Technical Information

Pseudomonas Isolation Agar Base

Product Code: DM 1406

Application: Pseudomonas Isolation Agar Base is used for selective isolation and identification of *Pseudomonas aeruginosa* from clinical and non-clinical specimens.

Composition**

Ingredients	Gms / Litre
Peptic digest of animal tissue	20.000
Magnesium chloride	1.400
Potassium sulphate	10.000
Triclosan (Irgasan)	0.025
Agar	13.600
Final pH (at 25°C)	7.0±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Pseudomonas aeruginosa is an important human pathogen commonly anociated with nosocomial infections because of its easily adaptability to a variety of moist environments and collection of potent virulence factors [1] *Pseudomonas* infections usually occur at any site where moisture tends to accumulate e. g. tracheostomies, in-dwelling catheters, burns, the external ear and weeping cutaneous wounds [2].
Pseudomonas Isolation Agar Base, used for the exclusive isolation and identification of *P. aeruginosa,* is a modification of Medium A, originally formulated by King, Ward and Raney [3]. The medium contains pigment-enhancing components and the selective agents, triclosan [4] which selectively inhibits non-pseudomonads. The pigment-enhancers i.e. potassium sulphate and magnesium chloride enhance the blue or blue-green pigment production by *P. aeruginosa,* helps in identification of Pseudomonas.
Peptic digest of animal tissue provides nitrogenous compounds and other essential growth nutrients. Glycerol is a source of energy and promotes pyocyanin i.e. pigment production which is characteristic of *Pseudomonas* [5, 6]. Potassium sulphate and magnesium chloride enhance pyocyanin production. Triclosan [7] selectively inhibits gram-positive and gram-negative bacteria but Pseudomonas species are resistant to it. Some pyocyanin producing strains may also produce small amounts of fluorescein, resulting in the production of a blue-green to green pigment. Presumptive *Pseudomonas* should be further confirmed by performing biochemical tests, as some strains of Pseudomonas do not produce pyocyanin [8].

Methodology

Suspend 45.03 grams of powder media in 1000 ml distilled water containing 20 ml glycerol. Shake well & heat to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Mix well and pour into sterile Petri plates.

Quality Control

Physical Appearance
Cream to yellow homogeneous free flowing powder

Gelling
Firm, comparable with 1.36% Agar gel.

Colour and Clarity of prepared medium
Yellow coloured clear to slightly opalescent gel forms in Petri plates.

Reaction
Reaction of 4.5% w/v aqueous solution at 25°C. pH : 7.0±0.2

pH range
6.80-7.20

Cultural Response/Characteristics
DM 1406: Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Colour of colony
Escherichia coli ATCC 25922	>=10^3	inhibited	0%	
Proteus mirabilis ATCC 25933	>=10^3	inhibited	0%	
Pseudomonas aeruginosa ATCC 10145	50-100	Luxuriant	>=50%	Green
Pseudomonas aeruginosa ATCC 27853	50-100	Luxuriant	>=50%	Blue to blue-green

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.
Prepared Media: 2-8^0 in sealable plastic bags for 2-5 days.

Further Reading

1. Murray P. R., Baron J. H., Pfaller M. A., Jorgensen J. H. and Yolken R. H., (Ed.), 2003, Manual of Clinical Microbiology, 8th Ed., American Society for Microbiology, Washington, D.C. ,,
2. Koneman E. W., Allen S. D., Janda W. M., Schreckenberger P. C., Winn W. C. Jr., 1992, Colour Atlas and Textbook of Diagnostic Microbiology, 4th Ed., J. B. Lippinccott Company
3. King F. O., Ward M. K. and Raney D. E., 1954, J. Lab. Clin. Med., 44 :301.
4. Collee J. G., Fraser A. G., Marmion B. P., Simmons A., (Eds.), Mackie and McCartney, Practical Medical Microbiology, 1996, 14th Edition, Churchill Livingstone
5. Finegold S. M. and Baron E. J., 1986, Bailey and Scotts Diagnostic Microbiology, 7th Ed., The C. V. Mosby Co., St. Louis.
6. MacFaddin J. F., 1985, Media for Isolation-Cultivation-Identification-Maintenance of Medical Bacteria, Vol. I, Williams and Wilkins, Baltimore.
7. Furia T. E. and Schenkel A. G., 1968, Soap and Chemical Specialties 44:47
8. Gaby W. L. and Free E., 1958, J. Bacteriol., 76:442

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