

Pseudomonas

They are mostly saprophytes being found in water, soil and wherever decomposing matter is found. They are frequently involved as secondary invaders causing suppurative and inflammatory lesions. Pathogenic member is *Pseudomonas aeruginosa*

PSEUDOMONAS AERUGINOSA

(Pseudomonas pyocyanea)

Morphology: It is slender, Gram-negative bacilli of $0.5\ \mu \times 3.5\ \mu$ size, actively motile by polar flagellum. It is non-capsulated.



Cultural character: It is aerobic growing on simple nutrient media with optimum temperature of 37°C.

Peptone water: After 18 to 24 hours' incubation it forms dense turbidity and surface pellicle. Bluish green pigment due to water soluble pyocyanin is seen.

Nutrient agar: It produces large, opaque irregular colonies of butyrous consistency.

It gives musty or earthy smell or fruity odor due to production of aminoacetophenone from tryptophane. It produces water soluble pigment pyocyanin which diffuses in medium.

Pigments are of following types:

- a. Pyocyanin (bluish green)**
- b. Fluorescein (yellowish green)**
- c. Proverdin (green)**
- d. Pyorubin (red)**

e. Pyomelanin (black) Some strain may be non-pigmented .

Blood agar: It shows beta type hemolysis.

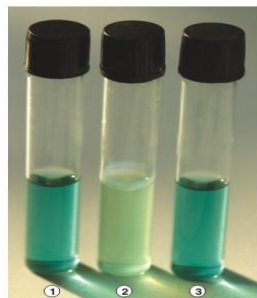
MacConkey: It produces non-lactose fermenting .

Cetrimide agar: It is selective medium .



Biochemical reactions:

Glucose is used oxidatively forming acid only. Nitrate are reduced to nitrites and nitrogen. Catalase and oxidase are positive.



Malachite Green Broth (M1266)

1. Control
2. *Pseudomonas aeruginosa* ATCC 27853
3. *Escherichia coli* ATCC 25922

Resistance:

Heating at 56°C kills the organisms. It is resistant to common antiseptic and disinfectants. It is resistant to most of antibiotics.

However, it is sensitive to polymyxin B, colistin, gentamicin and carbencillin.

Laboratory Diagnosis

1. Specimens: Pus, exudate, sputum and swabs from conjunctiva are examined.

Purulent discharge is usually greenish blue in color having sweetish odor

2. Culture: On nutrient agar media characteristic greenish blue colonies appear. It may be confirmed by biochemical tests.