

TITLE: PRO-INFLAMMATORY RESPONSE OF INTERLEUKIN-1 AND TUMOR NECROSIS FACTOR ON INTRAPERITONEAL INFECTION BY *Escherichia coli* ENTEROHEMORRHAGIC IN SWISS MICE

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ABSTRACT:

Escherichia coli (*E. coli*) belongs to the intestinal microbiota of mammals, colonizing mainly the colon's mucous, however, these commensal strains can cause diseases in immunocompromised hosts or with broken gastrointestinal barrier. The virulence mechanisms allow sorting in different pathotypes among them *E. coli* Enterohemorrhagic (EHEC) is distinguished by the virulence factors and mechanisms of pathogenesis developed. Therefore, in this work aimed to establish the relationship between the cellular response in the early stage of infection by *E. coli* through the profile of cytokines Interleukin 1 beta (IL-1 β) and tumor necrosis factor alpha (TNF- α) in mice infected with strains Diarrheagenic and not Diarrheagenic. For this, 52 Swiss female mice were used, divided in Control group, infected with American Type Collection Culture (ATCC) and infected with EHEC at different times. The animals were submitted to euthanasia. Inoculated 4 ml of intraperitoneal saline solution to obtain peritoneal exudate and the dosage of pro-cytokines by enzyme-linked immunosorbent assay (ELISA). Evaluating the profile of IL-1 β of the EHEC and ATCC strains there was a significant difference between the groups in the times studied, with a higher dosage of ATCC. The peak of IL-1 β of EHEC strain occurred in 12 hours, declining, without returning the control level. Regarding the dosage of TNF- α , the EHEC strains showed large variation in 6 hours and 24 hours. Induction of proinflammatory cytokine expression was related to the presence of Shiga toxin (Stx), The pattern of cytokine IL-1 β observed in animals infected with EHEC, reveals a highly pathogenic feature of this strain and the importance of this to understanding the infectious and inflammatory process generated by EHEC, as well as the profile of cytokines to decrease the occurrence of Hemolytic Uremic Syndrome (UHS) and mortality.

KEYWORDS: Cytokines. Diarrheagenic. *Escherichia coli* Enterohemorrhagic. Pro-inflammatory

Development Agency: Fundação Araucária