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SYNFACTS Highlights in Chemical Synthesis

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ISSN 1861-1958

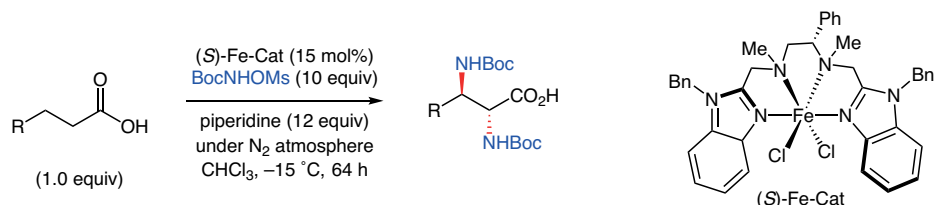
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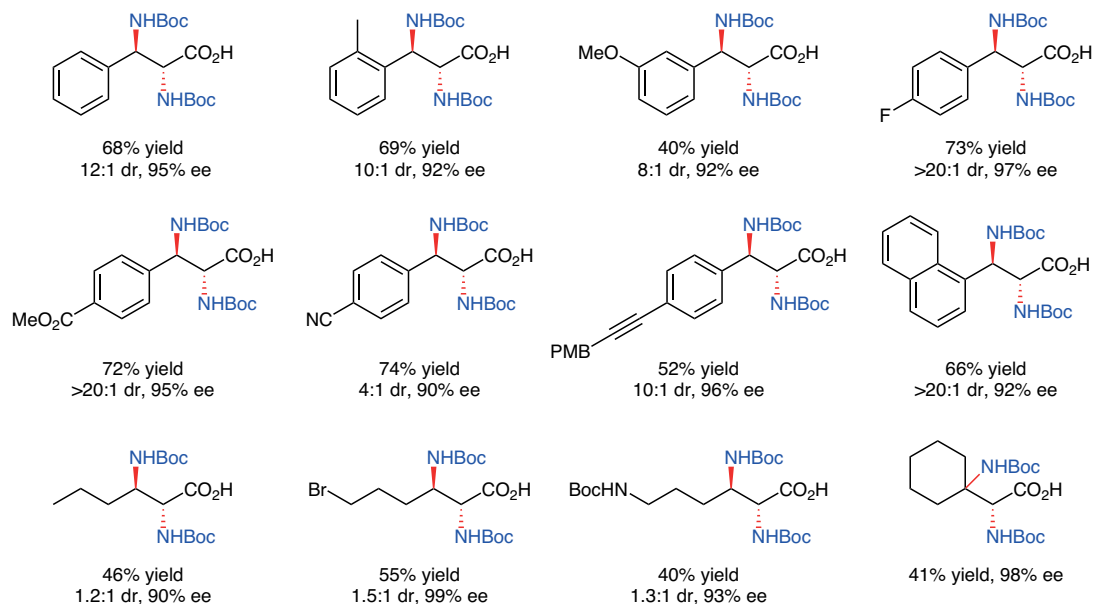
Asymmetric Iron-Catalyzed Vicinal C(sp³)-H Diamination of Carboxylic Acids

Angew. Chem. Int. Ed. **2026**, 65, e4041858, DOI: 10.1002/anie.4041858

Asymmetric Iron Catalysis for the Synthesis of α,β -Diamino Acids



Selected examples:



Significance: α,β -Diamino acids and their derivatives, such as esters and amides, have attracted a great deal of attention in the field of organic synthesis and peptide drug discovery. In this article, the authors developed a chiral tetradentate N₄-ligand Fe(II) catalyst for the asymmetric synthesis of α,β -diamino acids from the corresponding carboxylic acid and BocNHOMs as aminating agent.

Comment: The asymmetric iron catalyst enabled the vicinal C(sp³)-H diamination of unprotected carboxylic acids with BocNHOMs as aminating agent. The reaction proceeded smoothly to afford the corresponding α,β -diamino acids in excellent yields with good regio- and stereoselectivity. In this reaction, two vicinal C(sp³)-N bonds are constructed in a single operation.