

New Mexico State University

Biomedical Research Seminar Series
Speaker Announcement

Friday, Sept. 22, 2017, 3:30 pm

Domenici Hall, Rm 109

(Refreshments served at 3:00)



Phillip Rivera, PhD,

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The role of neuroimmune signaling on addiction-like behaviors in mice

It is now appreciated that drugs of abuse - such as morphine - promote an inflammatory response from glia in the brain, primarily from microglia, which may play an important role in mediating reward behaviors. However, the specific role of microglial pro-inflammatory signaling after reward behaviors has yet to be determined. We therefore developed a novel transgenic mouse in which pro-inflammatory signaling specifically from microglia (i.e. Cx3cr1-Cre^{tg}/0 x MyD88^{f/f}, Cre^{tg}/0) is ablated within the CNS. Characterization of the Cre^{tg}/0 mice lead to a decrease in pro-inflammation in the CNS and morphine reward behaviors were enhanced compared to Cre⁰/0. Given the role of adult hippocampal neurogenesis in reward behaviors, dentate gyrus doublecortin (DCX), a marker of immature neurons, was then examined and showed an increase DCX relative to Cre⁰/0 mice after morphine reward behaviors. To determine if microglia were involved in reward behaviors, a microglial lysosomal marker (CD68⁺) and DCX⁺ surface volumes showed increased colocalization only in mice that previously received morphine, but not naive mice. Taken together, our results suggest that microglial-MyD88 signaling directly impacts reward behavior and adult neurogenesis suggesting a novel protective role specifically from microglia via inflammatory signaling.

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For more information or to meet with the speaker please contact Shelley Lusetti at slusetti@nmsu.edu



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