Name(s)

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Project Number

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Project Title

Observing the Photoswitching Mechanism of Donor-Accepting Stenhouse Adduct (DASA) Molecules

Abstract

Objectives

Drugs are mostly unsafe when used in the body. As a drug travels around the body, it could damage parts of the body that do not need the drug. Our project aims to observe the effects DASA molecules have in carrying these drugs as an inert medium, to a site that requires the drug.

Methods

The DASA molecule MAF was dissolved in both water and 0.1 M NaCl. These were run in a spectrophotometer and we observed the effects its absorption over wavelength all over 2 and a half hours.

Results

When unexposed to light, the DASA molecule absorption spectra mostly stays the same, however when exposed to light, the DASA molecule would rapidly decrease in absorption, meaning a chemical reaction has taken place.

Conclusions

We can clearly observe the photoswitching effect in the DASA molecules in the absorption spectra of these molecules. Because of this, we can see how the difference in the two isomerized form of the DASA molecules explains how the light-instituted reaction causes a chemical reaction.

Summary Statement

Observing how the properties of photoswitching molecules can revolutionize and create new methods in effective, safer drug delivery.

Help Received

Lab equipment and materials provided by Bardeen Group, Dr. Christopher Bardeen at University of California, Riverside Chemistry Building.