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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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R. Alan Aitken^a; Nazira Karodia^a; Tracy Massil^a; Robert J. Young^b

^a School of Chemistry, University of St. Andrews, St. Andrews, Fife, U.K. ^b Medicines Research Centre, Glaxo-Wellcome, Stevenage, U.K.

To cite this Article Aitken, R. Alan , Karodia, Nazira , Massil, Tracy and Young, Robert J.(1999) 'Synthesis of Amino Acid Derived Cyclic Phosphorus Ylides', *Phosphorus, Sulfur, and Silicon and the Related Elements*, 147: 1, 245

To link to this Article: DOI: 10.1080/10426509908053603

URL: <http://dx.doi.org/10.1080/10426509908053603>

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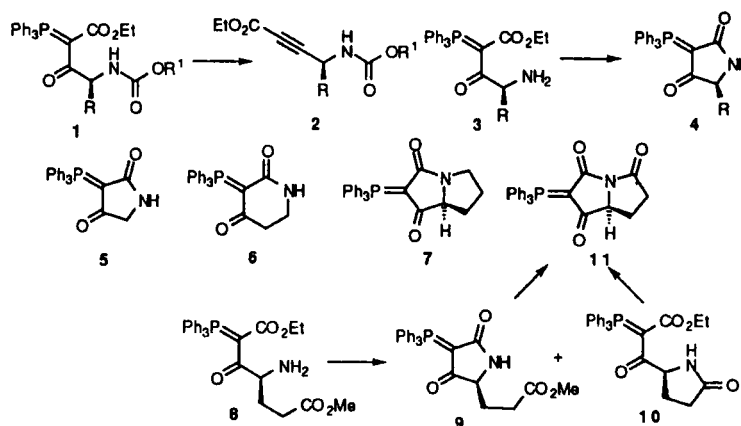
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Synthesis of Amino Acid Derived Cyclic Phosphorus Ylides

R. ALAN AITKEN^a, NAZIRA KARODIA^a, TRACY MASSIL^a and
 ROBERT J. YOUNG^b

^aSchool of Chemistry, University of St. Andrews, St. Andrews, Fife, KY16 9ST,
 U. K. and ^bGlaxo-Wellcome, Medicines Research Centre, Stevenage, SG1 2NY, U. K.

We recently reported the thermal elimination of Ph_3PO from suitably protected aminoacyl ylides **1** as a route to acetylenic amino acid analogues **2**.¹ Pyrolysis of ylides such as **3** with a free amino group takes a different course. Ethanol is eliminated to give the chiral cyclic ylides **4** which can be viewed as 3-triphenylphosphoranylidene tetramic acids. Specific examples prepared include **4** ($\text{R} = \text{Me}, \text{Pr}^i$), the parent compound **5** (from glycine) and the six-membered ring compound **6** (from β -alanine). Using a similar approach, bicyclic ylides such as **7** (from proline) can be prepared. In the case of the glutamate derived ylide **8**, thermolysis initially gives a mixture of **9** and **10** but these both cyclise to the bicyclic product **11** with time. The structure and reactivity of these interesting cyclic ylides are now being examined.



References

- [1] R.A. Aitken and N. Karodia, *Chem. Commun.*, 2079 (1996).