

Propargyl Pentafluorophenyl Carbonate as a Coupling Reagent for Peptide Synthesis

Category

Peptide Chemistry

Key words

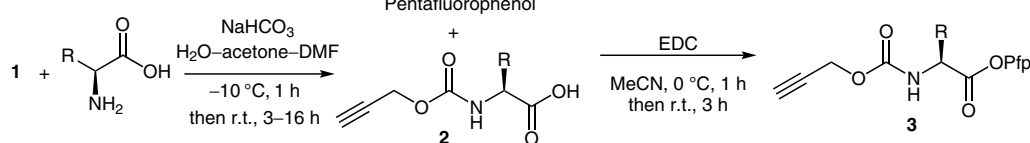
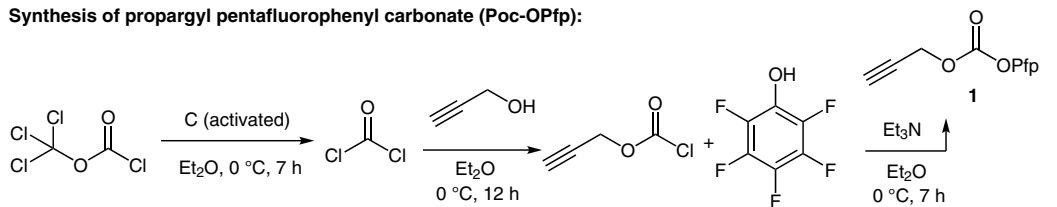
propargyl pentafluorophenyl carbonate

peptide synthesis

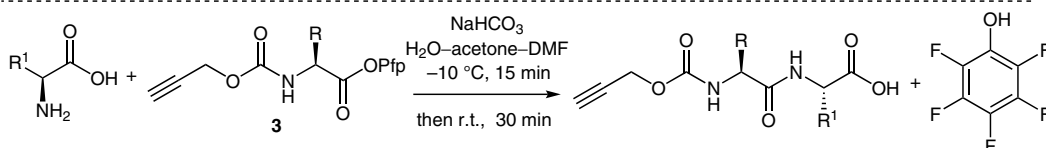
coupling reagent

Synfact Classic 

Synthesis of propargyl pentafluorophenyl carbonate (Poc-OPfp):



Entry	Amino acid	N-Poc-amino acid (2) yield (%)	N-Poc-amino acid-Pfp esters (3) yield (%)
1.	Gln	84	84
2.	Ile	83	80
3.	Phe	89	89
4.	Val	93	93
5.	Ala	86	90
6.	DL-Phe	89	90



Examples:	Poc-Ile-Phe-OH	Poc-Phe-Ala-OH	Poc-dl-Phe-Phe-OH	Poc-Val-Leu-OH
	95% yield	89% yield	90% yield	90% yield

Significance: Developing new coupling reagents that are efficient, sustainable, reduce the number of reaction steps, and minimize waste production is a significant topic in peptide chemistry. In 2002, Chandrasekaran and co-workers invented propargyl pentafluorophenyl carbonate (Poc-OPfp), an efficient reagent for synthesizing *N*-propargyl amino acids, and described its application in peptide synthesis.

Comment: Poc-OPfp was synthesized by the reaction of propargyl chloroformate with pentafluorophenol and used for the synthesis of various *N*-Poc amino acids and peptides in excellent yields.