Enabling organic synthesis with uncommon diazo compounds

Feb 21th Tuesday 11am-12pm
F7B 322 (CBMS Tea Room)

Synopsis

Ethyl diazoacetate is one of the best-studied acceptor-substituted diazo compounds since its first description in 1883 by Curtius and a commonly used reagent in organic synthesis.[1a] The closely related diazo acetonitrile was described by Curtius in 1898, but only found very little application. Similarly, trifluorodiazoethane is known since 1943[2a] and only in the past decade found application in organic synthesis. The corresponding difluoro diazoethane was first described in 2015 by Mykahiliuk. These diazo compounds represent powerful reagents for chemical synthesis. Herein, we report on enabling tools to access difluoro diazoethane and diazo acetonitrile. We describe differences in chemical reactivity between these diazo compounds, which result in technology- and chemistry-driven approaches for scalable and safe applications of these diazo compounds. We probed these protocols on their robustness in cycloaddition reactions yielding heterocycles and carbocycles with unprecedented efficiency.

Representative Publications


