

The Production of a Newsletter and Review Article

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Background

- Alkenes are a type of hydrocarbon compound that contain at least one Carbon-Carbon double bond.
- With the science newsletter, we hope to inspire students and give more recognition to the STEM fields. This newsletter will be the first one at CLU that only focuses on STEM fields.

Research Questions

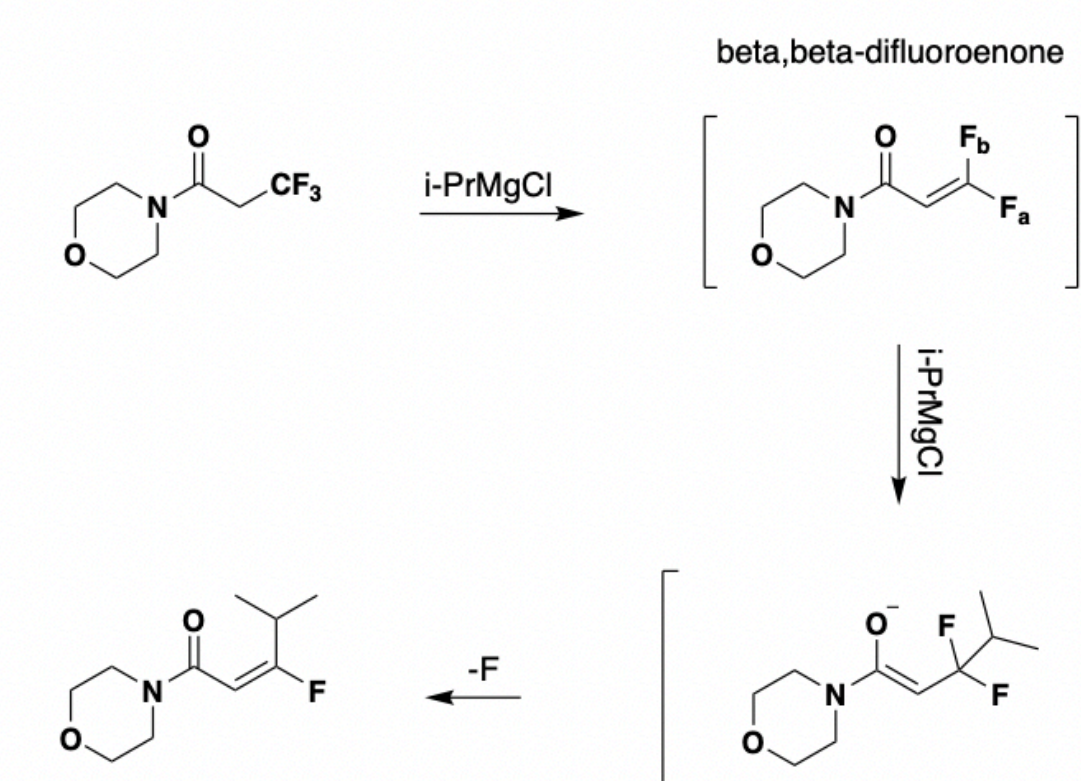
- What are the most recent reports on the synthesis of alkenes?
- Identify how many STEM research projects are being conducted at CLU?

Methods and Materials

- To start the alkenes research project, we conducted literature searches using Scifinder to locate the most recent reports in the synthesis of alkenes.
- Each week, we would meet with Dr. Squitieri's group from the University of Tampa to discuss and present the articles we analyzed.
- Once we have analyzed all the articles, we have to go back and edit each paper and organize them by category.
- To start the newsletter project, we compiled a list of professors at CLU that were possible conducting research in the STEM fields.
- Once we sent out emails and received responses, we began writing and editing the articles.

Stereochemical Explanation: The desired and major product was (E)- beta-fluoro-alpha,beta-unsaturated amides.

Mechanism:



Applications:

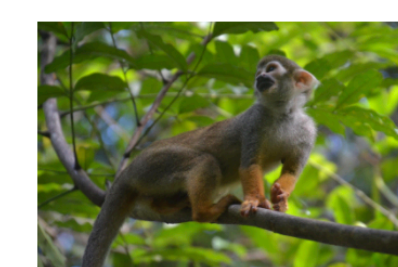
Summary: A method using a designed reagent that allows the production of (E)- beta-fluoro-alpha,beta-unsaturated amides using commercially available Grignard reagents, was developed. The designed reagent, morpholine 3,3,3-trifluoropropanamide, was found to produce the desired product in good yield. Morpholine 3,3,3-trifluoropropanamide is now commercially available and provides access to (E)- beta-fluoro-alpha,beta-unsaturated amides when common aryl, heteroaryl, and alkyl Grignard reagents are added. It was discussed that the formation of beta,beta-difluoroacrylamide is a likely mechanistic intermediate.

Analyzed paper including the mechanism and summary

Dr. Anita Stone is an Assistant Professor in the Biology department at California Lutheran University. She first began working at CLU in the Fall of 2016. She received her B.S./B.A. from Oberlin College with a major in Biology and a minor in Psychology. Dr. Stone followed up her B.S./B.A. with a Ph.D. in Ecology and Evolutionary Biology from the University of Illinois at Urbana-Champaign and Post-doctoral experience in Animal Behavior at the University of California Davis. She has 22 years of experience in the field of ecology, evolution, and behavior. During the years of 2015¹, 2016^{2,3}, 2017⁴, 2018⁵ and 2020⁶, Dr. Stone has published numerous scientific papers. She was also awarded *Outstanding Faculty Support Leadership, California Lutheran* in the year 2020.

Dr. Stone typically mentors 2 to 3 students per year (summer and academic). Her students have received fellowships from Swenson, Young and other OURCS programs. Due to COVID-19, Dr. Stone is currently not mentoring any students. Although, next year she will be taking up to 3 students to conduct research with her. Dr. Stone's research project topics include: 1) Reproductive ecology, 2) The "fattened male phenomenon", 3) Intragroup social structure, and 4) Social bonds and social behaviors within groups. Dr. Stone and her lab group study primate social behaviors, mating strategies and life history patterns within a population of squirrel monkeys. They have been monitoring this population of squirrel monkeys (pictured below) since 2000. Her research takes place in Eastern Amazonian Brazil where her and her lab group work alongside a colleague there. They use naturalistic observation and molecular ecology tools to study the monkeys' dispersal patterns and social structure.

The impact of the coronavirus put a hold on flying to Brazil and studying the monkeys this summer. Instead, she has been working on a publication and teaching summer school. Dr. Stone is collaborating with Dr. Chris Brown from the math department, and a colleague from Brazil for the publication. This publication is regarding two species of monkeys with different social systems. Dr. Stone is focusing on the female dominant monkey while her colleague in Brazil is focusing on the male dominant monkey.



Adult squirrel monkey at the field site



Juvenile squirrel monkey at the field site
(Photo credit: Claire Meuter)

Article on Dr. Anita Stone's research

Results

- The result of the alkenes project will be the publication of a review article that contains recent reports for the synthesis of alkenes.
- The result of the newsletter project will be the publication of a STEM newsletter in the fall at CLU.

Conclusions

- The alkenes review article is important because it gathers the most recent reports in the field as a way to facilitate the process of finding information and learning more about alkenes.
- The CLU newsletter is important because it will give recognition to the STEM fields. It will also highlight research opportunities in STEM and give students a way of looking into certain projects of their interest.

References

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