

# Ninan Abraham - Principal Investigator



**Ninan Abraham**

Professor  
Infection, Inflammation and Immunity (I<sup>3</sup>) Research Group

Department of Microbiology and Immunology  
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Ph.D., University of Ottawa (1998); Post-Doctoral Fellowship, University of California San Francisco (1998-2002)

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## Research Interests

The development, maintenance and proper functioning of T- and B-cells are essential for the survival of mammals in a pathogen-ridden environment. Their absence results in inherited or acquired immunodeficiency, the latter of which is the basis of a growing health crisis. Conversely, deregulated growth and development can lead to cancer of the immune system. Leukemia and Lymphoma are the most common cancers among children.

Our research focus is on a cytokine, interleukin-7 (IL-7), that is an essential growth factor for

lymphocytes. Defects in IL-7 or its deregulation cause immunodeficiency and lymphomas respectively. Our long-term goal is to use genetic models of IL-7 function to understand the key intracellular, signaling processes that contribute to these diseases and to formulate novel therapeutic strategies.

The projects that we are pursuing include:

1. Genetic analysis of the role of proliferation and survival signals in lymphocyte development, maintenance and lymphomagenesis using transgenic and knock-in mouse models, and cell culture-based approaches.
2. Determination of the dose-sensitivity of IL-7-induced survival factors (STAT5, phosphatidylinositol-3 kinase, Akt) by haploinsufficiency analysis.
3. IL-7 regulation of CD8 SP T-cell development and homeostasis.
4. Functional genomic, proteomic and gene array approaches to identify novel effectors induced by IL-7 with significant roles in lymphoid development and lymphomagenesis.

## **Awards**

Damon Runyon Cancer Research Foundation Fellow, 1999-2002

Canadian Institutes of Health Research (CIHR) New Investigator Award, 2008-2013

Michael Smith Foundation for Health Research (MSFHR) Career Investigator Scholar Award, 2008-2014