

Introduction

Chagas disease – Trypanosoma cruzi

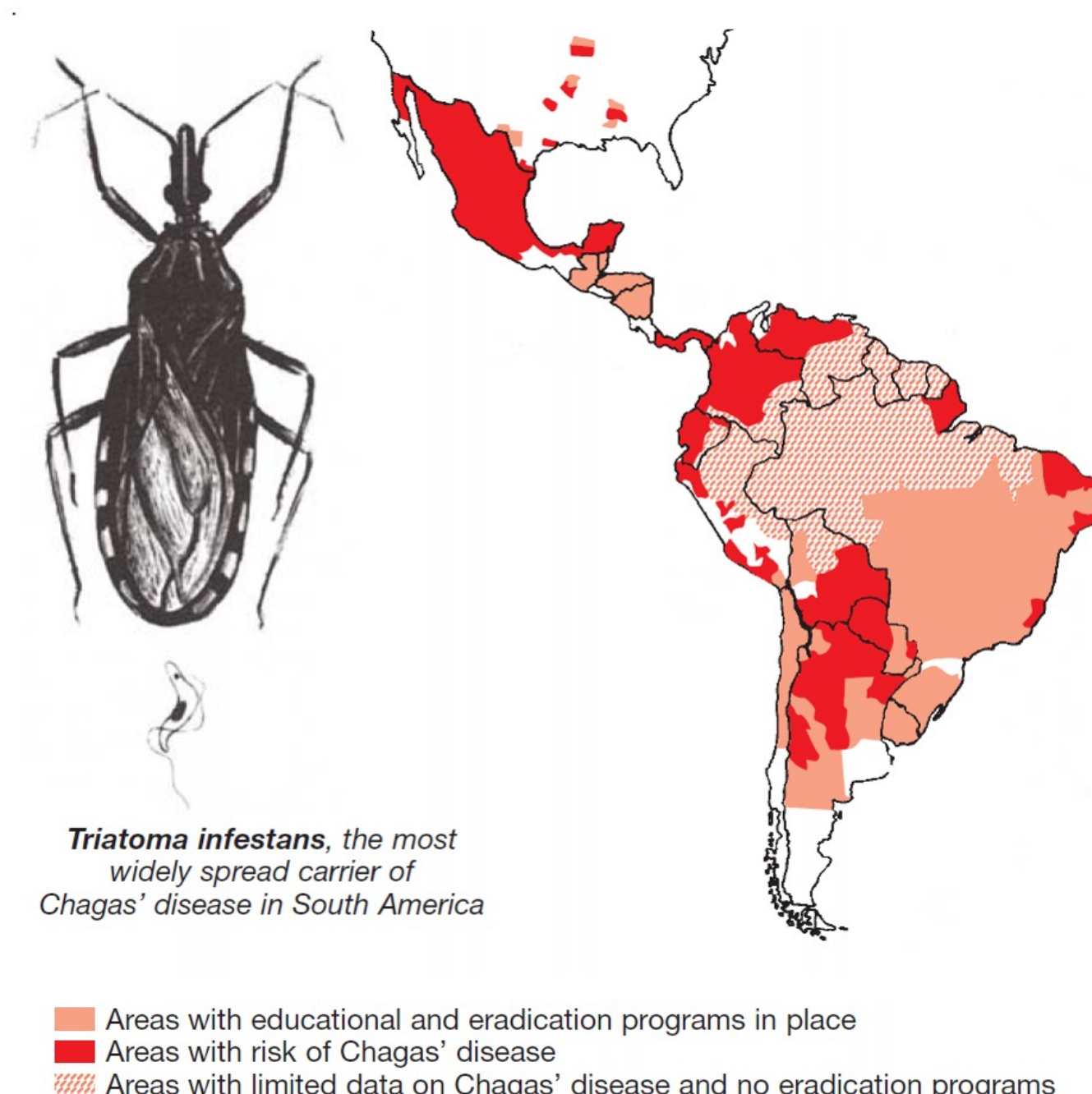
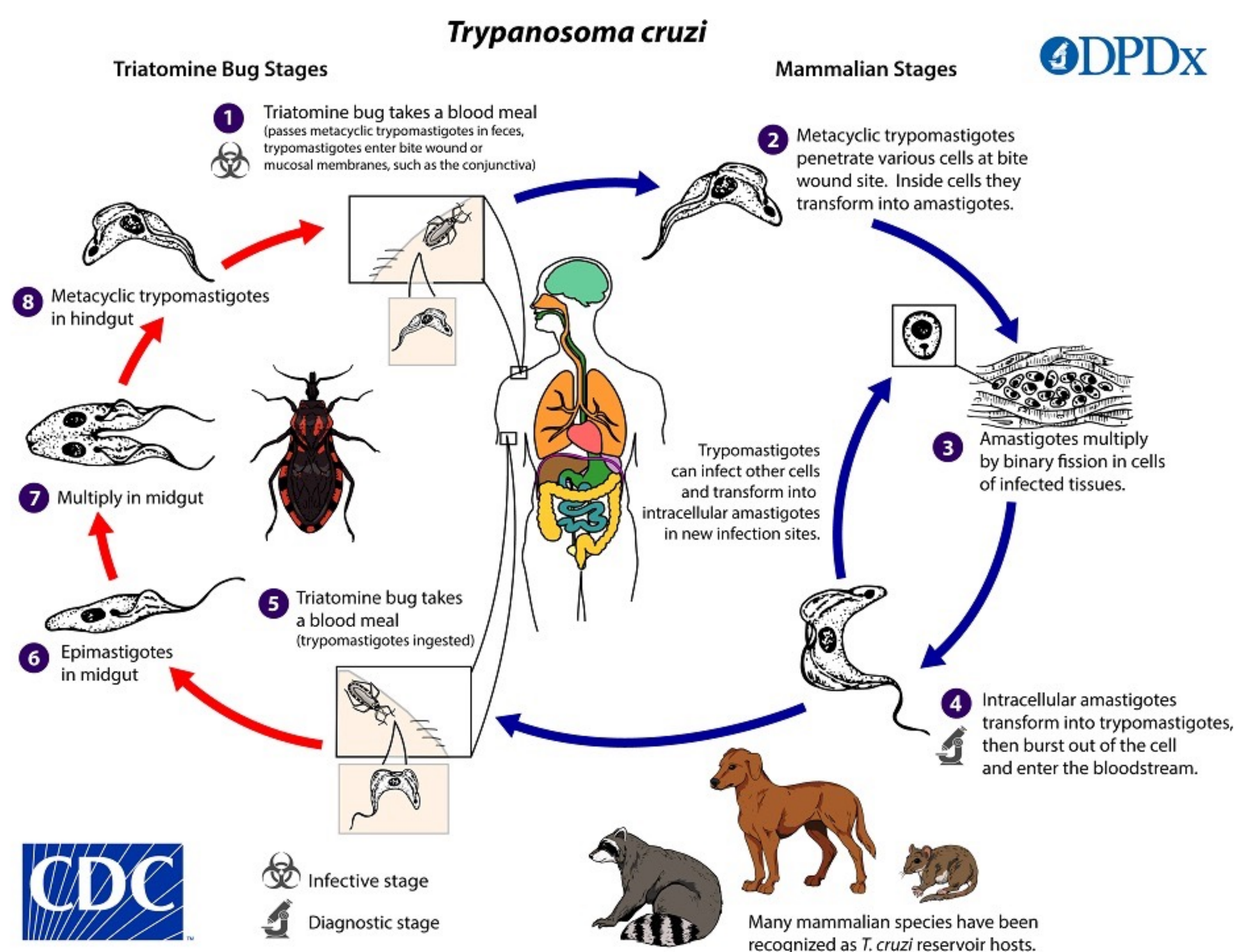


Figure 1: A map of where chagas is present as well as which areas have programs in place. Left is *T. cruzi* and the parasite that carries the disease.

