W. MURAMATSU*, T. HATTORI, H. YAMAMOTO* (CHUBU UNIVERSITY, KASUGAI, JAPAN)
Substrate-Directed Lewis-Acid Catalysis for Peptide Synthesis
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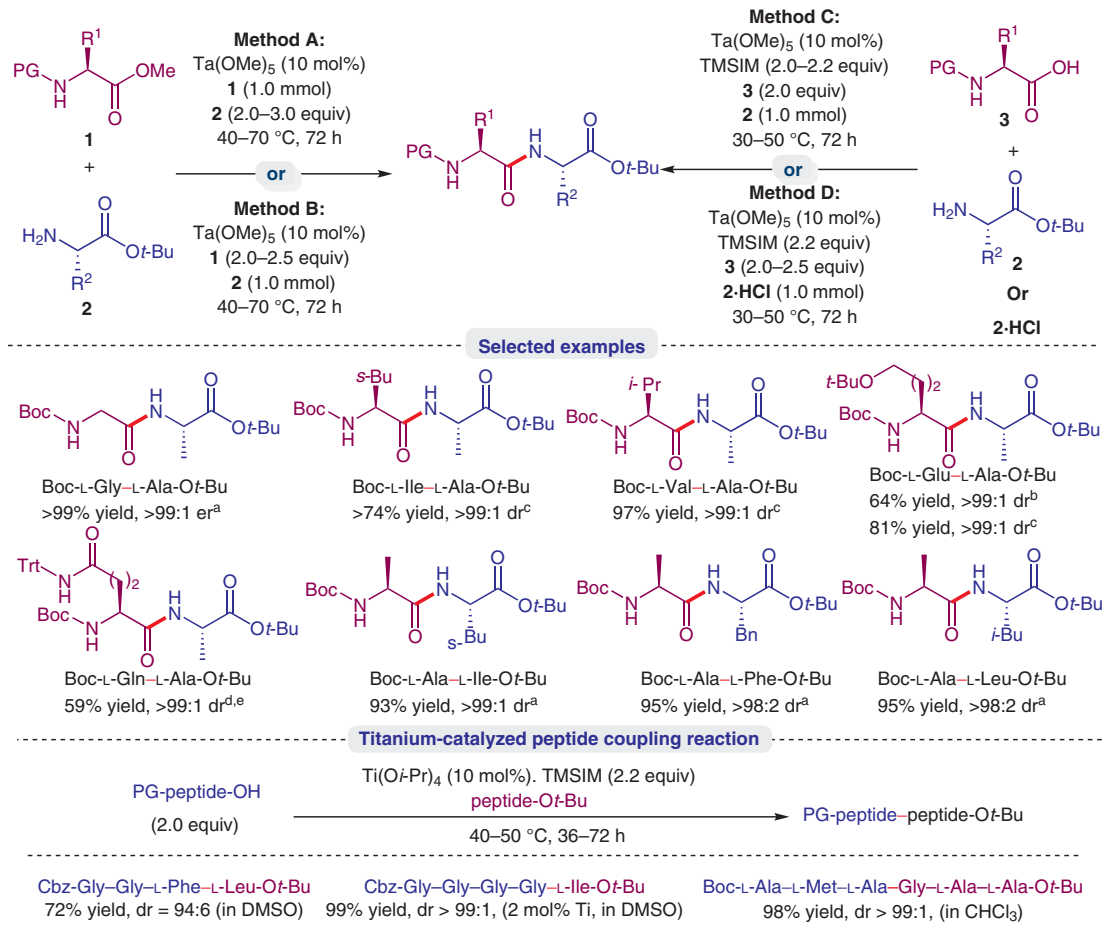
Tantalum-or Titanium-Catalyzed Peptide Synthesis



[a] Prepared by following method A. [b] Prepared by following method B. [c] Prepared by following method C.
[d] Prepared by following method D. [e] 0.5 mL $CHCl_3$ solvent used. TMSIM = 1-(Trimethylsilyl)imidazole.

Significance: The development of elegant synthetic methodologies for peptide-bond formation is a highly demanding task in organic synthesis. A substrate-directed, Lewis acid-catalyzed, racemization-free amidation method has been developed to access various peptides.

Comment: The tantalum-catalyzed substrate-directed peptide-bond-formation reaction proceeds with various amino acids under solvent-free conditions and delivers peptides in high yields without racemization. This method further extends titanium-catalyzed oligopeptide synthesis.

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Category
Peptide Chemistry

Key words
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titanium catalysis
substrate-directed reaction

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