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Host response to radiation and passive transfer of immunity against *Francisella* *tularensis*

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The protective immunity against tularemia can be seen to be a complex interplay among humoral and cell-mediated immune mechanisms which ensure the elimination of *Francisella tularensis* (F. tularensis) microbes from cells and tissues of infected individuals. We investigated the immune response induced by the F. tularensis strain 15L and F. tularensis live vaccine strain (LVS). Before infection, Balb/c or C3H/CBi mice were intraperitoneally (i.p.) injected with serum obtained from immunized mice with F. tularensis LVS (resp. 15L) or heat-killed F. tularensis LVS (resp. 15L). Both serum LVS (resp. 15L) and heat-killed LVS (resp. 15L) from immune mice transfer protection to naive recipient. Thus immunized mice were infected with sublethal or lethal doses of F. tularensis LVS (resp. 15L). Our findings clearly demonstrate that F. tularensis specific antibodies produced in immunized mice with both live and heat-killed F. tularensis LVS (resp. 15L) were completely protective in passive transfer experiments and likewise in subsequent highly-virulent strain infection. Here we also characterize and acknowledge immunogenic repertoire of F. tularensis LVS for the purpose of finding potential target molecules that can activate the host immune system using general immunoproteomic approach. Seeing that the contributory role of specific antibodies in the host defence still remains unclear, we used irradiated mice to elucidate and characterize the humoral role of antibodies during immune response. Moreover using irradiated mice, we partly sought to disprove the crucial role of T cell-mediated protective immunity and the role of Th1/Th2 cytokines.

Biography

KUBELKOVA KLARA is Ph.D student of Institute of Molecular Pathology and the research member of radiological-nuclear group of Center of Advanced Studies at the Faculty of Military Health Sciences of University of Defence, Czech Republic.