

Study of the effector function of murine macrophages infected *in vitro* with *Salmonella enteritidis*

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Introduction: *Salmonella nontyphoidal* is a major cause of foodborne illness in the world. The Enteritidis has being identified as the most common serovar and is responsible for gastroenteritis and even systemic infections. In developing countries, Enteritidis and Typhimurium Serovar cause invasive infections leading to death of young children with underlying diseases and also, death of adults infected with HIV [1]. These bacteria can proliferate within epithelial cells and non-activated macrophages, but by using specific mechanisms of pathogenicity island SPI2, they may persist also in activated macrophages, showing cytotoxic effects on these cells. **Objective:** To evaluate the function and activity of murine macrophage cell line J774A.1 after infection with *Salmonella Enteritidis*. **Materiais e Métodos:** J774A.1 macrophages were cultured on 96 well plates for 24 hours, and then were infected with *Salmonella Enteritidis* in a MOI (Multiplicity of infection) 50. The phagocytosis capacity and killing activity were evaluated by Alamar Blue incorporation/metabolization. Cell viability was evaluated by the MTT (brometo de tiazolil - (3-[4,5-Dimetiltiazol-2-il]-2,5-difeniltetrazólio) reduction assay. We also determined nitric oxide and hydrogen peroxide liberation by macrophages using the Greiss reaction and phenol red, respectively. **Results:** The bacteria were efficiently phagocytized by macrophages that had been able to kill the intracellular pathogen, as shown by Alamar Blue-based assay. We also have shown that *Salmonella Enteritidis* had no cytotoxic effect on macrophages. Therefore, the production of nitric oxide and hydrogen peroxide was not significant when macrophages were infected with *Salmonella Enteritidis*, comparing with uninfected macrophages. **Conclusion:** The phagocytosed-bacteria were efficiently killed by macrophages in our experimental model. However, the mechanism involved in the microbicide effect seems to be independent of nitric oxide and hydrogen peroxide release by macrophages.

Keywords: *Salmonella Enteritidis*, macrophages, function, phagocytosis, killing

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