DOMINICAN UNIVERSITY of CALIFORNIA

Scholarly & Creative Works Conference

#10

Presenter: Jacqueline Clarke

Room: Guzman Lecture Hall

Faculty Mentor: Tyler Johnson

Session & Time: Poster I / 11:00 to 12:00pm

Discipline: Biological Sciences

Digital Portfolio URL:

Title: Semisynthesis of Mycothiazole with Meerwein's salt to Improve Stability and Retain Cytotoxic Potency Leads to a Mixture of Diastereomers

Abstract:

The mycothiazole chemotype (1), from the marine sponge Cacospongia mycofijiensis, exhibits cytotoxicity and solid tumor selectivity to pancreatic cancer cell lines as well as lifespan extending properties in aging models. Its di-ene-8-ol residue appears essential for its biological activity. Unfortunately, the di-ene-8-ol residue of 1 is also responsible for the lability of 1 which has a shelf life of ≤ 6 weeks. To address this, we have made a new O-methylated semi synthetic analog of 1 that we believe is more stable than the natural product. Its structure will be reported using NMR, HRMS, and optical rotation. The new analog will be tested against a variety of cancer cell lines to analyze if it retains potency compared to 1 as well as its effects in biochemical assays that measure the aging process.