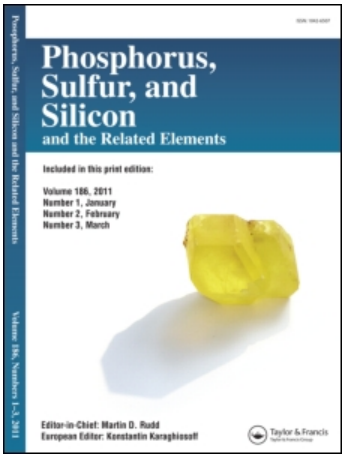

Phosphorus, Sulfur, and Silicon and the Related Elements
Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713618290

Stereoselective Synthesis of [Rp]-Dinucleoside (3',5')-Methanephosphonates

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To cite this Article Wozniak, Lucyna A. , Chworos, Arkadiusz and Stec, W. J.(1999) 'Stereoselective Synthesis of [Rp]-Dinucleoside (3',5')-Methanephosphonates', Phosphorus, Sulfur, and Silicon and the Related Elements, 147: 1, 437
To link to this Article: DOI: 10.1080/10426509908053698
URL: http://dx.doi.org/10.1080/10426509908053698

Phosphorus, Sulfur and Silicon, 1999, Vol. 147, pp. 437-437
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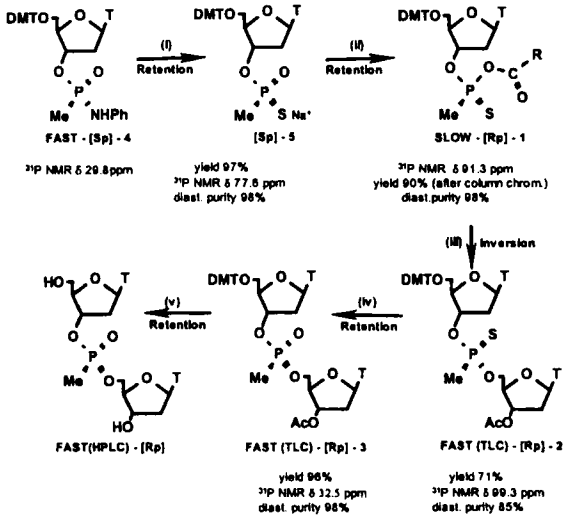
DBU-assisted phosphonylating properties of diastereomerically pure 5'-*O*-DMT-thymidine (*O*-2,4,6-trimetylbenzoyl methanephosphonothiate)(**1**) towards alcohols [1] have been used for the synthesis of [Rp]-dithymidylyl (3',5')-methanephosphonothioates (**2**) and methanephosphonates (**3**). Substrates (**4**) and (**5**) have been obtained according to the previously described methods [2].



Reaction conditions: (I) NaH/CS_2, DMF; (II) RC(O)Cl, Py (R= 2,4,6-trimethylphenyl); (III) 3'-*O*-Ac-thymidine, DBU, MeCN; (IV) OXONE; (V) NH_3/MeOH-H_2O (1:1)

It has been found that the reaction of condensation (**1**) → (**2**) proceeds with predominan inversion of configuration. Dimer (**2**) was oxidized by means of oxone, leading to (**3**) [2].

References

[1] L.A. Wozniak, A. Chworos, W.J. Stec, *J.Org.Chem.* submitted.
[2] W.J. Stec, *et al. Antisense and Nucleic Drug Development* **7** (1997) 381.