

# Study of Clinical Isolates of *Pseudomonas Aeruginosa*: Correlation between Resistance Phenotype, by Standard PCR and Specific Genetic Mutation

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**Abstract**—*Project summary*: -*P. aeruginosa* infection has been frequently associated with treatment on responsiveness globally, especially in the immunologically less robust age group, such as infants and elderly. As such, even patients who have been admitted in hospital are highly vulnerable to this menace. This situation has worsened with the rapid emergence of multiple drug resistance strain.

Keeping this background in mind, clinical isolates of bacteria were obtained from infected individuals that were characterized for drug susceptibility using Kirby-Bauer antibiotic disc diffusion method. Disc of various drugs like; Tetracyclin, Piperacillin, Polymyxin-B, Gentamicin, Ceftazidime, Imipenem, Tobramycin, Doripenem were tested for the detection of sensitivity of isolates towards them. Biochemical test such as MRVP test were also carried out to test the presence of *P.aeruginosa*, which was further conformed by their ability to grow in Citrimide agar and Milk agar plates. PCR and after running through gel electrophoresis the bacteria strains were determined with respect to their resistance phenotype as Gel electrophoresis the bands has been positively correlated with increased antibiotic resistance. This also helps in the evolution bases similarities and some adaptations of the bacteria which makes it resistance and also change the sequence of the genes.

In addition, the presences of several genes have been associated with each group of antibiotic resistance. Hence, in this study we also evaluated the presence of these genes in all the isolates studied using standard PCR and agarose gel electrophoresis. This helped in establishing the genetic basis of the observed resistance phenotype.

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## References

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