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Study of Nitric Oxide production by murine peritoneal macrophages induced by Brucella Lipopolysaccharide

Kavoosi G, Kabodanian Ardestani S, Kariminia A



Abstract:

Brucella is a gram negative bacteria that causes Brucellosis. Lipopolysaccharide (LPS), the pathogenic agent of Brucella is composed of O-chain, core oligosaccharide and lipid A. In addition, the structural and biological properties of different LPS extracted from different strains are not identical. The first defense system against LPS is nonspecific immunity that causes macrophage activation. Activated macrophages produce oxygen and nitrogen radicals that enhance the protection against intracellular pathogens. In this experiment LPS was extracted by hot phenol-water procedure and the effect of various LPSs on nitric oxide production by peritoneal mouse macrophages was examined. Our results demonstrated that the effect of LPS on nitric oxide production is concentration-dependent. We observed the maximum response in concentration of 10-20 microgram per milliliter. Also our results demonstrate that LPS extracted from vaccine Brucella abortus (S 19) had a higher effect on nitric oxide production than the LPS from other strains.

Keywords:

[Brucella abortus](#) . [Brucella melitensis](#) . [LPS](#) . [Peritoneal macrophage](#)

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