**STUDIES TOWARD THE TOTAL SYNTHESIS OF ELETEFINE.** D. Tusch, J. Kohl, J. Cody*, RIT Department of Chemistry, GlaxoSmithKline, *djt6487@rit.edu*, *jacsch@rit.edu*

Our work toward the total synthesis of the natural product eletefine will be described. Eletefine is a novel alkaloid that was isolated from plants used in traditional medicines in Brazil and China for asthma, infections, and inflammation. Eletefine is a member of the stephaoxocane family of natural products that contain a common structural motif. Our retrosynthetic analysis of eletefine quickly breaks the target into two main fragments, an isoquinoline fragment and an alkyne fragment resulting in a very convergent route. The isoquinoline fragment has been achieved in the lab from an inexpensive commercially available acid chloride in only three steps, with a total yield of 55%. The proposed route to the alkyne fragment is envisioned to be synthesized from cheap commercially available carboxylic acid starting material in three steps, including an iodolactonization, an epoxide formation, and an alkyne addition. Once the two fragments are synthesized, it is expected that the target molecule can be completed in three steps, involving Sonagashira coupling, a Friedel-Crafts acylation, and an alkene hydration. Purifications of intermediates and products are performed using silica gel chromatography. Structure determination of the intermediates and products are evaluated using proton NMR, gas column mass spectroscopy (GC/MS), and liquid column mass spectroscopy (LC/MS).