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Publisher *Taylor & Francis*

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## 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>

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**To cite this Article** Caputo, Romualdo , Guaragna, Annalisa , Palumbo, Giovanni and Pedatella, Silvana(1999) 'A New Three Carbon Homologation *Via* Sulfur Containing Heterocyclic Systems', *Phosphorus, Sulfur, and Silicon and the Related Elements*, 153: 1, 409 – 410

**To link to this Article:** DOI: 10.1080/10426509908546495

**URL:** <http://dx.doi.org/10.1080/10426509908546495>

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## A New Three Carbon Homologation *Via* Sulfur Containing Heterocyclic Systems

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A new reagent, based on a 5,6-dihydro-1,4-dithiin heterocyclic system<sup>1</sup>, has been devised and conveniently used for 3 carbon elongations of various electrophiles. In fact, it acts as either a propenyl alcohol or an acrolein anion equivalent, introducing into the new molecule a moiety consisting of fully protected double bond and allylic oxygen.

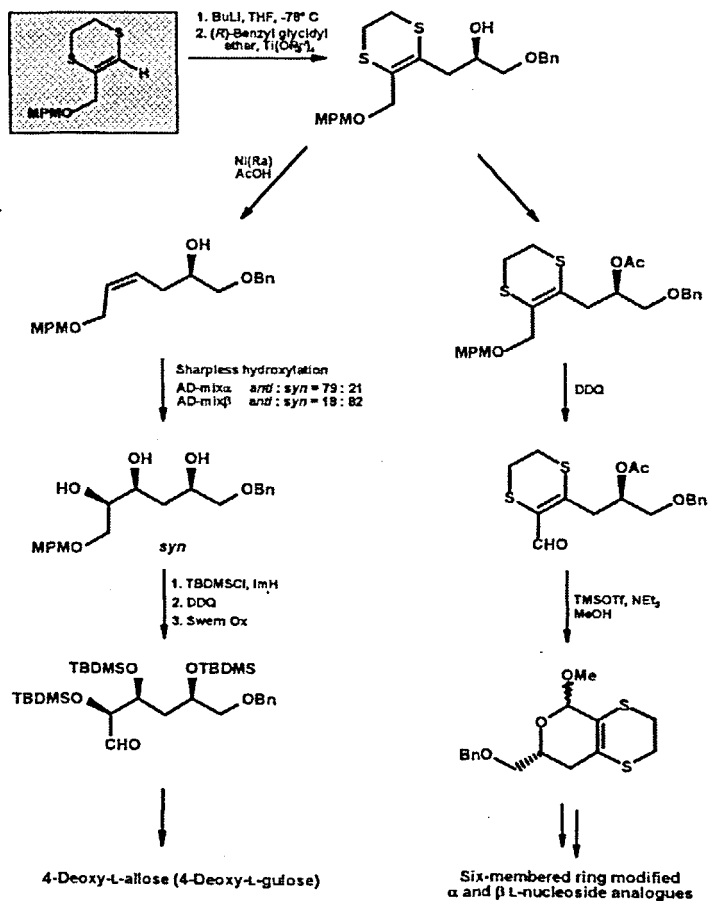


The reagent has been used for the elongation of chiral electrophiles<sup>2</sup>, like protected (*R*)- and (*S*)-glyceraldehydes or (*R*)- and (*S*)-benzyl glycidyl ethers, towards the synthesis of simple sugars and other substances containing modified sugars. It is also noteworthy the preparation of 4-deoxy sugars from benzyl glycidyl ethers, as well as the preparation of azasugars from protected (*S*)- $\alpha$ -amino aldehydes.

The cleavage of the *p*-methoxybenzyl ether protecting group by DDQ can be performed under experimental conditions which lead to either an allylic hydroxyl group or to a carbaldehyde function. Some examples of

the above experiments are outlined in the following scheme:

1. R. Caputo, C. Ferreri and G. Palumbo, *Synthesis*, 223 (1981).
2. R. Caputo, L. Longobardo, G. Palumbo and S. Pedatella, *Tetrahedron*, 52, 11857 (1996).



## References

- [1] R. Caputo, C. Ferreri and G. Palumbo, *Synthesis*, 223 (1981).
- [2] R. Caputo, L. Longobardo, G. Palumbo and S. Pedatella, *Tetrahedron*, 52, 11857 (1996).