

TITLE: EFFECT OF LOW MOLECULAR WEIGHT FRACTION OF *BOTHROPS JARARACA* VENOM IN INTERACTION *IN VITRO* OF ENTEROPATHOGENIC *ESCHERICHIA COLI* AND EPITHELIAL CELLS

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Enteropathogenic *Escherichia coli* (EPEC) is one of the main causes of diarrhea in children in developing countries. EPEC causes a histopathologic lesion named attaching and effacing (A/E), characterized by destruction of intestine microvilli and formation of a pedestal, due to the intimate adherence of the bacterium to the epithelial cell and rearranging of cytoskeleton. The genes responsible for this lesion are encoded in a pathogenicity island named LEE, which is, among other factors, subject to regulation by quorum sensing, a cell density dependent mechanism that involves low mass signaling molecules known as autoinducers. A negative interference in this mechanism, or “quorum quenching”, could be achieved in the presence of foreign molecules, like isolates of natural products. The aim of this study was to observe the effect of lower molecular weight fraction of the venom of *Bothrops jararaca*, a complex mixture of different components with different biological effects. The fraction was obtained by ultrafiltering the venom with membranes with molecular weight cut-off of 10 kDa and 3 kDa. Different concentrations of the fraction were added to an adherence assay of EPEC with HEp-2 cells. To verify that the fraction interfered with the interaction of the bacteria with their host cells and not with the bacteria themselves, a colorimetric assay with resazurin and reading of growth curves were also carried out, with negative results which indicated that the fraction has no bactericidal effect and does not interfere in the bacterial growth. The adherence assay showed that EPEC adherence decreased in comparison to the control test in the presence of the venom fraction as its concentration was increased. The results indicate the presence of a component with low molecular weight in *Bothrops jararaca* venom that can negatively affect the EPEC interaction with its host cells.

KEYWORDS: *Escherichia coli*, EPEC, quorum sensing, *Bothrops jararaca* venom

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