

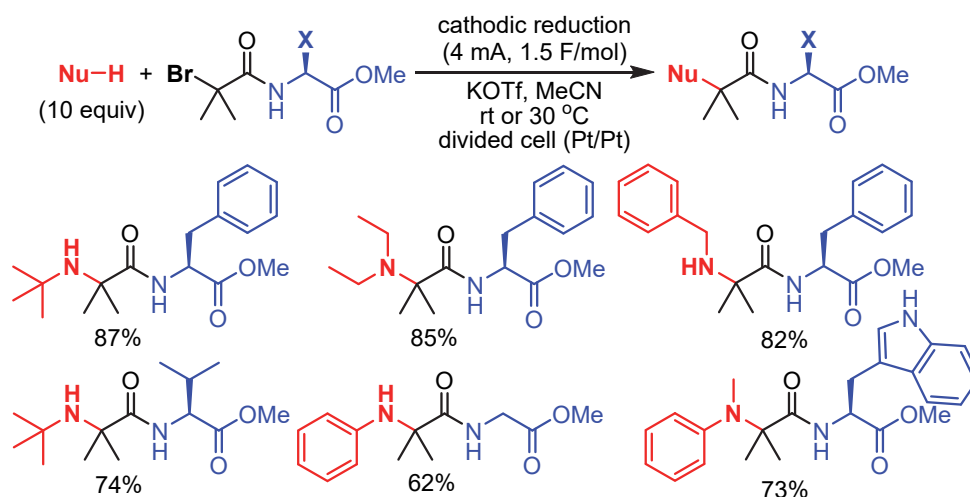
Formation of Sterically Congested C-N bonds by Electrochemical Reductive Coupling of Amines and α -Bromo Carboxamides

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Keywords: Electrochemical Reduction; Amines; α -Bromo Carboxamides; Formation of C-N bonds; Steric Congestion

Nucleophilic substitution of alkyl halides with amines is a conventional method to prepare alkyl amines; however, synthesis of congested bulky amines is still difficult. Copper-catalyzed amination reaction is a powerful method to construct hindered C–N bonds at room temperature from α -bromo carboxamides.¹ Recently, cesium carbonate enabled formation of congested C–O bonds from α -bromo carboxamides, and the hindered ethers were obtained under the electrochemical reductive conditions as well.²

Inspired by these previous works, we investigated electrochemical substitution of α -bromo carboxamides with amines as nucleophiles to prepare sterically demanding amines at ambient temperature. After optimization of parameters of the electrochemical reaction a variety of α -bromo carboxamides, which can be easily prepared by condensation with amino acids, coupled with primary and secondary amines to afford congested bulky amines in reasonable yields. In this oral presentation further scope and limitation of the method will be discussed in detail.



1) S. Ishida, K. Takeuchi, N. Taniyama, Y. Sunada, T. Nishikata, *Angew. Chem. Int. Ed.* **2017**, *56*, 11610. 2) G. Hirata, K. Takeuchi, Y. Shimoharai, M. Sumimoto, H. Kaizawa, T. Nokami, T. Koike, M. Abe, E. Shirakawa, T. Nishikata, *Angew. Chem. Int. Ed.* **2021**, *60*, 4329.