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Dendritic cells trafficking into the CNS in response to inflammation and infection

I have over 20-years experience in biomedical research with key expertise in host-pathogen interaction between dendritic cells (DCs) and human retroviruses (both HTLV-1 and HIV-1) as well as associated neurological complications. Our seminal contribution lies in bridging two important fields of Neuroscience and Immunology while strengthening DCs' presence and functions within CNS. This is by means of my original work providing direct evidence for the ability of circulating DCs to migrate across the inflamed blood-brain barrier during an active ongoing neuro-inflammatory

condition by the live intravital video-microscopy. This was further substantiated by a variety of non-invasive imaging tools such as NIR, SPECT-CT, MRI and PET imaging. These studies are yielding important pre-clinical data paving ways for potentially new DC-based immunotherapeutic strategies against neuro-inflammatory diseases. Fairly recently, we undertook similar approach toward HIV-CNS infection and demonstrated DCs' interaction with HIV within CNS and cervical lymph nodes. We have also identified myeloid cell-specific targets (i.e. CLEC12A) to inhibit the trafficking of DCs/monocytes into the CNS, which can help resolve HIV reservoir within CNS and associated lymphoid organs.

Biography

Pooja Jain is the Professor of the Microbiology and Immunology with a joint appointment in the Department of Neurobiology and Anatomy at the Drexel College of Medicine, USA. Dr. Jain is well respected as a Retrovirologist and Neuroimmunologist. She has authored more than 55 peer-reviewed publications, 300 abstracts, and presented numerous invited talks across United States and overseas. Her leadership skills are reflected in mentoring dozens of researchers including Postdocs, MD/PhD, PhD, and Master students. She has been serving as the Reviewer of various journals, planning committee member of international symposia as well as expert for the NIH study sections.

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