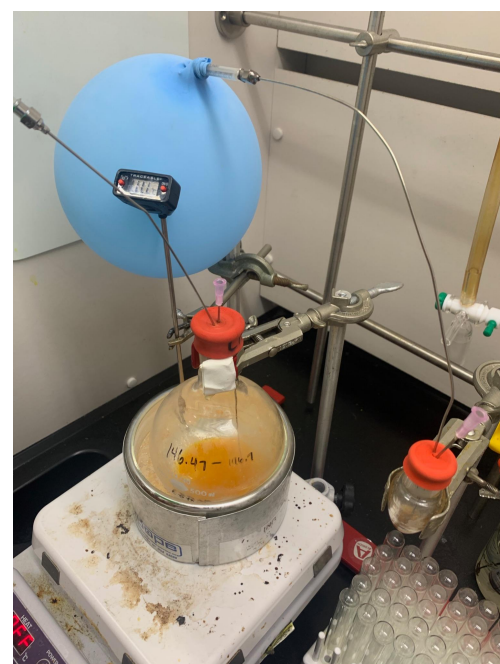


## End of Summer Report

This summer I set out with the goal of finishing the synthesis of a light activated chemotherapeutic. I planned to redesign the common chronic myeloid leukemia treatment that is Gleevec, common name Imatinib, and add an azo bond to it so that it can change conformations in the presence of specific light waves, turning on and off. This modification to Imatinib would make the drug active only where the cancer is present in the body, removing off-target side effects. Also, I set forth with the goal of bettering my skills in the organic chemistry lab as I hope to make this my career one day.

In terms of bettering my skills in the lab, I definitely achieved that goal. Going into the summer, I was very reliant on my advisor, Professor Craig Streu. I would ask questions every step of the way, and was very unsure about what to do in most scenarios. However, after this summer, I now only talk to Professor Streu in very unique scenarios, and I mostly just update him on what I plan to do or have already done. This summer has definitely prepared me well for a future career in this industry.

As for my project, I made great strides this summer! I not only completed most of the synthesis of my drug, Imatinib, but I also came close to finishing the synthesis of a past research student, Marah Ranger's, molecule which is a C-raf inhibitor involved in skin cancer. The synthesis for Imatinib was very successful for the first couple of steps, but the last couple steps are still a bit of a mystery as we did not receive very conclusive results from the NMR. A reaction flask for the second step of Azologue Imatinib is shown on the right. In the past, I was able to complete the third step of my synthesis, but those results have not been repeated since. This has led me to believe that the compounds



used in that reaction could have decomposed. Dr. Streu and I plan to continue to alter the conditions of this reaction in hopes of receiving good results and finishing the synthesis of my light activated chemotherapeutic, Imatinib.

This project has paved the way for me to write my honors thesis and has set me up for a successful research career. By doing summer research I am far closer to publishing my research and using that publication as a talking point when applying to graduate programs. I plan to present this research at Elkin Isaac as well as at an American Chemistry Society meeting this coming spring. Overall, this research has shown me that I would enjoy a career in this field, dedicating my life to cancer research.