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Oxford
Range of
Laboratory Chemicals

TECHNICAL DATA SHEET

M-MacConkey Broth

Principle

M-MacConkey broth is composed of peptone, bile salt, lactose, sodium chloride, and bromocresol purple. Peptone provides nitrogen and other nutrients necessary for the growth of microorganisms. Bile salt is a selective agent that inhibits the growth of gram-positive organisms. Lactose is a carbon source and plays an important role in the selection of lactose-fermenting microbes. Sodium chloride maintains osmotic balance. Bromocresol purple is a pH indicator. Lactose-positive exhibit a yellow color caused by the acid production from lactose fermenting bacteria, and non-lactose fermenting bacteria form colorless to light pink.

Use: For detection of lactose fermenting & nonfermenting enteric bacteria using membrane filter technique.

Contents*

Ingredients	Gram/Litre
Peptone	10.000
Bile salts	4.000
Lactose	30.000
Sodium chloride	5.000
Bromocresol purple	0.120
pH at 25˚C	7.4±0.2

*** Formula adjusted for optimum performance and parameters**

Directions: Dissolve 49.12 grams in 1000 ml distilled water. Boil to dissolve it completely and distribute it in test tubes containing inverted Durham's tubes. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 min, cool it to 42-45°C. For enumeration and detection of lactose fermenting and non-lactose fermenting enteric bacteria using the membrane filter technique, place a sterile membrane filter absorbent pad or cotton inside a sterile petri dish. Add sterile M-MacConkey broth on the absorbent pad or cotton to wet it. Filter the sample through a membrane filter and place this filter on an absorbent pad or cotton.

Specimens' types analyzed

Water, Dairy and Food samples etc.

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Precautions to be taken

These microbial media are intended for the in-vitro use only. All the handling, experiments, storage, and discarding should be performed with the help of skilled and knowledgeable technicians and as per the established guidelines. The material should be disposed only after proper sterilization by autoclaving. Please go through the MSDS of the media to avoid any accidents or in emergency.

Performance and Evaluation

The expected performance of the medium is liable to use as per the direction on the label when stored at optimum conditions and within expiry date.

Quality Control

Appearance	**Beige colored free flowing, homogeneous powder**
Reaction of 4.91 % solution	**7.4±0.2 at 25˚C**
pH	**7.20 - 7.60**
Color and clarity of ready medium	**Purple colored clear solution**
Growth Promotion properties	**Best at ≤ 100 CFU at 32-37 ºC for 18-48 h**
Indicative properties	**Optimum at ≤ 100 CFU at 32-37 ºC for 18-24 h**
Negative control	**Performed using sterile distilled water**

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

Organism	ATCC	Growth	Colony color on membrane filter
Escherichia coli	**8739**	**Luxuriant**	**Yellow**
Escherichia coli	**25922**	**Luxuriant**	**Yellow**
Salmonella typhimurium	**14028**	**Luxuriant**	**Colorless to light pink**
Staphylococcus aureus	**25923**	**Inhibited**	**Inhibited**

Storage and Shelf Life: The product is highly hygroscopic; keep the container tightly closed at all times 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. Note: Sterilize media immediately after reconstitution.

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Disposal: To avoid the contamination or propagation of any hazardous microbes the used, unusable or modified preparation of this product must be disposed after autoclaving after completion of task.

Reference

1. **Atlas, R. M. (2005). Handbook of media for environmental microbiology. CRC press.**
2. **Baird R.B., Eaton A.D., and Rice E.W., (Eds.), (2015), Standard Methods for the Examination of Water and Wastewater, 23rd Ed., APHA, Washington, D.C.**
3. **Cruickshank R., Duguid J. P., Marmion B. P., Swain R. H. A., (Eds.), (1975) Medical Microbiology, 1975, 12th Ed. Vol. II, Churchill Livingstone**
4. **Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.**
5. **Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.**

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