



THE UNIVERSITY OF ARIZONA
COLLEGE OF MEDICINE TUCSON
Pharmacology

Presents

“Altered ion channel trafficking as the basis for autoimmune and neuropathic pain”

BY



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Abstract

Dr. Aubin Moutal, Assistant Professor in the Department of Pharmacology and Physiology at Saint Louis University, leads a research lab focused on understanding the transition from protective to chronic pain. By studying rare autoimmune clinical conditions, the lab aims to identify novel proteins involved in dysregulated synaptic neurotransmission in chronic pain states. Using cutting-edge techniques such as CRISPR, electrophysiology, biochemical assays, and rodent behavior models, the team explores how autoantibodies disrupt sensory neuron function, uncovering mechanisms like the regulation of ion channel trafficking by CRMP5 (Collapsin Response Mediator Protein 5). This work not only sheds light on pain pathophysiology but also identifies therapeutic targets to address pain disorders. In this presentation, Dr. Moutal will highlight recent findings on CRMP5 and its role in regulating Nav1.8 ion channels, whose dysfunction contributes to neuronal hyperexcitability and pain. By leveraging paraneoplastic syndromes and associated autoantibodies, the lab has developed preclinical models that replicate autoimmune pain phenotypes. These studies pave the way for innovative therapeutic strategies, such as ion channel blockers and peptides that restore normal neuronal function. The presentation will underscore the importance of studying rare pain conditions and translational efforts to bridge the gap between clinical observations and therapeutic innovations.

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11:00 am – Noon

AHSC - Room 8403

<https://arizona.zoom.us/j/82268538546>