Fall 2024

Biochemistry and Molecular Biology Brown Bag Series

Maddy Gruenberg
Graduate Student

"Determining the kinetics of manganese peroxidase with simple phenols"

Tuesday, November 19, 2024

11:00 AM

Location 105 Biological Sciences Building

Lab: Michael Schmidt, Ph.D.

Boonshoft School of Medicine
WRIGHT STATE UNIVERSITY

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https://science-math.wright.edu/biochemistry-and-molecular-biology

Abstract:

Secondary metabolites are a diverse class of compounds that include small phenols to large polymeric structures such as tannins. The smaller compounds such as phenolic acids can serve as substrates for soil microbes and enzymes. We monitored the activity of a redox active soil enzyme, manganese peroxidase (MnP), with three small phenols. The compounds used in this study were pyrogallol, gallic acid, and benzoic acid. Based on the kinetic parameters determined, pyrogallol and gallic acid are both substrates for MnP with different products and kinetics. Pyrogallol reacts faster and produces a more stable quinone than gallic acid. Benzoic acid is not a substrate for MnP.

Fall 2024

Biochemistry and Molecular Biology Brown Bag Series

Rahul Shah
Graduate Student

"What I Learned at Cold Spring Harbor Lab: Yeast Genetics & Genomics Course"

Tuesday, November 19, 2024

11:00 AM

Location 105 Biological Sciences Building

Lab: Shulin Ju, Ph.D.

Boonshoft School of Medicine
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Abstract:

Attending the Yeast Genetics and Genomics course at Cold Spring Harbor Laboratory provided invaluable training in advanced yeast genetics research techniques, including Synthetic Genetic Array (SGA) analysis. SGA is a powerful high-throughput technique designed to identify genetic interactions by systematically creating and analyzing double mutants across a genome. By pinpointing synthetic lethal and synthetic sick interactions, SGA helps uncover functional redundancies and gene networks. This course provided the necessary expertise to apply these techniques effectively within my research.

In Dr. Ju's lab, we conducted a similar genetic screen to investigate the toxicity of ALS (Amyotrophic Lateral Sclerosis)-associated genes. Using yeast as a model organism, we systematically identified human suppressor genes that reduced the toxicity of ALS-associated genes, helping expand the gene network involved with ALS-associated genes. The training at Cold Spring Harbor will allow me to leverage new genetic techniques learned during the course to progress my research. My subsequent discussion will include reflections on my experiences in the course.