B. LI*, R. BEMISH, R. A. BUZON, C. K.-F. CHIU, S. T. COLGAN, W. KISSEL, T. LE, K. R. LEEMAN, L. NEWELL, J. ROTH (PFIZER GLOBAL RESEARCH AND DEVELOPMENT, GROTON, USA)

Aqueous Phosphoric Acid as a Mild Reagent for Deprotection of the *t*-Butoxycarbonyl Group *Tetrahedron Lett.* **2003**, *44*, 8113–8115, DOI: 10.1016/j.tetlet.2003.09.040.

Development of Mild Conditions for the Deprotection of the *tert*-Butoxycarbonyl Protecting Group

Selected examples:

Entry	Substrate	Product	Yield	
1	HO ₂ C CO ₂ Bn	HO ₂ C CO ₂ Bn	94%	
2	NHFmoc NHFmoc Boc	N HN NHFmoc	92%	
3	BocHN CO ₂ Me	H ₂ N CO ₂ Me	97%	
4	BocN NBn	NBn	98%	
5	BocHN CO ₂ H	H ₂ N CO ₂ H	94%	
6	CbzHN CO ₂ t-Bu EO ₂ H	CbzHN CO₂H CO₂H	88%	

Significance: Protecting groups play an essential role in organic synthesis. Among them, the *tert*-but-oxycarbonyl (Boc) protecting group is unique and widely used in synthetic chemistry. Hence, there is a high demand for the development of simple and mild methods for the protection and deprotection of Boc groups. In 2003, the authors found aqueous phosphoric acid to be a mild reagent for the deprotection of the Boc group.

Comment: Aqueous phosphoric acid is efficiently used for the deprotection of the Boc group in various Boc-protected amine compounds. This protocol is mild, practically simple, and showcases high functional group tolerance. Furthermore, it preserves the stereochemical integrity of *N*-Boc amino acids.

Category

Peptide Chemistry

Key words

phosphoric acid
deprotection
tert-butoxycarbonyl
group
peptide synthesis



SYNFACTS Contributors: Hisashi Yamamoto, Isai Ramakrishna Synfacts 2023, 19(06), 0633 Published online: 11.05.2023 **DOI:** 10.1055/s-0042-1752673; **Reg-No.:** H04423SF