

Lecture 17: *Pseudomonas*

Pseudomonas is a genus of Gram-negative, aerobic, non-sporing bacteria belonging to the family Pseudomonadaceae. Because of their widespread occurrence in water and soil, and also can be isolated from skin throat, the pseudomonads were observed early in the history of microbiology. The generic name *Pseudomonas* created for these organisms was defined in rather vague terms by Walter Migula in 1894 and 1900 as a genus of Gram-negative, rod-shaped and motile by polar-flagellated bacteria with some sporulating species, musty smell

Phylum: Proteobacteria

Class: Gammaproteobacteria

Order: Pseudomonadales

Family: Pseudomonadaceae

Genus: *Pseudomonas*

Characteristics

Members of the genus display these defining characteristics: Rod-shaped, Gram-negative, flagellum one or more, providing motility, aerobic, Non-spore forming, catalase-positive, oxidase-positive. *Pseudomonas* species also typically give a positive result to the oxidase test, the absence of gas formation from glucose, glucose is oxidised in oxidation/fermentation test using and citrate positive. Bluish green pigmentation

Antibiotic resistance

Most *Pseudomonas* spp. are naturally resistant to penicillin and the majority of related beta-lactam antibiotics, but a number are sensitive to piperacillin, imipenem, ticarcillin, or ciprofloxacin. Aminoglycosides such as tobramycin, gentamicin, and amikacin are other choices for therapy.

This ability to thrive in harsh conditions is a result of their hardy cell walls that contain porins. Their resistance to most antibiotics is attributed to efflux pumps, which pump out some antibiotics before they are able to act.

***Pseudomonas* infection** :It causes urinary tract infection respiratory system infection and dermatitis soft tissue

Treatment: Gentamycin ,Amikacin , cephalosporine