



LIFE IS A MIXTAPE:

Endogenous retrovirus-K blends neurological disease and immunity

SEMINAR & VISITING SPEAKER SERIES

DATE

Friday, February 23rd, 2018
9:00am

LOCATION

PX236/238
Psychealth Building

SPEAKER

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ABSTRACT:

Endogenous Retroviruses (ERVs) are genetic elements of viral origin found within the human genome. Enhanced ERV expression has been associated with several inflammatory diseases; yet the mechanism behind their induction is poorly understood. ERVK is implicated in the neurological disease Amyotrophic Lateral Sclerosis (ALS). Our laboratory has shown that specific inflammatory signals can promote the re-activation of dormant ERVK elements within human astrocytes and neurons. Increased expression of ERVK relies on inflammatory transcription factors binding to the viral promoter. Inflammatory signals are also sufficient to promote viral polyprotein cleavage, leading to the formation of functional viral proteins, such as the integrase enzyme. ERVK integrase drives cellular DNA damage, as well as inhibits innate immunity, revealing mechanisms by which ERVK contributes to select disease processes. The findings generated from our research allows for identification of novel therapeutic targets to control pathogenic ERVK expression in inflammatory and neurodegenerative disease.

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