Substituted Bioactive Quinazolinone Research Project

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Abstract

Chagas disease is a very common tropical disease that affects a large population in Latin America. Symptoms include prolonged fever, malaise, enlargement of liver, spleen, and lymph nodes. Research of tropical diseases is helpful because it allows for the knowledge and study of foreign disease and treatment in comparison to medical treatment in America. The current treatment for Chagas disease, Quinazolinone, does not cure the illness but rather suppresses the symptoms temporarily. Organic synthesis is a beneficial tool when creating derivatives in order to have the drug to function better. For this disease specifically, different derivatives are proposed not only in hope of finding a treatment but also adding to the general study of this tropical disease. The purpose is to successfully develop drugs that are specific in targeting this virus while also limiting additional side effects. By proposing forward syntheses with different side chain attachments, nine different quinazolinone derivatives were designed. This was done through a program called ChemDraw which allows the manipulation of chemical structures in 2D. Due to the global pandemic, development of the proposed derivatives was not possible, so research was done in order to hypothesize the best reactivity of different side chains. The reactivity of each derivative should be tested against the bacteria that is responsible for Chagas, *T. Cruzi*, in order to see how well it works against the illness and additional side effects.