCONKEY BROTH WITH NEUTRAL RED

MBWN-00P-500

- **Principle**

MacConkey Broth is a selective and differential medium used for the detection and presumptive identification of lactose-fermenting Gram-negative enteric bacteria, particularly coliform organisms, in water, food and clinical samples. It is commonly employed in microbiological quality control and enumeration procedures as part of coliform testing protocols.

The formulation contains peptone and proteose peptone as sources of nitrogen, amino acids and other essential nutrients required for bacterial growth. Lactose is included as the fermentable carbohydrate and plays a central role in differentiating lactose-fermenting organisms from non-fermenters. Bile salts act as selective agents, inhibiting the growth of most Gram-positive bacteria and thereby favouring the recovery of enteric Gram-negative organisms. Sodium chloride maintains osmotic balance within the medium.

Neutral red is incorporated as a pH indicator. Organisms capable of fermenting lactose produce acid, leading to a decrease in pH and a colour change of the medium to pink or red. In contrast, non-lactose fermenting organisms do not produce significant acid, and the medium remains yellowish or unchanged in colour. This differential reaction allows the presumptive distinction of coliform bacteria from other enteric microorganisms.

- **Regulatory compliance**

This product is manufactured under a quality management system in accordance with ISO 9001 and ISO 13485, and its formulation and quality control comply with applicable international standards, such as ISO 11133, where relevant.

- **Composition**

Ingredients	**g/L**
Peptone	20.00
Lactose	10.00
Bile Salt	5.00
Sodium Chloride	5.00
Neutral Red	0.07

- **Preparation**

Dissolve 40.10 grams in 1,000 ml distilled water. Boil to dissolve the medium completely and distribute in test tubes containing inverted Durham's tube. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 min, cool it to 42-45 °C and inoculate test sample aseptically.

- **Applications and use**

Recommended for the detection and presumptive identification of coliform bacteria in water, food and dairy products, as well as in clinical and environmental samples. It is commonly used in

multiple-tube fermentation techniques and other coliform testing procedures as a selective enrichment step prior to confirmation on solid selective media.

- **Quality control**

Solubility	w/o rests
Appearance	Fine powder
Colour of the dehydrated medium	Beige
Colour of the prepared medium	Green
Final pH (25 °C)	7.2 ± 0.2

- **Microbiological test**

Cultural characteristics observed after incubation at 35±2 °C for 18-24 hours. Inoculum 50-100 CFU.

Microorganism	ATCC	Growth	Acid production	Gas production
Escherichia coli	8.739	Luxuriant	Positive	Positive
Escherichia coli	25.922	Luxuriant	Positive	Positive
Klebsiella aerogenes	13.048	Luxuriant	Positive	Positive
Proteus mirabilis	12.453	Luxuriant	Negative	Negative
Salmonella typhimurium	14028	Poor to Good	Negative	Negative
Enterococcus faecalis	14506	Poor to Good	Positive	Negative
Staphylococcus aureus	25923	Inhibited	-	-

- **Storage**

The product is highly hygroscopic; keep the container always closed and store it properly as per the conditions mentioned on the label. The declared expiry is valid only when stored as per the conditions mentioned on the label. Temp. Min.:2 °C Temp. Max.:25 °C.

Note: Sterilize media immediately after reconstitution.

- **Bibliography**

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Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.

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Rand, M. C., Arnold E. Greenberg, and Michael J. Taras, (1976), Standard methods for the examination of water and wastewater. Prepared and published jointly by American Public Health Association, American Water Works Association, and Water Pollution Control Federation.

- **Product use limitation**

This product is developed, designed and supplied exclusively for research use only. It is not intended for diagnostic applications or drug development, and it is not suitable for administration to humans or animals.