

Public Abstract

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Department:Microbiology- Medicine

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Title:The Cellular and Humoral Immune Response against Primary Infection with *Coxiella burnetii*

*Coxiella burnetii* is an obligate intracellular bacterial pathogen that causes the disease Q fever in humans. It typically spreads through infectious aerosols generated by ruminants. Cases of Q fever can be found worldwide, but they are particularly common in Australia, the Netherlands, and the Middle East. Acute Q fever is a self-limiting febrile illness, but chronic Q fever develops in some patients. This form of the infection is typically fatal and requires extensive antibiotic treatment. Our research is focused on understanding how the immune system responds to *C. burnetii* infection. We found important roles for immune cells called T cells and for B cells. T cells are important to clear the infection, while B cells are important in regulating the immune response. We also found that an avirulent form of *C. burnetii* induces a unique form of cell death in B cells. All studies presented here seek to understand the immune response to Q fever in order to develop new, more effective treatments for acutely and chronically infected patients.