Abstract

Polymyxines are often used as last resort against multi-resistant Gram negative bacterial infections (MRB), including bacterias such as *Pseudomonas aeruginosa*, *Klebsiella pneumoniae* et *Acinetobacter baumannii.*
In parellel to the growing use of polymyxins, resistances to those **antibiotics** have developped in those organisms. Among those resistances a plasmid carrying the resistance gene to colistin (mcr-1 gene) has been highlighted. This raises an important public health issue, by reducing treatment options.

In the ADMED microbiology laboratory some cases of **colistin resistance** have been identified. Antibiograms have shown that the used enterobacteria strains were colisin-resistant. In few cases a growth on CNA (Colistine & Nalidixic Acid) has been observed (that has a concentration of 10 mg/L of colistin). After that some colistin **MIC** has been performed to confirm the observed resistances. Recently an article published in "Clinical Microbiology" has demonstrated that usual phenotypic methods used in laboratories are not reliable. The reason is that polymyxins are complex molecules making them difficult to diffuse through agar.

Therefore, the laboratory wishes to find another way to screen polymyxin resistance by using superpolymyxin plates.

The aim of this project if to evaluate the efficiency of polymyxin plates by testing enterobacteria strains and *pseudomonas aeruginosa* strains coming from hemocultures. Known colistin-resistant strains were tested on superpolymyxin plate to confirm the resistance, which allowed to exclude non-detected resistances. We also confirmed the resistance of these strains with other methods (MIC, UMI, Test Rapid Polymyxin NP).