Homoconjugation in the Synthesis of Bicyclic Enamines

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The influence of homoconjugation in bicyclic aldehydes was studied by observing the formation of cis and trans isomers in enamines. Homoconjugation has been the reason for forming enamines and tertiary amines that otherwise would not form (A. Cook). Pyrrolidine, piperidine, morpholine, 5-norbornene-2-carboxaldehyde and norbornane-2-carboxaldehyde were the amines and aldehydes used in the study, respectively. Cis and trans isomers were yielded in reactions with 5-norbornene-2-carboxaldehyde and each amine; cis and trans isomers were also formed in the reactions with norbornane-2-carboxaldehyde and each amine. When present, homoconjugation in the bicyclic aldehyde changed the cis to trans isomer ratio in the enamine due to its stabilization properties.

Information about the Author:
My name is Michael Borchert. I am a junior chemistry major. After enjoying the first and second semesters of organic chemistry with Dr. Jantzi, summer research at VU seemed like a natural next step. Dr. Cook’s research was appealing because I had learned about each reaction in class, but not the concepts involved in his research. I plan on going to medical school after graduation to become a medical missionary.

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