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Mitochondrial Insult in a Parkinson's like symptoms model¹ JULIO CARRIZALES, MANUEL CANTU, DANIEL PLAS, The University of Texas Pan-American, DR. DANIEL PLAS LAB TEAM — Healthy cells require healthy mitochondria. If these organelles are damaged, many health consequences follow. For example, Parkinson's Disease (PD) is a major neurodegenerative disorder of unknown cause, but much evidence points to the mitochondrion as a key player in the onset of this disease. PD has been studied in animal models challenged with toxins that target the mitochondria. In our work, we have used the pesticide, Rotenone, a known inhibitor of protein Complex I in the mitochondrial electron transport chain. When this toxin is applied to the freshwater mollusk, Lymnaea stagnalis, or pond snail, severe motor deficits ensue. In this project, we are studying the direct effects of this toxin on mitochondrial structure and physiology. We expected that the morphology of the organelle may be altered. In addition, it is likely that the mitochondrial membrane potential necessary for normal function may decrease as the electron transport loses the ability to move protons from the matrix to the intermembrane space. we also are going to use Electrophysiology to compare and Identify the difference of the electrical signaling among healthy and unhealthy neurons.

¹HHMI

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