

Sustainable Synthesis of Propargylamines and Diverse Transformations

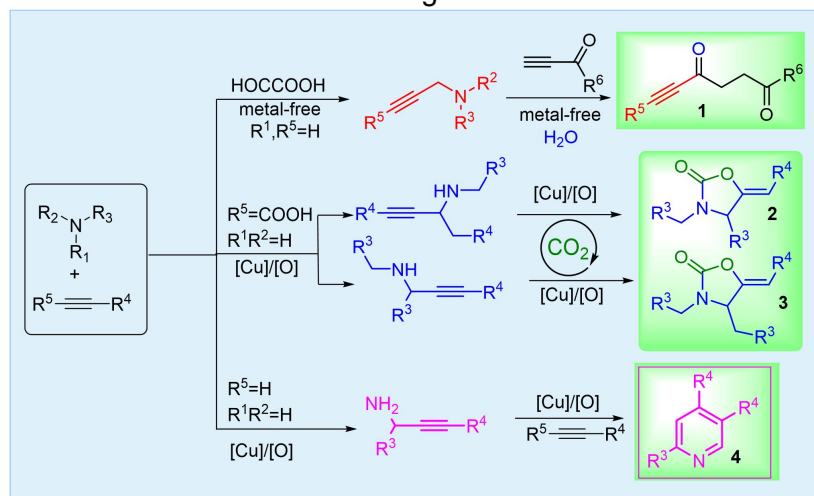
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Inert chemical bond cleavage and functionalization reactions provide expedient synthetic routes and are fundamental in modern organic synthesis.^[1] The C – N bond, typically considered to be rather inert due to high bond dissociation energies and poor leaving group ability, is widely present in many natural products, small molecule drugs, and organic functional materials.^[2-3] Therefore, how to effectively control the cleavage of C–N bonds to synthesize structurally diverse compounds, has always been a central topic in organic chemistry. Recently, great progress has been achieved in the field of deaminative cross-coupling reactions.^[4] However, the use of alkylamines as electrophiles in deaminative cross-coupling has been less examined, only using allylamine substrates. In this direction, our continuous efforts involve the development of novel strategies for the sustainable synthesis of propargylamines and their transformation reactions. Through understanding their mechanisms, exploring reaction conditions, and assessing the scope and limitations of these transformations, we have expanded the synthesis of complex linear compounds and heterocycles. Simultaneously, we are paving the way for the future conversion of tertiary amines and the construction of valuable building blocks.



Scheme 1: Construction of propargylamine and diversity transformation

Reference

- [1] Y. Xie, L. Huang, H. Feng, *Green Chem.*, **2022**, 24, 1978-1982.
- [2] Y. Xie, L. Huang, H. Feng, E. V. Van der Eycken, *Org. Lett.*, **2022**, 24, 6346-6350.
- [3] Y. Xie, L. Huang, H. Feng, *J. Org. Chem.*, **2021**, 86, 16940-16947.
- [4] X. Xu, H. Feng, E. V. Van der Eycken, *Org. Lett.*, **2021**, 23, 6578-6582.