



Illinois Wesleyan University
Digital Commons @ IWU

John Wesley Powell Student Research
Conference

1991, 2nd Annual JWP Conference

Apr 27th, 12:00 PM - 4:30 PM

Reactions of Thiourea-S,S,S-Trioxides with β -Diketo Enolates

Milana Maletic

Illinois Wesleyan University

Judith J. Bischoff, Faculty Advisor

Illinois Wesleyan University

Follow this and additional works at: <https://digitalcommons.iwu.edu/jwprc>

Maletic, Milana and Bischoff, Faculty Advisor, Judith J., "Reactions of Thiourea-S,S,S-Trioxides with β -Diketo Enolates" (1991). *John Wesley Powell Student Research Conference*. 23.

<https://digitalcommons.iwu.edu/jwprc/1991/posters/23>

This Event is protected by copyright and/or related rights. It has been brought to you by Digital Commons @ IWU with permission from the rights-holder(s). You are free to use this material in any way that is permitted by the copyright and related rights legislation that applies to your use. For other uses you need to obtain permission from the rights-holder(s) directly, unless additional rights are indicated by a Creative Commons license in the record and/ or on the work itself. This material has been accepted for inclusion by faculty at Illinois Wesleyan University. For more information, please contact digitalcommons@iwu.edu.

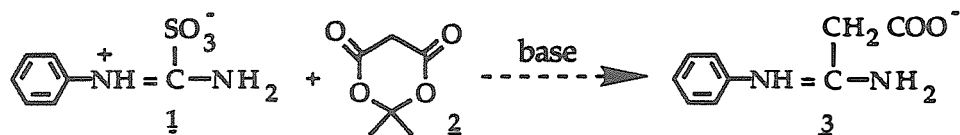
©Copyright is owned by the author of this document.

REACTIONS OF THIOUREA-S,S,S-TRIOXIDES

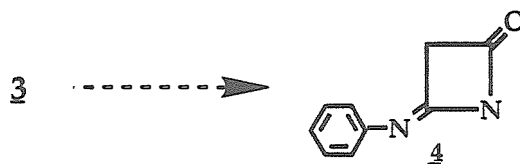
WITH β -DIKETO ENOLATES

Milana Maletic, Dept. of Chemistry, IWU, Judith J. Bischoff*

Aminoiminomethanesulfonic acid derivatives are susceptible to nucleophilic attack by amino acids to form stable guanidino acids. Thus N-phenylaminoiminomethanesulfonic acid, PAIMSO (1), and other thiourea-S,S,S-trioxides should also undergo nucleophilic addition reactions with enolates (e.g. Meldrum's acid (2) and diethylmalonate). This would provide a convenient route to the synthesis of N-substituted amidino acetic acids (3). These compounds are of particular interest because homologous amidino carboxylic acids have been shown to have antifungal activity.



Furthermore, it may be possible to effect intramolecular ring closure of 3 to form a β -lactam (4), which is the active functionality in penicillin and cephalosporin antibiotics.



We have attempted the nucleophilic addition reaction of Meldrum's acid and diethylmalonate with PAIMSO under a variety of conditions.