

Brucella canis induces canine CD4 + T cells multi-cytokine Th1/Th17 production via dendritic cell activation

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Brucella canis is a small intracellular Gram-negative bacterium that frequently leads to chronic infections highly resistant to antibiotic therapy in dogs. Also, it causes mild human brucellosis compared to other zoonotic Brucella spp. Herein we characterize the cellular immune response elicited by B. canis by analysing human and canine CD4 + T cells after stimulation with autologous monocyte-derived dendritic cells (MoDCs). Human and canine B. canis-primed MoDCs stimulated autologous CD4 + T cells; however, a Th1 response was triggered by human MoDCs, whereas canine MoDCs induced Th1/Th17 responses, with increased CD4 + T cells producing IFN- γ and IL-17A simultaneously. Each pattern of cellular response may contribute to host susceptibility, helping to understand the differences in B. canis virulence between these two hosts. In addition, other aspects of canine immunology are unveiled by highlighting the participation of IL-17A-producing canine MoDCs and CD4 + T cells producing IFN- γ and IL-17A. © 2018 Elsevier Ltd

Brucella canis

CD4 + T cells

Cytokines

Dendritic cells

Host susceptibility

gamma interferon

interleukin 12

interleukin 17

tumor necrosis factor

biological marker

cytokine

animal cell

Article

bacterial strain

bacterial virulence

Brucella canis

CD4+ T lymphocyte

cell activation

cell isolation

cell proliferation

controlled study

cytokine production

dendritic cell

dog breed

female

host susceptibility

human

human cell

immune response

male

monocyte

nonhuman

protein expression

Th1 cell

Th17 cell

animal

biosynthesis

Brucella canis

brucellosis

CD4+ T lymphocyte

cell communication

dendritic cell

dog

dog disease

immunology

immunophenotyping

lymphocyte activation

metabolism

microbiology

physiology

Th1 cell

Th17 cell

veterinary medicine

Animals

Biomarkers

Brucella canis

Brucellosis

CD4-Positive T-Lymphocytes

Cell Communication

Cytokines

Dendritic Cells

Dog Diseases

Dogs

Humans

Immunophenotyping

Lymphocyte Activation

Th1 Cells

Th17 Cells