

TYLER G. GOINS, MARK J. CORVIN, YOUNG B. KIM, Department of Applied Sciences, School of Arts & Sciences, Bluefield State College, Bluefield, WV, Exploring Diastereomeric Pure Reduction Chemistry on Ketoester Amino Acid

Reduction is a chemical reaction involving a compound gains an electron. This can transform a trigonal planar geometry into tetrahedral conformation of molecule then potential introduces a new chiral center into the molecule. Since 1992, new FDA regulation requires to address the enrichment ratio of the chiral center as a part of their drug safety protocol. In this project, we are going to present three different reductions, 1) *NaBH₄*, 2) *Luche Reagent*, and 3) *L-Selectride*, based on their chemical steric hinderance from the ketoester to secondary alcohol and show their diastereomeric ratio. Thus far, *NaBH₄* gave us a diastereomeric ratio of 70:30 mixture that can explain by the computational study. We will provide the following analytical data such as NMR, IR, and MS of reduced product in this poster. Additionally, more bulky reducing reagents such as *Luche Reagent* and *L-Selectride* will present to see how it changes to their diastereomeric ratio of ketoester amino acid. *Supported by NIH Grant P20GM103434 to the West Virginia IDeA Network for Biomedical Research Excellence*