F. DE AZAMBUJA, A. LOOSEN, D. CONIC, M. VAN DEN BESSELAAR, J. N. HARVEY, T. N. PARAC-VOGT* (KU LEUVEN, BELGIUM)

En Route to a Heterogeneous Catalytic Direct Peptide Bond Formation by Zr-Based Metal-Organic Framework Catalysts
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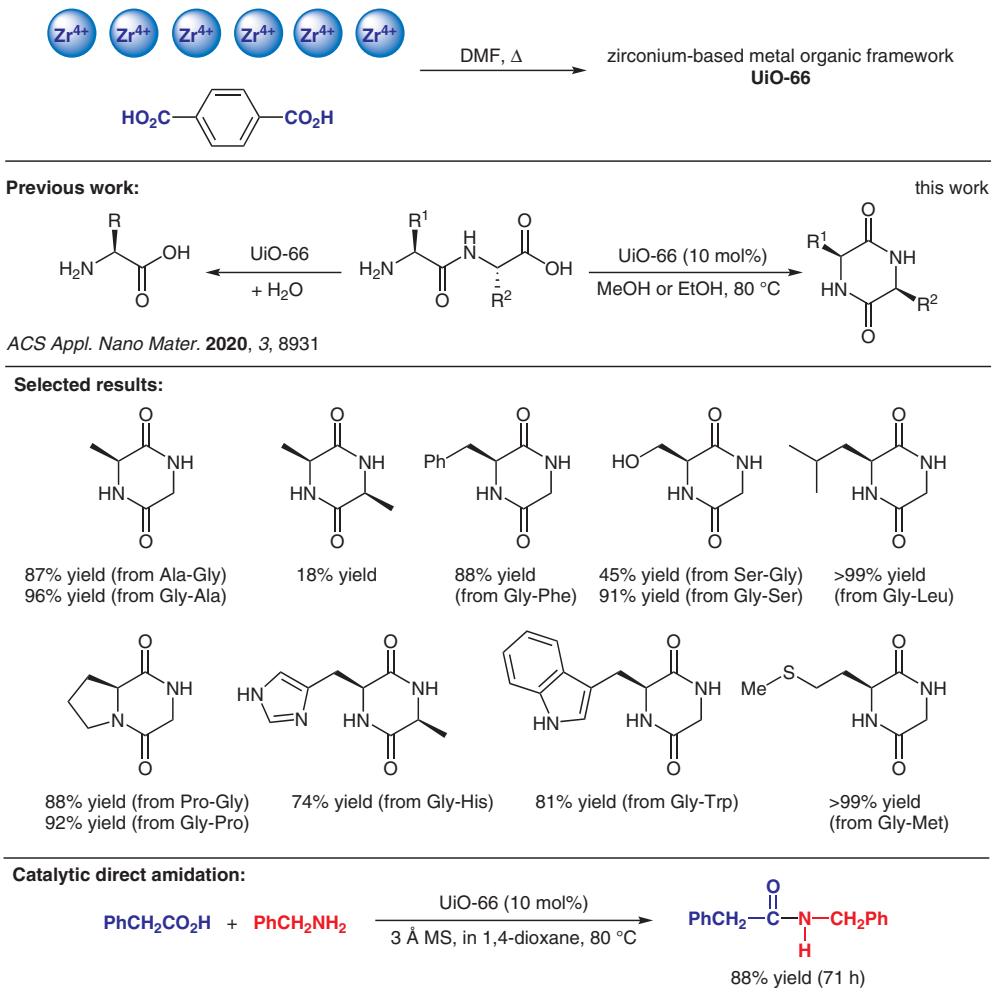
Zirconium Metal–Organic Framework Catalyzed Direct Amide-Bond Formation



Significance: The zirconium-based metal–organic framework UiO-66 promoted the dehydrative cyclization of dipeptides to form dioxopiperazines. Dipeptide molecules were treated with UiO-66 under anhydrous conditions to give the corresponding dioxopiperazines in good to excellent yields without a loss of their homochirality. The UiO-66 catalyst could be reused five times.

Comment: Note that the intermolecular direct amide condensation of phenylacetic acid with benzylamine also took place with UiO-66 catalyst in the presence of 3 Å MS. The authors have previously reported the hydrolysis of dipeptides, a reverse counterpart of the present condensation, in the presence of UiO-66 (*ACS Appl. Nano Mater.* **2020**, *3*, 8931).

SYNFACTS Contributors: Yasuhiro Uozumi, Ryoko Niimi
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Polymer-Supported Synthesis

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