Molecular and Cell Biology Seminar Series

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From Concussion to Dementia: A Key Role for Dysregulated Brain Inflammation

Dr. Linda J. Van Eldik, Ph.D

Director, the Sanders-Brown Center on Aging

University of Kentucky

Date:

Friday, 3/7/14

Time:

4:00 PM

Location:

COB 267

Abstract:

The presentation will discuss the evidence for a connection between traumatic brain injury (TBI) and a higher risk for later development of neurodegenerative conditions and dementia, and show how excessive injury-induced proinflammatory responses in the brain could be a key link between these two events. Data will be also presented documenting that suppression of the abnormal brain inflammation with novel, CNS-penetrant, small molecule drugs prevents neurodegenerative and behavioral impairments in animal models of TBI and Alzheimer's disease.

Learning Objectives

Upon completion of this educational activity, participants will be able to:

1. Summarize the observations that a prior head injury can increase dementia risk.
2. Discuss how dysregulated brain inflammation is involved in neurologic impairment in traumatic brain injury (TBI) and Alzheimer's disease (AD).
3. Explain contemporary drug discovery approaches to develop selective CNS-active, small molecule suppressors of excessive brain inflammatory cytokine production.
4. Describe the evidence that targeting dysregulated neuroinflammation with these small molecules protects against synaptic and cognitive dysfunction in mouse models of TBI and AD.

BIO:

Linda Jo Van Eldik, PhD, is Director of the Sanders-Brown Center on Aging, the Vernon Smith Endowed Chair in Alzheimer Research, and Professor of Anatomy and Neurobiology at the University of Kentucky in Lexington KY. She is also Director of the University of Kentucky Alzheimer's Disease Center, a National Institutes of Health-funded center established in 1985 and internationally recognized for its contributions to the fight against brain diseases that are associated with aging.

She has an active research program focused on brain inflammation, and she is investigating why neurodegenerative disorders exhibit overactive and chronic inflammation that can lead to disruption of normal communication among brain cells and cause nerve cell damage.

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