

Alpha Carbonyl Functionalization from Sulfur Ylides and Diazo Compounds

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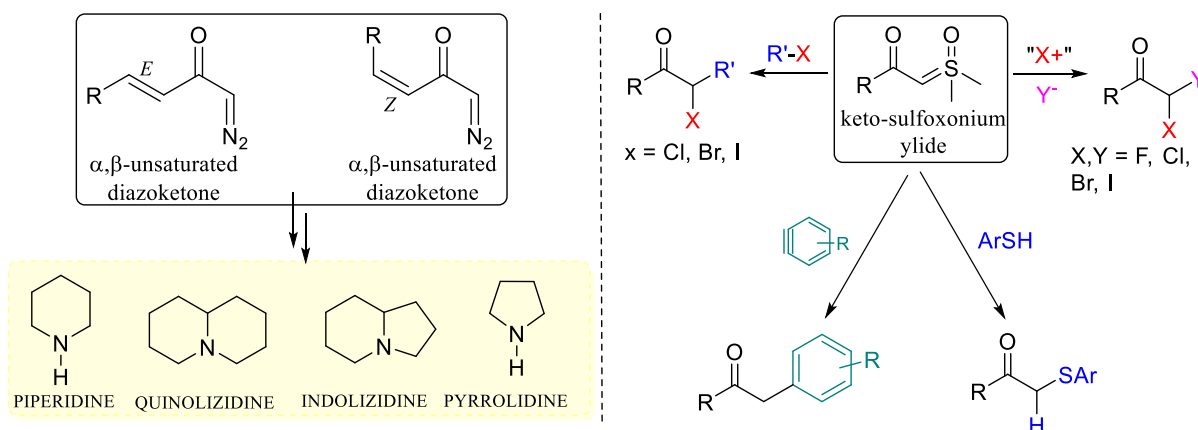
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ABSTRACT

In the last years we have been involved with the chemistry of diazo compounds and sulfur ylides, especially employing α,β -unsaturated diazoketones and β -keto Sulfoxonium ylides as key intermediates. Unsaturated diazoketones have proven to be very promising as multifunctional intermediates. Unfortunately, the classical methods to prepare saturated- or aryl-diazoketones are not suitable for preparing α,β -unsaturated diazoketones, since pyrazolines are formed. In recent years, our research group developed two new Horner-Wadsworth-Emmons reagents that could be easily applied in the one-step preparation of α,β -unsaturated diazoketones from aldehydes. Not only were we able to selectively synthesize *E*- and *Z*-unsaturated diazoketones, but also to employ these useful platforms in the short and asymmetric synthesis of several nitrogen and oxygen heterocycles such as indolizidines, quinolizidines, piperidines, pyrrolidines and furanones¹. In the case of sulfur ylides, surrogates of diazocarbonyl compounds, we were able to perform new transformations that are not easy or efficient using diazo chemistry. The α,α -dihalogenation and alkyl-halogenation, aryne addition, and reaction with aryl-thiols are some of the transformations from these sulfur ylides that will be discussed, furnishing several α -functionalized carbonyl compounds^{2,3}.

GRAPHICAL ABSTRACT



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REFERENCES

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