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Der Pharma Chemica, 2012, 4 (3): 1160-1163
(http://derpharmachemica.com/archive.html)

ISSN 0975-413X
CODEN (USA): PCHHAX

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 aminosids; on the other hand, they are all sensitive to the ciprofloxacine. They all produce the β-lactamases. 15 strains are in favor of hyperproduction of céphalosporinases 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 ticarcilline and pipéracilline is positive for 12 of the22 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 ciprofloxacine R.

After reactivation and purification by a successive subculture on BHIB then on Mac Conkey, we carried out an identification by insulation with the cétrimide agar ,by a test of growth at 42°C as well as two API20E and API20NE galleries; with an antibiogramme and a determination of the minimal concentration inhibiting (MCI) According to**[2]**; with the iodometric test detection of β-lactamases**[3]**; with the phenotypes resistance determination by the cloxacilline test ; with the plasmid transfer per conjugation ; as well as the cleaning out of plasmid by the SDS **[8]**.