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P0777 Transposition of Tn1213 encoding the PER-1 extended-spectrum beta-lactamase

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Background: PER-like enzymes are class A extended spectrum ß-lactamases (ESBL) that confer resistance to penicillins, oxymino-cephalosporins and aztreonam, but spare cephamycins and carbapenems. Previous studies have reported that the *bla*$_{PER-1}$ gene is either chromosome or plasmid encoded being part of a composite transposon (Tn*1213*) bracketed by insertion sequences IS*Pa12* and IS*Pa13*, being two members of the IS*4* insertion sequence family. The aim of this study was to investigate experimentally the mobility of the composite transposon Tn*1213* in *E. coli* and elucidate its mode of action.

Materials/methods: The whole Tn*1213* was PCR amplified from *P. aeruginosa* and cloned into the low-copy plasmid pACYC184. Plasmid pSM01 was then transformed into the *E. coli* RZ211 strain carrying the self-conjugative, IS-free pOX38 plasmid that harbors the gentamicin resistance gene, was used as a target for putative transpositions events. The transposition frequency was assessed by dividing the number of the transconjugants by the number of the donor cells.

Results: Transposition occurred in ten different sites on the recipient plasmid pOX38, and at low frequency (1.1 x10^{-9}). A ten-bp DR was systematically detected at each extremity of each transposed fragment. Noteworthy, in-silico analysis of the insertion sites revealed that they were mostly preceded by TT and followed by GA nucleotide tandems, suggesting a target site specific preference for the composite transposon Tn*1213*.

Conclusions: Here we evidenced the mobilization of the *bla*$_{PER-1}$ gene located in the previously described composite transposon Tn*1213.* This work showed that Tn*1213* is functional and therefore can still actively contribute to the further dissemination of the *bla*$_{PER-1}$ gene among clinically relevant Gram-negative species.