



Medicinal Chemistry: Synthesizing a Cure for Malaria

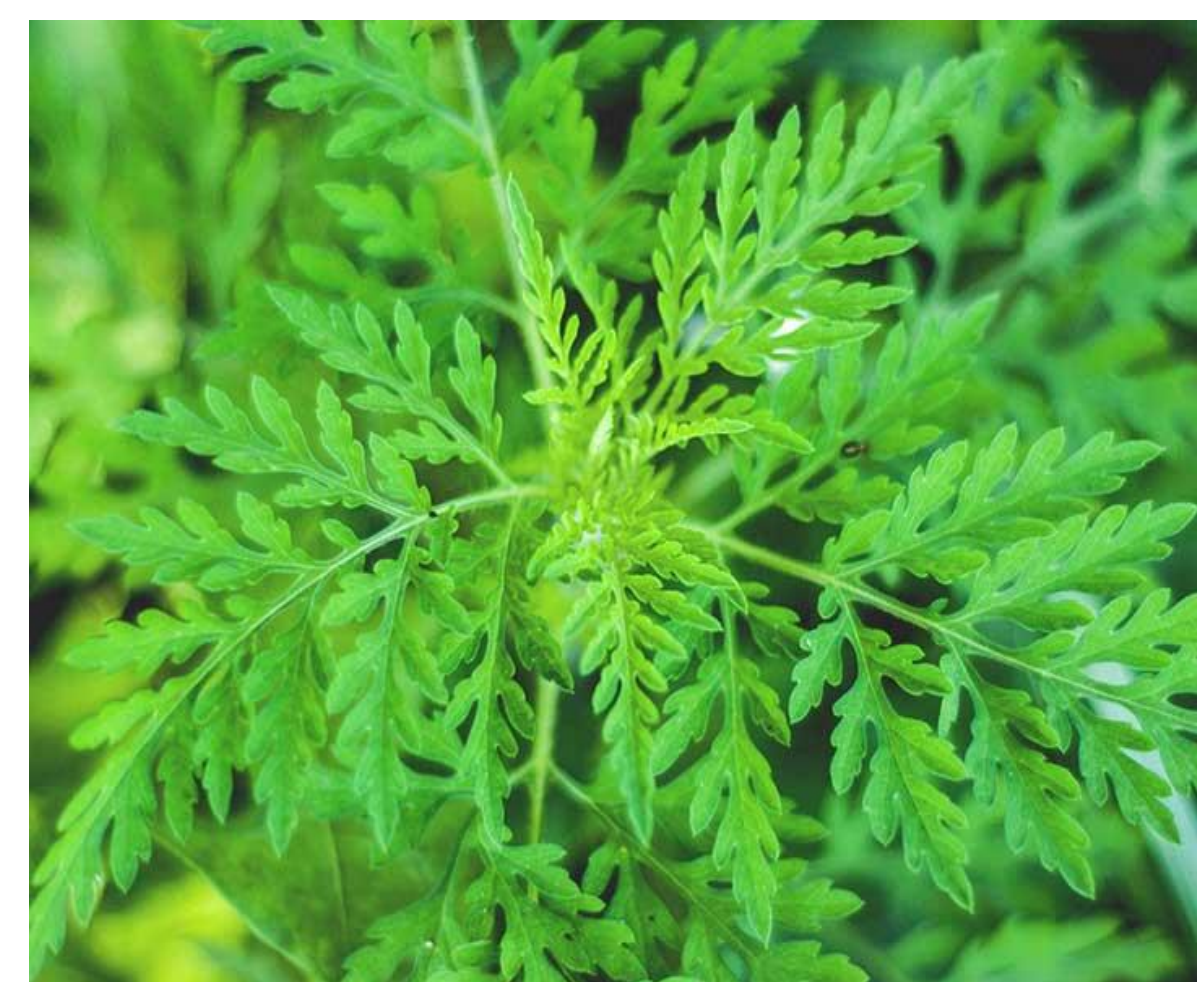
Ashley Bandfield, Biochemistry, 2020

Professional Development

SUMMARY

Over one million people die every year from malaria. In an effort to decrease the rising costs of treatments and make them more widely available, the Frantz lab and Southwest Research Institute have been working on a collaboration to develop methodology and synthesize the starting component of an artemisinin-based drug referred to as AMD.