Map source: PAHO

Currently 8 million people are affected by this disease. There is 2 treatments available, and they only treat acute patients. Acute symptoms include fever and swelling around bitten area. If left untreated the chronic symptoms include a megacolon, megaesophagus, and cardiomyopathy. Figure 2 (below): Transmission of the disease from parasite to human.



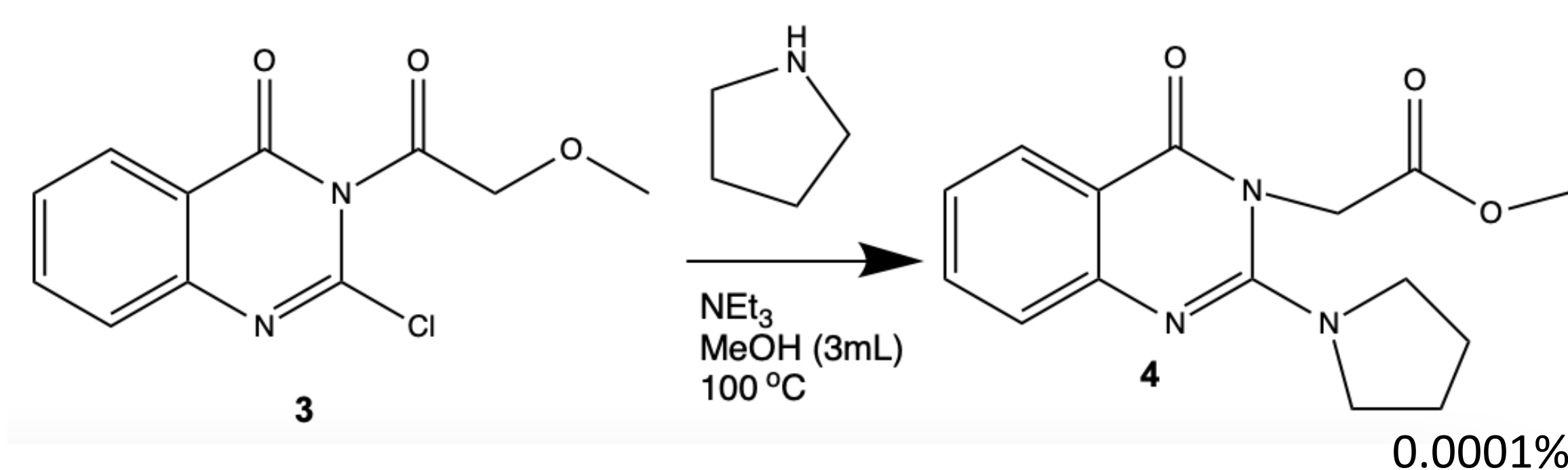
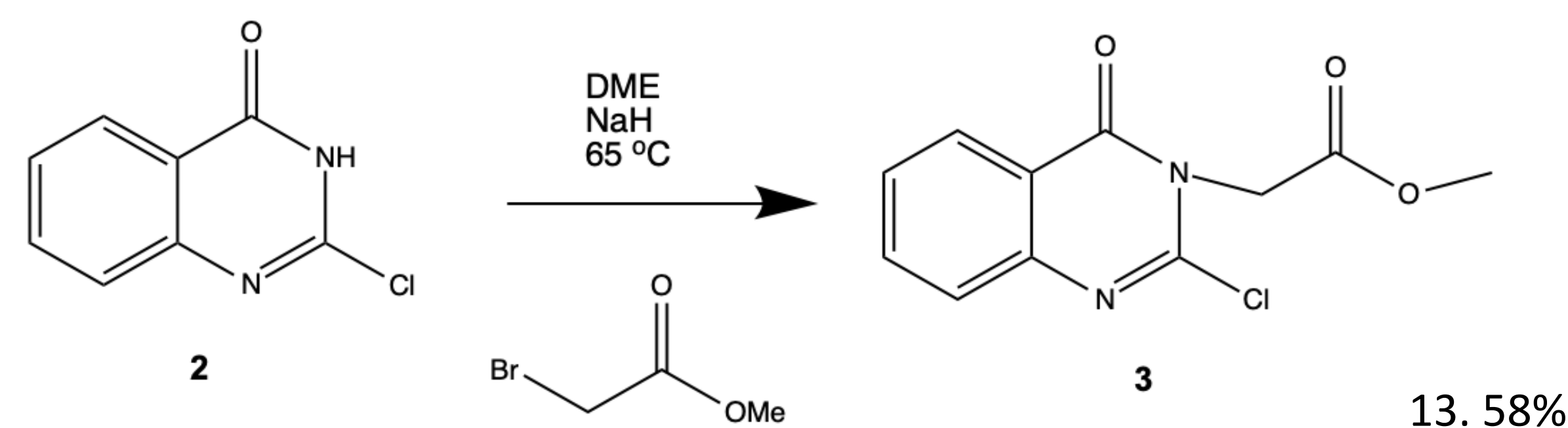
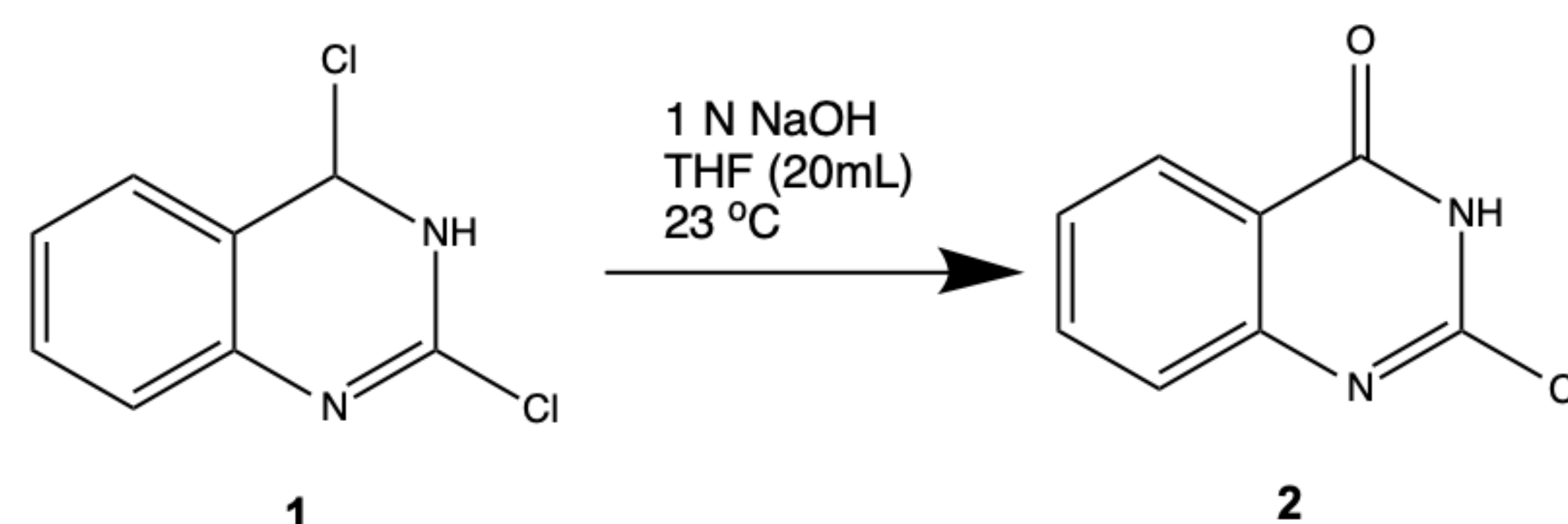
METHODS AND MATERIALS

