RYAN W. NELSON, ALYSSA D. HUNT, AND YOUNG B. KIM, Department of Applied Sciences, School of Arts & Sciences, Bluefield State College, Bluefield, WV Progress on C-1 Diversification of Natural Product Synthesis from Commercially Available Amino Acids

Discovery of a new bioactive agent from idea to FDA approved drug candidate can take decades and cost upwards of 1 million dollars. Utilizing a tool like Structure Activity Relationship (SAR) profile in the process can potentially save time and money. Furthermore, many of FDA approved drugs are often started from natural products (NPs) due to its unique chemical makeup. Having them in synthetic approach can be more cost effective than the isolation from the specific organism. In our research lab, we are working on the bio-active NP known as Penazetidine A from commercially available amino acid. With satisfactory progress in its NP synthesis, our main objective in this project is exploring C-1 position of NP using the R group of Leu, Phe, Gly, and Ala. Amino acid to diversify C-1 side to see their SAR profile. This approach is mediated by CDI coupling reagent to extend C-terminus of amino acid into ketoester amino acid. Currently, we finished with the coupling reactions and will present analytical data to support outcome of this reaction with their final yield calculation. *Supported by NIH Grant P20GM103434 to the West Virginia IDeA Network for Biomedical Research Excellence*