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 Asymmetric Phosphoric Acid-Catalyzed Four-Component Ugi Reaction
Science **2018**, DOI: 10.1126/science.aas8707.

Asymmetric Phosphoric Acid Catalyzed Four-Component Ugi Reaction

Category

Organo- and Biocatalysis

Key words

Ugi reaction

acylamino amides

chiral phosphoric acids

Synfact
of the month

Significance: The Houk and Tan groups report an asymmetric phosphoric acid catalyzed Ugi reaction furnishing α-aminoacylaminoamides from four achiral building blocks in excellent yields and high enantioselectivities. DFT calculations support imine activation accomplished by phosphoric acid carboxylic acid heterodimer catalysis through a bifunctional activation mode.

SYNFACTS Contributors: Benjamin List, Oleg Grossmann
 Synfacts 2018, 14(12), 1297 Published online: 19.11.2018
 DOI: 10.1055/s-0037-1611332; Reg-No.: B10018SF

Comment: Asymmetric Ugi reactions, which are highly atom- and step-economical transformations, remain challenging partially due to the requirement of suppressing the Passerini reaction. The authors have developed two chiral phosphoric acids, based on STRIP (I. Čorić, S. Müller, B. List *J. Am. Chem. Soc.* **2010**, 132, 17370) that fully suppress the Passerini reaction while providing a broad substrate scope.