# Pseudomonas Isolation Agar Base

**M406**

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

## Directions

Suspend 45.03 grams in 1000 ml distilled water containing 20 ml glycerol. Heat to boiling 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.

## Principle And Interpretation

*Pseudomonas aeruginosa* is an important human pathogen commonly found in nosocomial infections. It successfully combines adaptability to a variety of moist environments with a 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 selective 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* , thus aiding in its identification.

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).

## Quality Control

**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**
6.80-7.20

**Cultural Response**
M406: Cultural characteristics observed after an incubation at 35-37°C for 18-48 hours.

| Organism | Inoculum (CFU) | Growth | Recovery | Colour of colony |
|---|---|---|---|---|
| **Cultural Response** | | | | |
| *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

Store below 30°C in tightly closed container and the prepared medium at 2 - 8°C. Use before expiry date on the label.

## Reference

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