

TECHNICAL DATA SHEET

M-PA Agar Base

Principle

Levin and Cabelli (1972) described M-PA Agar as a selective membrane filter medium for *Pseudomonas aeruginosa*. The media is composed of L-lysine, yeast extract, xylose, sucrose, lactose, sodium chloride, ferric ammonium citrate, sodium thiosulphate, phenol red and agar. L-lysine is source of amino acid. Yeast extract provide nitrogen, carbon, vitamins and other necessary nutrients or growth factors. Xylose, sucrose and lactose are fermentable carbohydrates. Sodium chloride maintain osmotic balance. Ferric ammonium citrate and provides essential ions. Sodium thiosulphate is source of sulphate. Phenol red is pH indicator, which turns yellow under acidic conditions due to fermentation of the carbohydrates. Agar is solidifying agent. The selectivity of media can be increase by adding antibiotics like Sulphapyridine, Kanamycin, Nalidixic acid and Amphotericin B. The sulfonamides are synthetic bacteriostatic antibiotics with a wide spectrum against most gram-positive and many gram-negative organisms. Kanamycin inhibits protein synthesis in gram-positive organisms. Nalidixic acid blocks replication of susceptible gram-negative bacteria. Amphotericin inhibits fungal species.

Use: For the detection and isolation of *Pseudomonas aeruginosa* by membrane filter technique.

Contents*

Ingredients	Gram/Litre
L-Lysine	5.000
Yeast Extract	2.000
Xylose	2.500
Sucrose	1.250
Lactose	1.250
Sodium Chloride	5.000
Ferric Ammonium Citrate	0.800
Sodium Thiosulphate	6.800
Phenol Red	0.080
Agar	15.000
pH at 25°C	7.1 ±0.2

* Formula adjusted for optimum performance and parameters

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Directions: Dissolve 40.00 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 add 5.0 ml of sterile antibiotic solution (Sulphapyridine (176 mg) Kanamycin (8.50 mg), Nalidixic acid (37 mg) and Amphotericin B (5.0 mg)). Mix well and distribute aseptically in sterile petri plates. Ensure complete solidification and inoculate test sample aseptically.

Specimens' types analyzed

Pharmaceutical samples, clinical and non-clinical 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 beige colored free flowing, homogeneous powder
Reaction of 4.00 % solution	7.1 ±0.2 at 25 °C
pH	6.90- 7.30
Gelling	Firm comparable with 1.5% agar gel
Color and clarity of ready medium	Orange red colored slightly opalescent gel
Growth Promotion properties	Best at ≤ 100 CFU at 41.5±0.5°C for 18-72 h
Indicative properties	Optimum at ≤ 100 CFU at 41.5±0.5°C for 18-72 h
Negative control	Performed using sterile distilled water

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Different Microbial Response: Prepare media as per the label directions. Inoculate and incubate the media at $41.5 \pm 0.5^\circ\text{C}$ for 48-72 hours.

Organism	ATCC	Inoculum (CFU)	Growth
<i>Pseudomonas aeruginosa</i>	27853	50-100	Luxuriant
<i>Escherichia coli</i>	8739	50-100	Inhibited
<i>Staphylococcus aureus</i>	25923	50-100	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.

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. Levin, M. A., and V. J. Cabelli. (1972). Membrane filter technique for enumeration of *Pseudomonas aeruginosa*. Appl. Microbiol. 24:864-870.

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