I worked as a research assistant on this project where my responsibilities included taking the starting material and moving it through the synthesis of AMD. I worked on the isomerization, isolation, and purification of the allylic alcohol of AMD using various laboratory techniques including chromatography and nuclear magnetic resonance.



SPICES

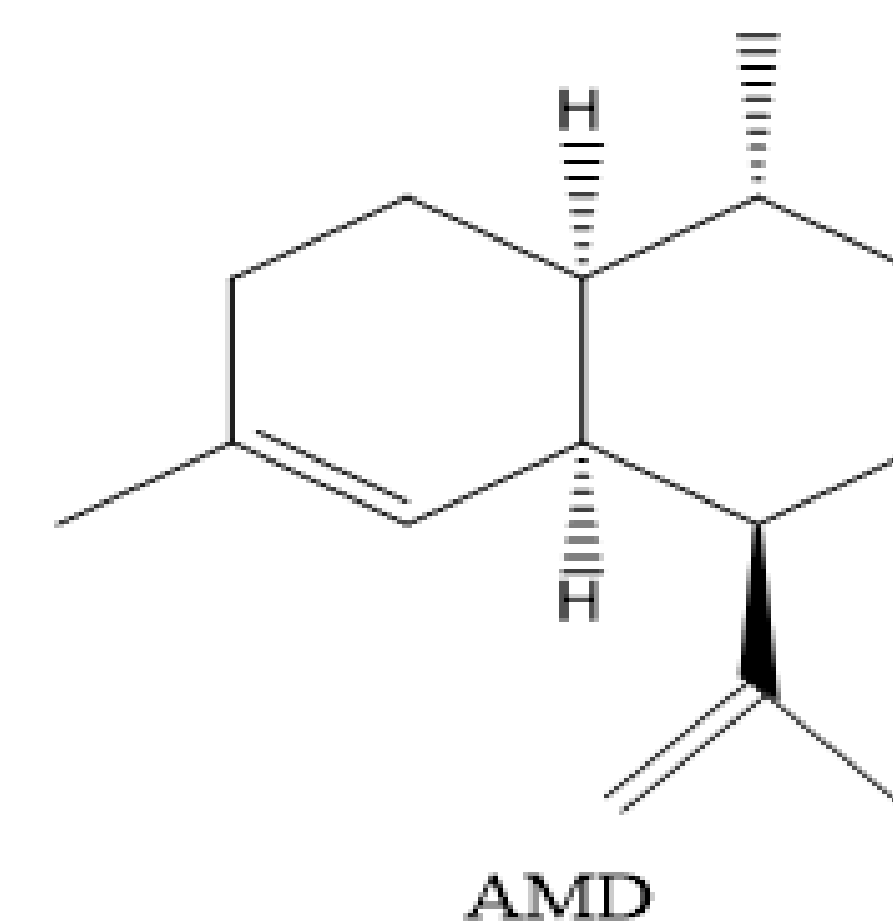
Working as part of a team of researchers has provided with me critical practical knowledge of how a laboratory operates and what equipment is used to conduct research at a professional level.

HERBS

The focus of this project was to help make anti-malaria treatments more readily available to those with limited financial resources.

LEARNING OUTCOMES

Throughout this entire experience, my critical thinking abilities were tested again and again. I had to learn how to be resilient when experiments did not produce the results that were desired. Something that I learned was a common occurrence in the laboratory, and found out how to adjust my methods, technique, or sometimes the conditions of the reactions in order to move forward to the next step.



IMPACT

Those who suffer from malaria will be impacted the most by our research. We aren't able to see the immediate results of our efforts, but we believe that by providing an alternative pathway, as compared to the limits of extracting compounds from the plant, that we can saturate the market and that this will drive prices of the medications down. I learned how research can be used to fight global issues indirectly.

ADVICE

Working in a research lab requires not only dedication to the project but passion. Being completely invested in your project is critical to its success.