Carbonyl-Catalyzed Biomimetic Asymmetric Mannich Reaction

Significance: The Zhao group reports the activation of primary amines by carbonyls. Using an N-quaternized pyridoxal catalyst for the direct asymmetric Mannich reaction of glycinate with aryl N-diphenylphosphinyl imines, α,β-diamino acid esters were obtained in good yields and excellent stereoselectivities.

Comment: Based on their recently developed chiral pyridoxal and pyridoxamine catalysts for transamination reactions (*J. Am. Chem. Soc.* 2016, 138, 10730), the authors developed a catalyst that activates primary amines through carbonyl catalysis. In contrast to other α-functionalizations of primary amines, this fascinating catalysis strategy does not require protecting-group manipulation.

**Key words**
carbonyl catalysis
Mannich reaction
pyridoxal
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**Organic- and Biocatalysis**

**Category**

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