Hypervalent Iodine-Mediated a-Arylation of Glycine Schiff Base

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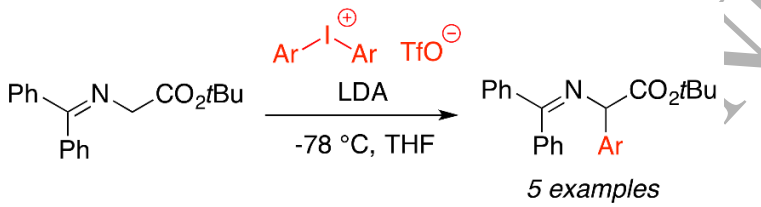
Abstract

The α-arylation of glycine Schiff base with diaryliodonium triflates under basic conditions was investigated. We succeeded in providing a first proof of concept for this transformation and accessed five differently substituted products in low to good yields. These products have been characterized with state of the art NMR and MS methods.

Graphical abstract



Keywords: Amino Acids, Hypervalent Iodine Reagents, Arylation

Specifications Table *[please fill in right-hand column of the table below]*

Subject area	*Organic Chemistry*
Compounds	*α-Arylated Glycine Schiffbases*
Data category	*Synthesis Protocol, Analysis*
Data acquisition format	*NMR, Mass spectra, IR*
Data type	*analyzed*
Procedure	*α-Arylation of glycine Schiffbase using hypervalent iodine-based aryl transfer reagents*

Rationale

The synthesis of α-arylated α-amino acids is an important task and a variety of different approaches like transition metal catalyzed enolate-sp^2 couplings [1,2] or phase-transfer catalyzed enolate S_NAr-type reactions [3,4] have been reported in the past. Hypervalent iodine-based electrophilic transfer reagents have become increasingly important for numerous applications over the course of the last years [5,6] and recently an elegant racemic arylation of α-amino acid-based azlactones with diaryliodonium reagents has been reported [7]. Based on our interest in the reaction of prochiral nucleophiles with hypervalent iodine reagents [8] and the use of simple glycine Schiff bases for (asymmetric) C-C-bond