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Synthesis of Bis(Phosphonates) Pyrrolidines Derivatives

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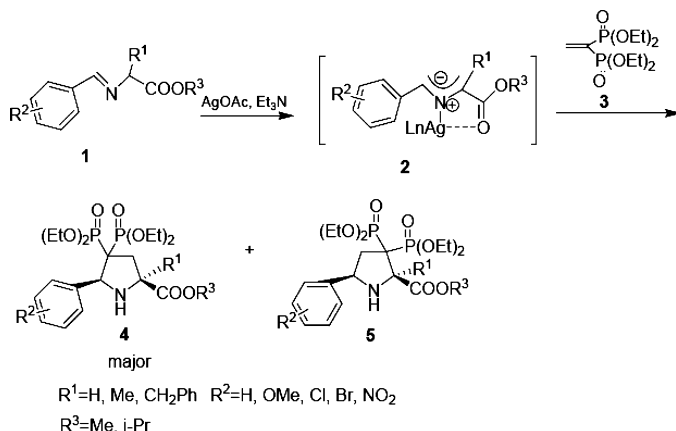
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Synthesis of Bis(Phosphonates) Pyrrolidines Derivatives

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The cycloaddition of azomethine ylides with electronic-deficient olefins provides an efficient method for synthesizing substituted pyrrolidines contained in many biologically active compounds.¹ Many studies have been done in this field in recent years. However, few results have been reported about the reaction of azomethine ylides with vinylphosphonates.² We present our results on the reaction between *in situ*-generated azomethine ylides **2** and tetraethyl vinylidenebis (phosphonates) **3**.



N-metallated azomethine ylides **2** were generated by the reaction of arylidene imines **1** with AgOAc and triethylamine. These azomethine ylides undergo cycloaddition to **3** at room temperature with good regioselectivity and yields. The main product is compound **4**. The structures

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of the two cycloadducts were confirmed by ^1H NMR, ^{31}P NMR, and elemental analysis.

REFERENCES

- [1] G. W. Gribble, In *Comprehensive Heterocyclic Chemistry*; A. R. Katritzky, C. W. Rees, E. F. V. Scriven, Eds. (Pergamon: Oxford, U.K., 1996), Vol. **2**, p. 207.
- [2] C. Jesùs, G. Ronald, et al., *Eur. J. Org. Chem.*, 1971 (2001).