

Tackling the catalytic, enantioselective 1,2-addition of Grignard reagents to ketimines

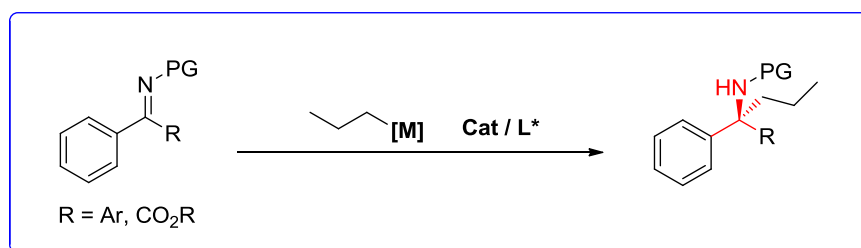
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Chiral amines are ubiquitous scaffolds in organic chemistry. Amines bearing an α -tetrasubstituted chiral carbon center, often named α -quaternary amines, are an important subclass of these compounds and are the subject of intensive studies.

They can be accessed by a variety of ways, one of the most versatile ones being perhaps the use of organometallic reagents on unsaturated $C=N$ bonds. However, the current methods to perform these transformations could benefit greatly from the versatility offered by organomagnesium reagents, and a powerful, enantioselective catalytic system.

In this context, we embarked on the development of a suitable, copper-catalyzed method to stereoselectively functionalize ketimines with Grignard reagents. Owing to our group's expertise in 1,2-additions to carbonyl compounds,¹ we aim at tackling the functionalization of ketimines with a Cu(I)/chiral ligand-based catalytic system.



These imines represent a challenge in reactivity, chemo-, and stereoselectivity. This poster will summarize our current understanding of these reactions, and will show why parallels with the parent ketone chemistry can be misleading.

1. a) Madduri, A. V. R. ; Harutyunyan, S. R. ; Minaard, A. J. *Angew. Chem. Int. Ed.* **2012**, *51*, 3164;
b) Madduri, A. V. R. ; Minaard, A. J. ; Harutyunyan, S. R. *Chem. Commun.*, **2012**, *48*, 1478