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Enantioselective functionalization of β-trifluoromethyl β-disubstituted Michael acceptors

The development of highly effective, mild, and catalytic transformations for the construction of carbon−carbon or carbon-heteroatom bonds is an appealing and demanding topic in asymmetric synthesis. An asymmetric Michael type addition is often used in the synthesis of compounds with a stereogenic center in the β position. A particularly difficult and poorly described variant of this reaction is the addition to the β,β-disubstituted Michael acceptors in which the quaternary stereogenic center are obtained. The development of efficient methods for the construction of all-carbon quaternary stereocenters bearing a CF_3 group is of great significance. The incorporation of a trifluoromethyl group into organic molecules allows to efficiently improve chemical and metabolic stability, lipophilicity, and binding selectivity, resulting in unique bioactive properties. Thus trifluoromethyl group containing compounds are widespread in pharmaceuticals, agrochemical products and materials.

In my presentation I will show literature examples of enantioselective Michael addition to β-trifluoro-β-disubstituted compounds and results of my research.