TM 2198 – M-PA AGAR

INTENDED USE

For selective detection and isolation of *Pseudomonas aeruginosa* by membrane filter technique.

PRODUCT SUMMARY AND EXPLANATION

The MPN (Most Probable Number) technique results in satisfactory recovery levels of *Pseudomonas aeruginosa,* but is not usable for the testing of large-volumes water samples and they also lack precision for the recovery of *Pseudomonas aeruginosa.* Levin and Cabelli devised M-PA Agar as a selective membrane filter medium for *Pseudomonas aeruginosa*.

Many of the filter media used for the recovery of *P.aeruginosa* lack specificity and are of limited value when a large heterogeneous microbial flora is present in the water samples. The original medium was modified by raising the pH and altering the content or concentration of ingredients. This media is included in part 914 C, Membrane Filter Technique for *P.aeruginosa* (Tentative) in the 16th / 19th Edition of Standard Methods for the Examination of Water and Waste water.

COMPOSITION

Ingredients	Gms / Ltr
L-Lysine hydrochloride	5.000
Yeast Extract	2.000
Xylose	1.250
Sodium chloride	5.000
Sucrose	1.250
Sodium Thioglycollate	5.000
Phenol red	0.080
Ferric ammonium citrate	0.800
Agar	12.000
Lactose	1.250
Magnesium Sulphate	1.500
Kanamycin	0.008
Nalidixic acid	0.037

PRINCIPLE

Yeast extract, lysine and carbohydrates provide nitrogenous compounds, energy sources and vitamins required for bacterial metabolism. Sodium chloride maintains osmotic equilibrium. Inorganic salts provide essential ions. Kanamycin inhibits protein synthesis in gram-positive organisms. Cycloheximide inhibits fungal flora. Nalidixic acid blocks replication of susceptible gram-negative bacteria. Phenol red is the pH indicator which turns yellow under acidic conditions due to fermentation of the carbohydrates.

After filtration of the water sample through a sterile 0.45 µm gridded filter, place the membrane filter on the surface of plates of M-PA Agar Base taking care to avoid the entrapment of bubbles between the agar and filter surface. Incubate for 24 hours at 41.5±0.5°C in an aerobic atmosphere. Optimal colony density on membrane filters is 20-200 colonies. All colonies on the filter are counted when the density is 2 or fewer per square; the average of 10 squares is determined when the count is 3-10 colonies per square and the average of 5 squares is determined when the count is 10-20 colonies per square. The average count per square is multiplied by 100 times the reciprocal of the dilution to give colonies per ml.

INSTRUCTION FOR USE

- Dissolve 35.18 grams in 1000 ml of distilled water.
- Heat with agitation and boil for 1 minute to dissolve the medium completely. Do not autoclave.
- Cool to 45-50°C and pour into sterile Petri plates.
- Use the medium within 1 week of preparation.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Light yellow to pink homogeneous free flowing powder.
Appearance of prepared medium : Orange red coloured clear to slightly opalescent gel forms in Petri plates.
pH (at 25°C) : 7.2 ± 0.2

INTERPRETATION

Cultural characteristics observed after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Growth	Recovery	Colour of the medium	Incubation Temperature	Incubation Period
Escherichia coli	25922	>=10^3	Inhibited	0%	-	41.5 ± 0.5°C	up to 72 Hours
Staphylococcus aureus	25923	>=10^3	Inhibited	0%	-	41.5 ± 0.5°C	up to 72 Hours
Pseudomonas aeruginosa	27853	50-100	Good-Luxuriant	>=50%	Pink	41.5 ± 0.5°C	up to 72 Hours

PACKAGING:

In pack size of 500 gm bottles.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.

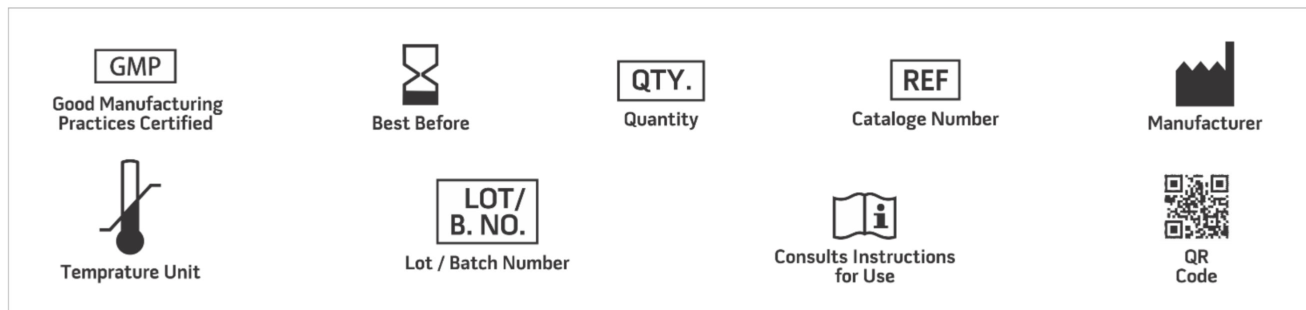
Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

1. Levin M. A. and Cabelli V. J., 1972, Appl. Microbiol., 24:864.
2. Carson L. A., Peterson M, J., Favero M. S., Doto I. L., Collins D. E. and Levin M. A., 1975, Appl. Microbiol., 30:935.
3. Dutka B. J. and Kwan K. K., 1977, Appl. Environ. Microbiol., 33:240. 4.Greenberg A. E. , Trussell R. R. and Clesceri L. S., (Eds.), 1985, Standard Methods for the Examination of Water and Wastewater, 16th / 19th Ed., APHA, Washington, DC.
4. Estevez R. A., 1984, Bacteriologic plate media: review of mechanisms of action. Lab. Med. 15:258.



NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For Lab Use Only**

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