

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>

Double Asymmetric Induction During Addition of Chiral Phosphites to C=N Bond

Sheiko Sergei^a; Guliako Irina^a; Grushkun Evgeni^a; Oleg I. Kolodiazhnyi^a

^a Institute of Bioorganic Chemistry, National Academy of Sciences of Ukraine, Kiev, Murmanskaia, 1

Online publication date: 27 October 2010

To cite this Article Sergei, Sheiko, Irina, Guliako, Evgeni, Grushkun and Kolodiazhnyi, Oleg I. (2010) 'Double Asymmetric Induction During Addition of Chiral Phosphites to C=N Bond', *Phosphorus, Sulfur, and Silicon and the Related Elements*, 186: 8, 2269 – 2270

To link to this Article: DOI: 10.1080/10426500213419

URL: <http://dx.doi.org/10.1080/10426500213419>

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.

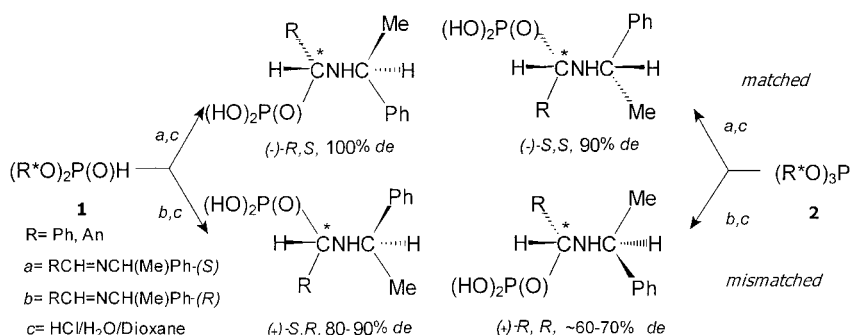
DOUBLE ASYMMETRIC INDUCTION DURING ADDITION OF CHIRAL PHOSPHITES TO C=N BOND

*Sheiko Sergei, Guliako Irina, Grushkun Evgeni,
 and Oleg I. Kolodiazhnyi*

*Institute of Bioorganic Chemistry, National Academy of Sciences
 of Ukraine, Kiev, Murmanskia, 1*

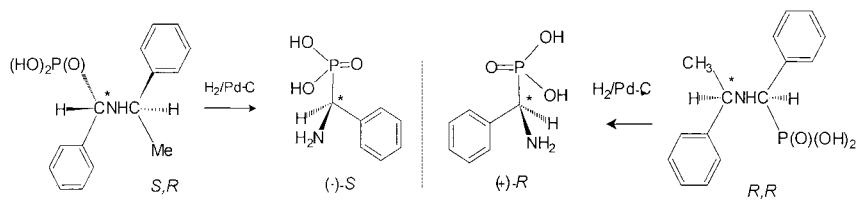
(Received July 29, 2001; accepted December 25, 2001)

We found that the addition of chiral di- or trialkylphosphites **1,2** [$R^*O=$ (1*R*,2*S*,5*R*)-menthyl, (1*S*)-*endo*-bornyl, glucofuranosyl, *etc*)¹ to chiral C=N compounds is accompanied by *double asymmetric induction* at the α -carbon atom (*) to give aminophosphonic acids with ~100% *de* in case of *matched pairs* and 80–90% *de* in case of *mismatched pairs* as shown in the scheme.^{1,2} We found also that di- and trialkylphosphites **1,2** furnish the aminophosphonic acids with antipodal configuration.³



Configurations of new stereogenic centers were determined by chemical methods, NMR and, in some cases X-ray analysis. N-substituted aminophosphonic acids have been debenzylated by catalytic hydrogenation with Pd-C and converted to 1-aminobenzylphosphonic acids of well-known configuration.

Address correspondence to Prof. O. I. Kolodiazhnyi. E-mail: oikol123@bpci.kiev.ua



REFERENCES

- [1] O. I. Kolodiaznyi, S. Yu. Sheiko, and E. V. Grishkun, *Heteroatom Chemistry*, **11**, 138–143 (2000).
- [2] O. I. Kolodiaznyi and S. Yu. Sheiko, *Zh.obshch.khim.*, **71**, 1039 (2001).
- [3] S. Yu. Sheiko, *Ph.D. Thesis*, Kiev, 1–130 (2002).