Abstract

L-arginine is a conditional amino acid that has been shown to benefit through supplementation, which has led to the mass production of L-arginine. Most industrial syntheses have been through keratin hydrolysis, which is harmful to the environment. While there are some green biosyntheses, the chemical industry tends not to use them because of their lower yields. This investigation aims to synthesize L-arginine using new, greener chemical methods. The formation of the first intermediate product, an enamide ester, was successfully completed. This method consisted of a three-step synthesis using hippuric acid to form azlactone, which then reacted with 3-[(Benzyloxycarbonyl)amino]-propionaldehyde to form a believed to be a new compound, 2-phenyl-4-(3-benzyloxy carbonyl amino) propylidene-oxazol-5-one. Through an acid/base reaction, the azlactone group of the compound opened to properly synthesize the enamide ester. Future investigations would be to complete the synthesis to form L-arginine.