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, 5/19/16, 4 PM, coffee at 3:45 PM
Weill Auditorium

"The Brain-Immune Interface in Stroke: Identifying Players and Intersection Points"

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Abstract:

The central nervous system (CNS) and the immune system are engaged in continuous bidirectional communication. Under homeostatic conditions immune surveying cells patrol the CNS, and in turn, the brain integrates environmental and organism wide signals to control immunogenesis and immune response. During ischemic brain injury these mechanisms become perturbed leading to alterations in the systemic immune status and to changes in immune cell trafficking to the CNS. These interactions can have either beneficial or detrimental effects on stroke outcome. Current work in our laboratory focuses on identifying origin, priming, trafficking, temporal dynamics and functional polarization of innate immune cells involved in ischemic brain injury and on determining their relevance for stroke outcome. In mouse models of focal cerebral ischemia we take advantage of photoconvertible and functional fluorescent reporters to assess immune cell trafficking and differentiation.

Recent relevant publications:

1) Benakis, Corinne, David Brea, Silvia Caballero, Giuseppe Faraco, Jamie Moore, Michelle Murphy, Giulia Sita, et al. 2016. "Commensal Microbiota Affects Ischemic Stroke Outcome by Regulating Intestinal γδ T Cells." *Nature Medicine* 22 (5): 516–23.

2) Garcia-Bonilla, Lidia, Corinne Benakis, Jamie Moore, Costantino Iadecola, and Josef Anrather. 2014. "Immune Mechanisms in Cerebral Ischemic Tolerance." *Frontiers in Neuroscience* 8: 44.

3) Garcia-Bonilla, Lidia, Jamie M Moore, Gianfranco Racchumi, Ping Zhou, Jason M Butler, Costantino Iadecola, and Josef Anrather. 2014. "Inducible Nitric Oxide Synthase in Neutrophils and Endothelium Contributes to Ischemic Brain Injury in Mice." *The Journal of Immunology* 193 (5): 2531–37.

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