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# Immunoproteomics analysis of infected cells for the identification of conserved MHC class I-presented virus specific T cell epitopes

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Viruses such as influenza and dengue are highly infectious and are significant global public health problems and understanding the overall immune response to infection will contribute to appropriate management of the disease and development of effective vaccines. Although the current vaccines for these viruses target increasing humoral immunity, there is evidence that T-cell responses are extremely important for long lasting protection. Due to the persistence of cell mediated immunity after viral clearance, T-cell responses to conserved epitopes may afford cross strain protection. Identification of peptides displayed by cells infected with viral pathogens generates a library of epitopes and, by genomic database searching, the viral proteins of origin that are recognized and processed by the immune system are identified. Primarily, shared T cell epitope identification for family of viruses has taken the motif prediction or epitope mapping algorithm approach, which often differ from the naturally processed and presented antigenic peptides on infected cells. In the last decade, direct identification of HLA class I presented epitopes from infected cells has emerged as an alternate to the motif prediction method and is termed immunoproteomics.Immunotproteomics methodology is a powerful strategy aimed at the rapid, unambiguous identification of less abundant naturally processed and presented epitopes from infected cells. HLA-associated viral epitopes have been identified from dengue and influenza virus infected cells using ultrasensitive mass spectrometry based immunoproteomics methodology and characterized for cross strain reactive T cell response, which are associated with adaptive immunity and are of strategic importance for vaccine development.

## Biography

Ramila Philip, PhD. is currently the President and Chief Scientific Officer at Immunotope, an adjunct professor at Drexel University and professor at the Institute for Hepatitis and Virus Research. Dr. Philip is an internationally recognized expert in immunotherapeutic vaccines and has taken several vaccine products from research stage to early phase clinical trials. She earned her Ph.D. in Immunology in India and did her postdoctoral training at the Institute of Immunology, Basel, Switzerland and was a junior faculty at Cancer Research Institute, University of California, San Francisco. She has over 75 peer reviewed publications in leading scientific journals.

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