

This article was downloaded by:

On: 28 January 2011

Access details: *Access Details: Free Access*

Publisher *Taylor & Francis*

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



Phosphorus, Sulfur, and Silicon and the Related Elements

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t713618290>

Excellent Building Blocks for Phosphoserine-Containing Peptides

Peng Gong^a; Yan-Mei Li^a; Gang Zhao^a; Yu-Fen Zhao^a

^a Tsinghua University, China

Online publication date: 27 October 2010

To cite this Article Gong, Peng , Li, Yan-Mei , Zhao, Gang and Zhao, Yu-Fen(2010) 'Excellent Building Blocks for Phosphoserine-Containing Peptides', *Phosphorus, Sulfur, and Silicon and the Related Elements*, 177: 8, 2081

To link to this Article: DOI: 10.1080/10426500213386

URL: <http://dx.doi.org/10.1080/10426500213386>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.informaworld.com/terms-and-conditions-of-access.pdf>

This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

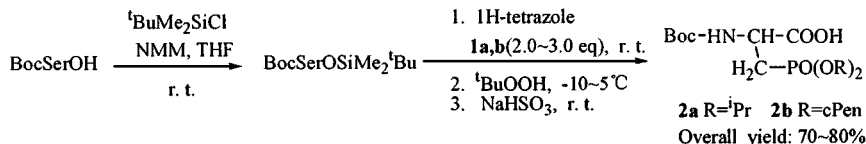
EXCELLENT BUILDING BLOCKS FOR PHOSPHOSERINE-CONTAINING PEPTIDES

Peng Gong, Yan-Mei Li, Gang Zhao, and Yu-Fen Zhao
 Tsinghua University, China

(Received July 29, 2001; accepted December 25, 2001)

Phosphorylation and dephosphorylation of proteins are very important in life process.¹ Phosphopeptides are the most useful mimics in study of such function–modification relationships. Therefore, to synthesize and select appropriate building blocks is important.

After careful selection, we report that BocSer[PO₃(ⁱPr)₂]OH and BocSer[PO₃(cPen)₂]OH (cPen = cyclopentyl) are excellent building blocks for Boc-strategy. Dialkyl N,N-ethylphosphoramidites (RO)₂PNet₂ (**1a** R = ⁱPr, **1b** R = cPen) were prepared simply and conveniently by a traditional two-step reaction.² **2a** and **2b** were obtained by the following step. The overall reaction time was only 3–4 h, and the purification process was very simple. **2a** and **2b** are both completely suitable for the general Boc-strategy in solid-phase peptide synthesis. We have successfully obtained a phosphopeptide[c-Fos(371–379), Ser374 phosphorylated], using **2a** as one of its building blocks.



SCHEME 1

REFERENCES

- [1] T. Curran, A. D. Miller, L. Zokas, and I. M. Verma, *Cell*, **36**, 259 (1984).
- [2] J. W. Perich and R. B. Johns, *Synthesis*, 143 (1988).

The authors would like to thank the financial supports from the National Natural Science Foundation of China (No. 20072023).

Address correspondence to Yan-Mei Li, Bioorganic Phosphorus Chemistry Laboratory, Department of Chemistry, School of Life Science and Engineering, Tsinghua University, Beijing 100084, P. R. China. E-mail: liym@mail.tsinghua.edu.cn