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# Immune and proteome profiling of a cohort of HIV/HCV mono and coinfected patients

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The human immune system is under constant challenge from many viruses, some of which the body is successfully able to clear. Other viruses have evolved to escape the host immune responses and thus persist, leading to the development of chronic diseases. Dendritic cells (DCs) are professional antigen presenting cells that play a major role in both innate and adaptive immunity against different pathogens. For the past few years our efforts have been focused on exploring the participation of DCs in chronic viral infections especially those related to HTLV-1, HIV-1 and HCV. HTLV-1 is associated with two immunologically distinct diseases: HTLV-1-associated myelopathy/tropical spastic paraparesis and adult T-cell leukemia. We observed previously that depletion of DCs in CD11c-DTR transgenic mice enhanced the susceptibility to cell-free HTLV-1 infection. We further performed the in-depth host-pathogen interaction studies utilizing Flt3L cultured mouse bone marrow-derived DCs (FL-DCs). First, the kinetics of viral entry, proviral integration, and expression of the viral protein Tax was established and then effects of cell-free HTLV-1 was examined on these cells. Phenotypically, FL-DCs demonstrated activation upon infection and produced an array of proinflammatory cytokines as well as type 1 IFN (IFN-α). Virus-matured FL-DCs also stimulated proliferation of autologous $CD3^+$ T cells and IFN-γ production. Gene expression studies using type 1 IFN-specific and DC-specific arrays revealed upregulation of interferon-stimulated genes, most cytokines, and transcription factors but a distinct downregulation of many chemokines. Overall, these results highlight the critical interaction of DCs with a human chronic virus important for the early immune responses.

## Biography

Pooja Jain is an Associate Professor in the Department of Microbiology and Immunology, Drexel University College of Medicine (DUCOM), Philadelphia. She also holds a joint faculty appointment in the Institute for Molecular Medicine and Infectious Diseases as well as in the Drexel Institute for Biotechnology and Virology Research within DUCOM. She has received a PhD in Microbiology from the Central Drug Research Institute, India in 2001 and completed her postdoctoral training from the Texas Tech University Health Science Center as well as from the DUCOM. She has published 30 peer-reviewed articles and is serving as an Editorial board member/reviewer for 5 reputed journals.