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Exploiting human dendritic cell subsets to improve host response to pathogens

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Abstract

Dendritic cells (DCs) comprise a diverse family of antigen presenting cells that are responsible for initiating and controlling most immune responses. Although distinct DC subsets exhibit an incredible array of specializations, the underlying basis for this specificity is still largely unknown. Moreover, the classification of human tissue DCs is still poorly characterized compared to mouse.Understanding the biology of DC subsets with their unique specializations is critical because targeting a specific DC subset or its product will likely be the key to control and manipulate the immune system for ameliorating diseases. We have focused our efforts on understanding the biology of human skin DCs as they are well positioned at a barrier site to encounter environmental antigens and potential pathogens, and are also the major target of vaccines. In this presentation we will discuss evidence showing that tissue DCs consist of functionally distinct subsets that differentially regulate T lymphocyte function. We have shown that LCs control the activation of cytolytic T cells (CTLs), while a different population of DCs in the dermis, marked by the expression of CD14+ enhances the production of antibody-mediated immunity.Recent data related to the biology of novel DC subsetsandthe conservation between human skin and mouse DCs will be covered.

Biography

Dr. EynavKlechevsky has completed her PhD in 2007 from the Technion – Israel Institute of Technology in Haifa Israel and the Baylor Institute for immunology Research in Dallas Texas, where she continued for her postdoctoral studies. She is an Assistant Professor at the department of Pathology and Immunology at Washington School of Medicine. Her research is focused on the biology of human dendritic cells in health and disease. She has published several high impact papers and reviews and holds several patents on the use of conjugated antibodies as immunotherapy vaccine reagents.