**Introduction.**

- Chagas disease was first discovered in 1909 by Dr. Carlos Chagas
- A chronic, systemic, and parasitic infection caused by microorganism, *Trypanosoma cruzi* (*T. cruzi*)
- Affects more than 7 million people in Latin America
- Transmitted via blood transfusion, mother to infant, and most commonly by blood-sucking bugs of the subfamily *Triatominae*
- Bioactive quinazolinone 7 shows activity against *T. cruzi*
- Only two available treatments for Chagas disease; neither is effective for chronic phase

**Objective**

- Design a synthesis of bioactive quinazolinone 7 and derivatives bearing various amide and amine groups
- Design derivatives based on potential impact on compound reactivity, bioactivity, and commercial availability
- Compound will be evaluated for anti-parasitic activity against *T. cruzi* in collaboration with the Drugs for Neglected Diseases initiative (DNDi)

**Methods**

- Conducted literature search to design synthetic route
- Evaluated commercial availability of required starting materials and reagents for proposed derivatives
- Assessed safety concerns of each proposed reaction
- Proposed derivatives with varied amine and amide fragments
- Compounds will be characterized using techniques such as TLC, H-NMR, CNMR, IR, and MS

**Synthetic Approach**

**Figure 1.** Retrosynthesis of Bioactive Quinazolinone. Compound 2 and 4 will be varied.

**Figure 2.** Synthetic route for bioactive quinazolinone. Amide (red) and amine (blue) fragments will be varied to create different derivatives.

**Figure 3.** Nine Possible Combinations of Derivatives of Bioactive Quinazolinone based on proposed fragments.

**Future Directions:**

- Assess the efficacy of proposed synthetic route in the laboratory and revise, as necessary.
- Collaborate with external researchers through the DNDi to evaluate the activity of the synthesized compounds against *T. cruzi*

**References**


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