



PROGRESS IN NEUROSCIENCE PINS

Seminar Series of the
Brain & Mind Research Institute
Weill Cornell Medical College (WCMC)
&

The Graduate Program in Neuroscience of
WCMC and Sloan Kettering Institute

Thursday, 12/1/16, 4 PM, coffee at 3:45 PM

Weill Auditorium (C-200)



“The Role of T Cells in Stroke”

Zsuzsanna Fabry, Chair, Cellular and Molecular Pathology Graduate Program
Vice Chair for Research, Department of Pathology and Laboratory Medicine
University of Wisconsin, School of Medicine and Public Health

Abstract



As a neuroimmunologist, for the last several years, I have focused my research program on deciphering the mechanisms of neuroinflammation in autoimmunity, infection and traumas of the Central Nervous System that are important for public health. Our goal is to improve strategies for treating CNS inflammation, block neurodegeneration and induce neuroregeneration. My ongoing primary projects include 1) Initiation and maintenance of CNS immunity: Our overall hypothesis is that myeloid and dendritic cells (DCs) are critical for the initiation, regulation, and maintenance of antigen-specific T cell-mediated autoimmune responses in the CNS. 2) CNS Mycobacterium tuberculosis (Mtb) infection (CNSTB): One of the most dangerous infectious diseases of the CNS is caused by Mycobacterium tuberculosis (Mtb) (CNSTB). Our experiments are designed to fill the gap in our knowledge regarding the pathogenesis of CNSTB and will lead to improved strategies for treating mycobacterial infections of the CNS. 3) CNS Stroke: We study the contribution of immune cells and mediators to stroke. Based on our preliminary data, we hypothesize that IL-21 critically contributes to ischemic damage in the CNS. We aim to determine if IL-21 contributes to neuronal tissue injury in the post ischemic brain by activating specific immune cells, damaging the blood-brain barrier and inducing neuronal death. 4) Multiple Sclerosis (MS): my team is participating in a National Multiple Sclerosis Society (NMSS) funded clinical trial to test novel therapies to treat humans with MS.

Recent Relevant Publications:

1. Clarkson, B. D., Ling, C., Shi, Y., Harris, M. G., Rayasam, A., Sun, D., Salamat, M. S., Kuchroo, V., Lambris, J. D., Sandor, M., Fabry, Z. 2014. T cell-derived interleukin (IL)-21 promotes brain injury following stroke in mice. *The Journal of Experimental Medicine*. doi: 10.1084/jem.20131377. PMID: 25000000.
2. Ling C, Sandor M, Suresh M, Fabry Z. Traumatic injury and the presence of antigen differentially contribute to T-cell recruitment in the CNS. *The Journal of neuroscience : the official journal of the Society for Neuroscience*. 2006;26(3):731-41. doi: 10.1523/JNEUROSCI.3502-05.2006. PMID: 16421293.



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