A Novel Methodology to Access a Wide Range of Chiral Amines

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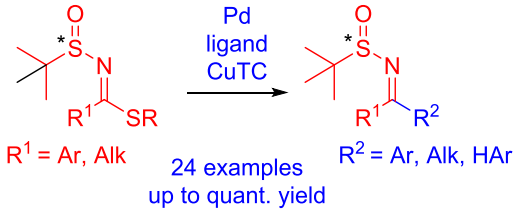
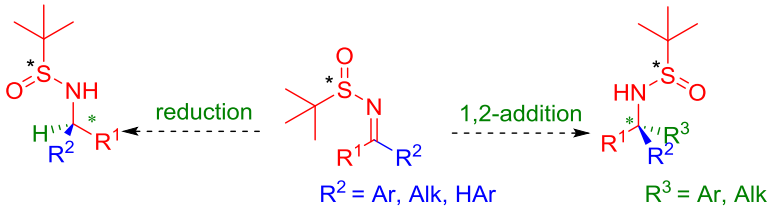
In the laboratory a new tool has been recently developed: sulfinyl thioimidate.[1] This family of molecule can easily be synthesized starting from commercially available esters, via the synthesis of thionoesters. We have demonstrated that these sulfinyl thioimidates are good partners in Liebeskind Srogl type cross coupling reactions to providing a wide range of sulfinyl imines with excellent yields (Scheme 1).[1]



Scheme 1: Unprecedented Liebeskind-Srogl-type cross coupling reactions

Next, we could employ the sulfinyl ketimines in reduction[2] and organometallic additions[3] to investigate the substrate generality in our methodology, which could result to obtaining potentially very valuable chiral amines present in many natural products and bioactive compounds. A range of reduction reactions of sulfinyl imines as well as 1.2-additions of organometallic reagents onto sulfinyl imines substrates will be presented (Scheme 2).[4]



Scheme 2: Reduction and organometallic additions onto sulfinyl thioimidates

References

[1] L. Crespin, *Synthèse totale d'alcaloïdes de type Lycorine par méthathèse tandem*, Université Grenoble Alpes, defended October 19th **2015**, under supervision of Dr S. Carret and Prof. J. –F. Poisson.
[2] *Application of chiral sulfinamides into formation and reduction of sulfinylketimines to obtain valuable α-Chiral Primary Amines.* C. Achuenu, S. Carret, J. –F Poisson, F. Berthiol, *Eur. J. Org. Chem.***2020**, 5901.
[3] *1,2-Additions on chiral N-sulfinylketimines: an easy access to chiral α-tertiary amines*, C. Achuenu, S. Carret, J. –F Poisson, F. Berthiol, *accepted.*
[4] C. Achuenu, S. Carret, J. –F Poisson, F. Berthiol, *unpublished results.*