COPPER CATALYSED AND ADDITIVE FREE DECARBOXYLATIVE TRIFLUOROMETHYLATION OF (HETERO)AROMATIC IODIDES

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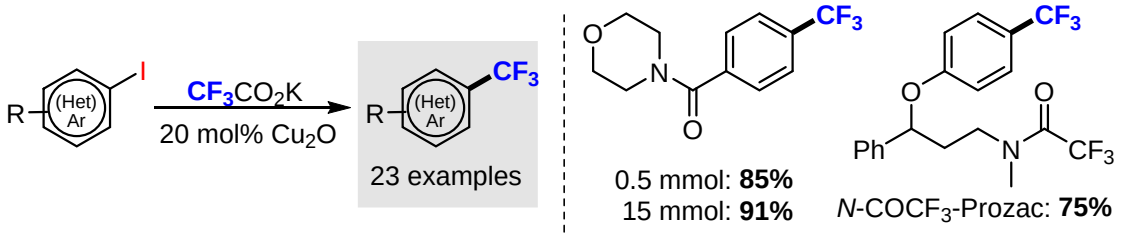
The trifluoromethyl group is an important functionality that can be found in many pharmaceuticals and agrochemicals, being strategically installed to fine-tune metabolic and chemical properties of these bioactive molecules. However, the incorporation of the trifluoromethyl group in aromatic compounds is often costly in fluorinating agents or requires the use of (super)stoichiometric transition metals.

In this work, we have developed a copper catalysed decarboxylative trifluoromethylation of (hetero)aromatic iodides operating in the absence of ligands and specialized additives. The protocol takes advantage of copper(I) oxide, being an atom economical, cost effective and readily available copper source, in the presence of potassium trifluoroacetate. The reaction could successfully be scaled up from 0.5 mmol to 15 mmol, also resulting in an increased isolated yield. Finally, late-stage installation of the trifluoromethyl functionality afforded the *N*-trifluoroacetamide variant of the antidepressant agent, Prozac, demonstrating the applicability of the developed protocol [1].



• Good functional group tolerance • Low cost fluorine source
• No ligands or additives • Successful scale-up

[1] M. B. Johansen, A. T. Lindardt. Manuscript in preparation.