Stage 1: Making quinazolinone

Stage 2: Alkylation

Stage 3: Amination

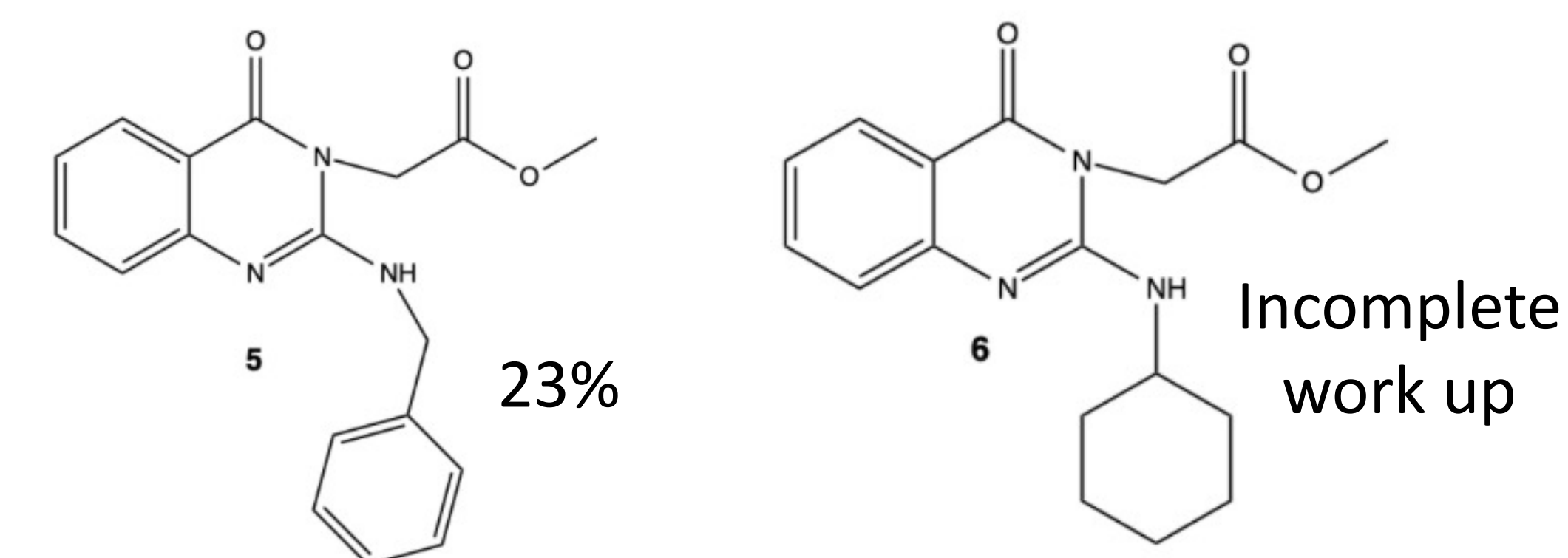
Amines used: Pyrrolidine, Benzylamine (5), Cyclohexylamine (6)



1: Precursor 2: Quinazolinone 3: Alkyl- Quinazolinone 4: Pyrrolidine

For amination, reagents were placed in a Schlenk bomb fitted flask, heated to 100 °C and stirred for approximately 3-6 hours. Thin layer chromatography were taken after an hour and then every 30 minutes until completion. H-NMR data indicated whether the desired product was created based on H resonance. We experimented with 3 different amines.

RESULTS



Although we have low yields, our work proved that we can create the expected product.

Future

- Optimize amination process
- Increase compound library
- More 1° vs. 2° amines
- Experiment with cyclic vs. acyclic amines
- Experiment with aromatic vs. aliphatic amines

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