Phagocyte-mediated brain cleanup as target for stroke recovery

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Research Interests

- Neuropharmacology and laboratory models of ischemic stroke and intracerebral hemorrhage
- His research involves understanding the cellular and molecular mechanisms underlying the pathology of acute cerebral ischemia, reperfusion injury and intracerebral hemorrhage, with emphasis on calcium related signal transduction, adenosine receptors, protein phosphorylation, transcription factors (specifically NF-kappaB, Nrf2 and PPAR) and neuroinflammation (including role of microglia in hematoma resolution)
- Utilizing behavioral modalities in our rats, we are also investigating the effect of motor and cognitive activities on neuronal plasticity and functional recovery from stroke-induced brain damage. Also, using relevant animal models, including knockout mice, he is evaluating new clinically relevant experimental pharmacotherapies with different mechanisms of action targeting the acute and recovery phase of stroke and ICH pathology

References

Zhao X, Aronowski J. Nrf2 to pre-condition the brain against injury caused by products of hemolysis after ICH. Transl Stroke Res 4; 71-75, 2013