



Technical Data Sheet

MacConkey Agar With Crystal Violet and Neutral Red (MML-MCA-01)

Principle

MacConkey agar is composed of peptone, proteose peptone, lactose, bile salt, sodium chloride, neutral red, crystal violet and agar. Peptone and proteose peptone provide nitrogen and other nutrients necessary for the growth of microorganism. Lactose is a carbon source and plays an important role for selection of lactose fermenting microbes. Bile salt and crystal violet are selective agents, inhibit growth of gram-positive organisms. Neutral red is pH indicator dye. Agar is solidifying agent. When lactose is fermented, acid is produced and result in bile salt precipitation. Since the lactose fermenting colonies of coliform bacteria are pink in color and may be surrounded by a zone of bile precipitation. While the bacteria that do not ferment lactose remain colorless.

Use: Recommended for isolation and differentiation of lactose fermenting and lactose non-fermenting gram-negative enteric bacilli from pharmaceutical, clinical and non-clinical samples, dairy, food and water samples.

Contents*

Ingredients	Gram/Litre
Peptone	17.000
Proteose Peptone	3.000
Lactose	10.000
Bile Salt	1.500
Sodium Chloride	5.000
Neutral Red	0.030
Crystal Violet	0.001
Agar	13.500
pH at 25°C	7.1 ±0.2

* Formula adjusted for optimum performance and parameters

Directions: Dissolve 50.00 grams in 1000 ml distilled water. Boil to dissolve the medium completely and sterilize by autoclaving at 15 lbs pressure (121°C) for 15 min, cool it to 42-45 °C and distribute aseptically in petri plates. Ensure complete solidification and inoculate test sample aseptically.

Specimens types analyzed

Pharmaceutical samples, clinical and non-clinical samples. food, dairy and water samples etc.

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	Light pink colored free flowing, homogeneous powder
Reaction of 5.0% solution	7.1 ±0.2 at 25 °C
pH	6.90- 7.30
Gelling	Firm comparable with 1.35% agar gel
Color and clarity of ready medium	Orange red colored opalescent gel
Growth Promotion properties	Best at ≤ 100 CFU at 32-37 °C for 18-72 h
Indicative properties	Optimum at ≤ 100 CFU at 32-37 °C for 18-48 h
Negative control	Performed using sterile distilled water

Different Microbial Response

Organism	Inoculum	Growth	Recovery	Colony Color	Incubation
<i>Escherichia coli</i> (ATCC 8739)	50-100	Luxurious	80-90%	Pink red with Bile precipitated	33-37 °C, 18-48 h
<i>Salmonella typhimurium</i> (ATCC14028)	50-100	Luxurious	70-80%	Colorless	33-37 °C, 18-48 h
<i>Staphylococcus aureus</i> (ATCC 25923)	50-100	Inhibited	--	-	33-37 °C, 18-48 h

Storage and Shelf Life

Hygroscopic; keep container tightly closed. Store in cool dry place.

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. *Difco Manual* (1998). 11th Edition. Difco Laboratories., Division of Becton Dickinson and Company, Sparks, Maryland, USA.
3. 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.

Disclaimer

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