

ABSTRACT

Background: The purpose of this bachelor thesis is to describe *Francisella tularensis* and activation of innate immunity during host infection.

Main findings: The main findings of the work include the method of recognition of *F. tularensis* via Toll-like receptors, the production of cytokines and chemokines and the subsequent involvement of other components of innate immunity, including neutrophils, NK cells, or humoral components of the immune response, which also includes complement. The information is based on a number of studies performed mainly on mouse models.

Conclusions: The intracellular bacterium *F. tularensis* is known to cause tularemia. Its high infectivity, together with the high risk of death in the lung form, raises great concerns about the misuse of this bacterium as a biological weapon. To date, not all of its mechanisms of pathogenesis are known, which is a major problem in the development of effective vaccines. The induction of innate immunity appears to be very important in the host's defense against *F. tularensis*. However, despite several decades of research, the mechanisms of *F. tularensis* involved in host cell manipulation, including the regulation of the induction of immune response to *F. tularensis* infection, have still not been fully elucidated.

Key words: *Francisella tularensis*; intracellular bacterium; innate immunity; infection; macrophages; neutrophils; complement; cytokines