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The possible role of PilS and PilV in the interaction of atypical enteropathogenic *Escherichia coli* to epithelial cells

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Enteropathogenic *Escherichia coli* (EPEC), is identified by the presence of *eae* and *bfp* genes which encode the adhesin intimin and the type IV bundle-forming pilus (BFP), respectively. Both genes and BFP expression are used to classify EPEC into two groups: typical (*eae*$^+$*/bfp*$^+$/BFP$^+$*)* and atypical (*eae*$^+$*/bfp*$^-$/BFP$^-$). BFP plays an important role in the adherence of tEPEC to the enterocyte. In contrast, aEPEC does not express BFP and is a very heterogeneous pathotype, thus other fimbrial adhesins might be implicated in its pathogenesis. Despite of the role of type I fimbriae in the aggregative (AA) pattern and in enteroaggregative *E. coli* (EAEC) biofilm formation its presence in *E. coli* pathogenesis is unclear. Nevertheless, the pilin PilS and the adhesin PilV contribute to plasmid conjugation, epithelial cell and to abiotic surfaces adherence in EAEC isolates. Thus, in this study we investigated if these proteins could be involved in the interaction of aEPEC isolates to epithelial cells in vitro. The presence of the *pilS* and *pilV* genes was investigated by PCR in a collection of aEPEC strains, and for the adhesion assays HEp-2 epithelial cells were used, with incubation periods of cell-bacterial interaction of 3 and 6 hours, in the presence and in the absence of mannose. The *pilS* and *pilV* genes were amplified in the isolates BA558, BA956 and BA1244. The adhesion assays showed the following patterns in 6h: localized adherence for BA558, non adherence for BA956 and localized-like adhesion for BA1244. Since in these three isolates no other genes that encode other fimbrial components have been found it is conceivable that PilS and PilV proteins may be responsible for phenotypes other than the enteroaggregative pattern. Studies on cloning and expression of PilS and PilV are currently under way in our laboratory, and will allow confirming the involvement of these fimbrial adhesins in the bacterial-cell interaction.

Keywords: atypical EPEC, fimbrial adhesins, adherence pattern, type IV fimbriae