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Cross talk between innate and adaptive immunity in infection

Significant progress has been made in recent years on our understanding of the interaction of innate and adaptive immune responses in infectious diseases. Using a mouse model of chlamydial lung infections, we studied the role of natural killer cells (NK) and NK T cells (NKT) on the function of macrophages, dendritic cells (DC), and T cells host resistance against the infections. By gene knockout and antibody deletion techniques, we have shown significant changes of the phenotype and function of DC, T cells and macrophages in the mice with NK or NKT cell deficiency, particularly the subsets of these cells. More importantly, we demonstrate that the changes of phenotype, subset and function of these innate and adaptive immune cells correlate with the susceptibility and pathology to chlamydial infections. The data suggest the critical importance of the modulating effect of innate immune system on adaptive immunity in intracellular bacterial infections.

Biography

Xi Yang is a Canada Research Chair in Infection and Immunity. He is working as a Professor in the departments of Medical Microbiology and Immunology of University of Manitoba, Canada. He is also extending his duties as a Chair of Promotion and Tenure committee in the department of Immunology. The research program in his laboratory focuses on the cellular and molecular basis of immune responses to allergens and infectious agents and on the development of immunoprophylactic approaches for allergy and infectious diseases.

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