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 CHCl₃ 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.

Category

Peptide Chemistry

Key words

tantalum catalysis

titanium catalysis

substrate-directed reaction

Synfact
of the
Month

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Synfacts 2020, 16(06), 0731 Published online: 15.05.2020

DOI: 10.1055/s-0040-1707543; Reg-No.: H07220SF

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