THE UNIVERSITY OF
ALABAMA
R E S E A R C H
Office for Technology Transfer

Yeast System for Identification of Neuroprotective Small Molecules and Genes

| Contact:	Status:	Inventor:
Dr. Rick Swatloski	Seeking R&D and/or	**Dr. Stevan Marcus**
Director - OTT	licensing partner	Associate Professor
(205) 348-8583		
RPSwatloski@ua.edu	Patent Pending	Biological Sciences

System for Identifying Neuroprotective Small Molecule and Genes

- Mitochondria are essential for normal cellular metabolism where dysfunction is a causative or contributory factor in a number of human diseases.
- Typically, these diseases are most frequently manifested as neurological dysfunction such as Parkinson's and Alzheimer's diseases.
- The rat-rotenone model is useful for investigations on the pathophysiology of these diseases.
  - o Also help in exploring potential drug and genetic therapies for treatment.
- Like other animal models, this model is slow and expensive to process with variable relevance and utility.

Advantages

- High through put yeast-rotenone model to conduct genetic and small molecule screens.
  - o Helps to identify therapeutic targets and treatments for neurodegenerative disorders.
- Use *S. pombe* yeast cells, which allows for a relative model for human mitochondrial diseases.
  - o Has shown that rotenone treatment results in increased reactive oxygen species (ROS) production.
- Used their assay in *S. pombe* to identify genes that increase, and decrease, rotenone sensitivity.
- These results are consistent with a role for Pmk1 and PKA clearing ROS, making them potential targets for therapeutic intervention.

S. pombe Phosphatidylethanolamine-deficient Cells Are Hypersensitive to Rotenone
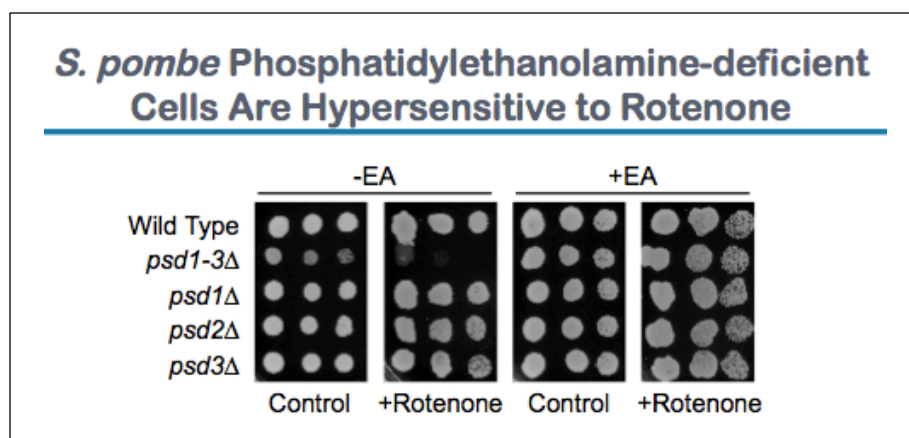
For More Information, Click to View YouTube Pitch