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Antibiotic resistance study of some clinical strains of *Pseudomonas aeruginosa* characterization by conjugation and cleaning out of plasmid

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ABSTRACT

The antibiotic resistance of *Pseudomonas aeruginosa* presents a serious problem in medicine as this pathogenic germ is responsible for many diseases of which certain nosocomial infections. The 22 strains of *P. aeruginosa* were the target of our study as they have a multi-resistance against β -lactamines and aminosides; on the other hand, they are all sensitive to the ciprofloxacin. They all produce the β -lactamases. 15 strains are in favor of hyperproduction of cephalosporinases and all present a penicillinase phenotype. The cleaning out performed on *P. aeruginosa* is negative. The transfer by conjugation of the plasmid carrying gene of resistance to the ticarcillin and piperacillin is positive for 12 of the 22 studied strains. The experiments of conjugation made it possible to confirm that this resistance could have the plasmidic DNA as a support.

Keywords: *Pseudomonas aeruginosa*; β -lactamines resistance; β -lactamases; conjugation.

INTRODUCTION

Within the frame work of our study, we were particularly interested in the antibiotic resistance of *Pseudomonas aeruginosa* which is a pathogenic opportunist germ of tenimplied in the nosocomial infections. *P. aeruginosa* has an intrinsic resistance against many antibiotics; this resistance is mainly the result of a pressure selection due to abusive or bad use of antibiotics. The propagation of this resistance is elucidated in bacterial resistance by acquisition of *P. aeruginosa* of a transferable resistance to β -lactamines which presents a great risk of dissemination to other bacteria.

MATERIALS AND METHODS

The 22 strains of *Pseudomonas aeruginosa*, were isolated from various services of the C.H.U of Tlemcen hospital and a reference strain PU21 ciprofloxacin R.