Lewis Base Catalysed Synthesis of Organic Iodides Enables Efficient Nucleophilic Substitutions

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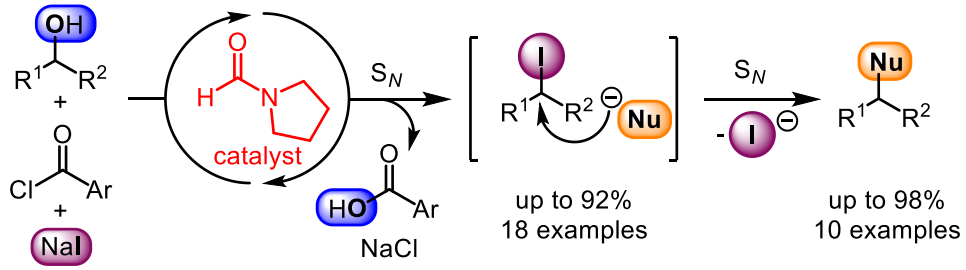
Substitution reactions account to the most essential and frequently applied transformations in chemistry. However, they are typically associated with the generation of unfavourable waste amounts and are therefore restricted by a poor sustainability and cost-efficiency.[1] To address these major challenges, we are committed towards the development of novel catalytic methods for nucleophilic substitutions (S_N).[2] *Lewis* base catalysts, in particular formamides, allow for the creation of new bonds under mild conditions harnessing inexpensive commodity chemicals, like benzoyl chloride and derivatives.[3-7]

Despite of one report with a few examples of C-I bond formation, these protocols have mostly been limited to C-Cl and C-Br bond creation, although the excellent nucleofugality of iodide renders organic iodides highly desirable synthetic intermediates.[8-9] Therefore, we herein disclose a facile organocatalytic variant of the famous Finkelstein reaction[10] for the forging of new C-I bonds. With 2,6-dichlorobenzoylchloride and NaI as optimal reagents for iodination, a broad substrate scope consisting of various benzylic, allylic, propargylic and aliphatic alcohols with acid sensitive functions has been successfully implemented. Furthermore, the reactivity of the organic iodides towards carbon nucleophiles, such as CH-acidic compounds, was exploited.



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