Preparation of an Epoxide Precursor for Palladium-Catalyzed Trimethylenemethane Cycloaddition

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In order to produce a highly functionalized five-membered ring useful for further synthetic processes via palladium catalysis, a series of precursors need to be synthesized in order to form the epoxide used in cyclic formation. First, a trimethylsilane alcohol is synthesized from beta-methallyl alcohol. The alcohol will then be subjected to Swern oxidation conditions, forming a TMS aldehyde. The aldehyde prepared will then undergo epoxidation, forming the desired precursor for Palladium catalyzed cycloaddition. These reactions occur in good conversion, and a good amount of epoxide is being amassed for use in the palladium-catalyzed cycloaddition research.

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