



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, 4/9/15, 4 PM, coffee at 3:45 PM
Weill Auditorium

“Role of CD36 in ischemic stroke: from acute pathology to stroke recovery?”

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Abstract:



Two main lines of research have been established in my laboratory; acute neuroprotection and long-term stroke recovery. For acute neuroprotective strategies, my laboratory have been examined several well known risk factors associated with higher incidence of cerebrovascular diseases and poor outcome. These include hypercholesterolemia, hypertension, diabetes, and obesity, and co-morbid conditions that have not been systematically examined in experimental animal models of stroke. In an effort to narrow the gap between animal models and clinical conditions, we proposed the inclusion of hyperlipidemia in our mouse model of stroke. In addition, close examination of stroke pathology revealed that multiple pro-death processes including inflammation, necrosis, apoptosis, oxidative stress, and vascular dysfunction are involved. Thus, targeting a specific pathway may not overcome the heterogeneous nature of stroke pathology. This led to the concept of a multi-modal approach: targeting a molecule that is involved in multiple pathogenesis, thereby simultaneously mitigating several pro-death pathways. To this end, we proposed that CD36, a class B scavenger receptor, is a potential target molecule for a multi-modal approach. We have been particularly focuses on in vivo phenomena and the underlying events by which peripheral inflammatory status influence the acute outcome of stroke-induced injury and potential recovery in chronic stroke through a novel CD36 mechanism.

Recent relevant publications:

-Kim E, Tolhurst AT, Qin LY, Chen XY, Febbraio M, Cho S (2008) CD36/fatty acid translocase, an inflammatory mediator, is involved in hyperlipidemia-induced exacerbation in ischemic brain injury. *J Neuroscience*. 30;28(18):4661-70

-Kim E, Febbraio M, Bao Y, Tolhurst T, Epstein F, Cho S (2012) CD36 in the periphery and brain synergizes in stroke injury in hyperlipidemia. *Annals of Neurology* 71(6):753-64



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