

Poster Presentation
Inter-Disciplinary Explorations in Chemistry (I-DEC 2018)

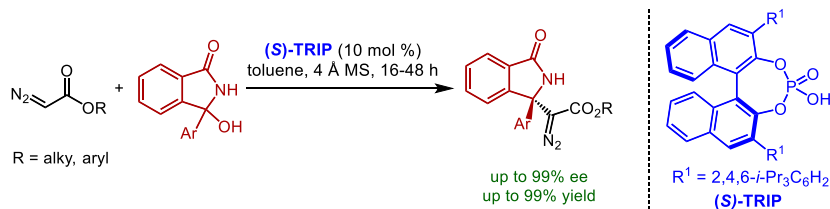
"Chiral Phosphoric Acid Catalyzed Addition of Diazo Esters to *N*-Acyl Ketimines: An Access to Enantioenriched Isoindolinones"

Milon M. Sadhu, Rajshekhar A. Unhale, Sumit K. Ray, Rayhan G. Biswas, Vinod K. Singh*
Department of Chemistry, IISER Bhopal, Bhauri, Bhopal 462 066, Madhya Pradesh
(E-mail: milon16@iiserb.ac.in)

Abstract: Isoindolinones are an interesting class of heterocyclic compounds with a wide range of biological activities. This structural scaffold is found in numerous natural products and pharmaceuticals. On the other hand, diazo compounds are important building blocks and widely used in synthetic organic chemistry due to the high energy and diverse reactivity of the diazo group. Therefore, efficient synthesis of chiral diazo compounds embedded with isoindolinone motif would be interesting in the context of drug discovery.

In conjunction with our recent efforts to develop chiral phosphoric acids catalysed enantioselective synthesis of 3-substituted isoindolinones, herein, we have developed chiral phosphoric acid catalyzed nucleophilic addition of diazo esters to the *in situ* generated *N*-acyl ketimines derived from 3-aryl-3-hydroxy isoindolinones. The reaction proceeds smoothly at ambient temperature with a broad range of diazo esters and 3-hydroxyisoindolinones to furnish enantioenriched desired isoindolinones in high yields (up to 99%) with remarkably high enantioselectivity (up to 99% ee). The products obtained in this methodology have been converted to various synthetically useful intermediates by exploiting the reactivity of diazo group.

Figure/Scheme:



Scheme 1: Synthesis of chiral isoindolinone and isoindolinonetriazoles derivatives

References and Notes:

1. Speck, K.; Magauer, T. *Beilstein J. Org. Chem.* **2013**, 9, 2048.
2. Uraguchi, D.; Sorimachi, K.; Terada, M. *J. Am. Chem. Soc.* **2005**, 127, 9360.
3. Unhale, R. A.; Molleti, N.; Rana, N. K.; Dhanasekaran, S.; Bhandary, S.; Singh, V. K. *Tetrahedron Lett.* **2017**, 58, 145.