Área: ORG

Alkylation of α-carbonyl sulfoxonium ylides

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Highlights

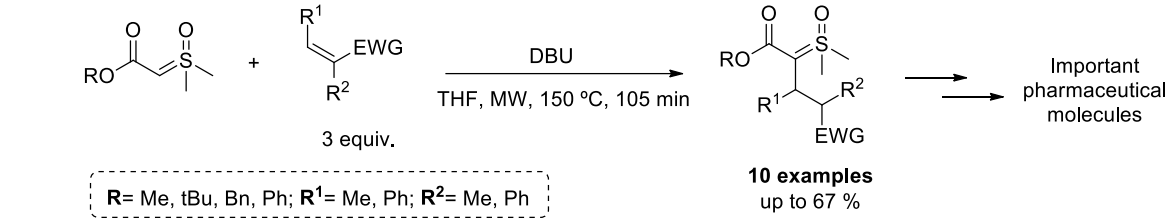
Evaluation of alkylating agents to obtain prochiral sulfoxonium ylides

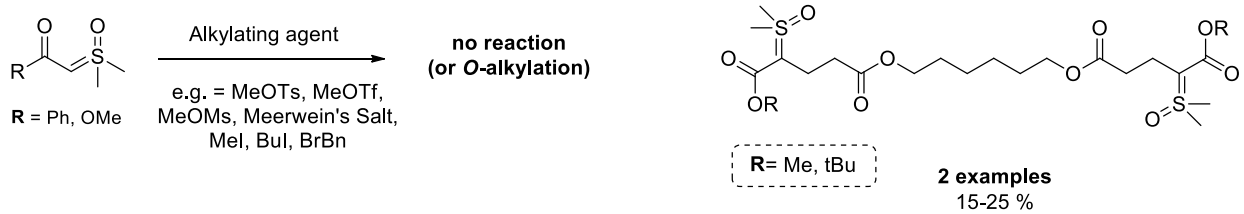
Synthesis of prochiral sulfoxonium ylides and sulfoxonium bis-ylides via Michael Additions

Abstract

Sulfur ylides represent an important synthetic tool for organic chemists since they are used as building blocks in total synthesis, in material chemistry, and in the production of drugs, for example. However, there is a great difficulty associated with the alkylation of these compounds, mainly of the stabilized ones, as is the case of the α-carbonyl sulfoxonium ylides. For this reason, obtaining prochiral sulfur ylides without the use of diazo compounds is still a synthetic challenge. No method describes the insertion of any group different from aryl and this limits the application of these important platforms.[1,2]

In this context, in order to obtain prochiral molecules, a series of alkylating agents were investigated, mainly those that have unreactive counterions, such as oxonium salts. However, this strategy was not effective, since *O*-alkylated products were obtained instead of *C*-alkylated ones. The only alkylating agent that showed a promising result was a hypervalent iodine reagent, which resulted in the product in 8 % yield. Furthermore, the synthesis of prochiral ylides via Michael Addition reaction was studied. In this case, 10 prochiral sulfoxonium ylides were obtained in 2-67 % yields. In addition, a diacrylate was used in the studied condition furnishing sulfoxonium bis-ylides in 15-25 % yields. Also, these bis-ylides were employed in S-H insertion reactions, providing the corresponding β-ester di-thioethers in 25-40 % yields.





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