Video Article

Interview: Glycolipid Antigen Presentation by CD1d and the Therapeutic Potential of NKT cell Activation

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Abstract

Natural Killer T cells (NKT) are critical determinants of the immune response to cancer, regulation of autoimmune disease, clearance of infectious agents, and the development of atherosclerotic plaques. In this interview, Mitch Kronenberg discusses his laboratory's efforts to understand the mechanism through which NKT cells are activated by glycolipid antigens. Central to these studies is CD1d - the antigen presenting molecule that presents glycolipids to NKT cells. The advent of CD1d tetramer technology, a technique developed by the Kronenberg lab, is critical for the sorting and identification of subsets of specific glycolipid-reactive T cells. Mitch explains how glycolipid agonists are being used as therapeutic agents to activate NKT cells in cancer patients and how CD1d tetramers can be used to assess the state of the NKT cell population in vivo following glycolipid agonist therapy. Current status of ongoing clinical trials using these agonists are discussed as well as Mitch's prediction for areas in the field of immunology that will have emerging importance in the near future.

References

1. Khurana A and Kronenberg M. "A Method for Production of Recombinant CD1d Protein in Insect Cells" (12/10/2007) Journal of Visualized Experiments