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C. Dejugnat^a; K. Vercruysse-Moreira^a; G. Etemad-Moghadam^a

^a Université Paul Sabatier, France

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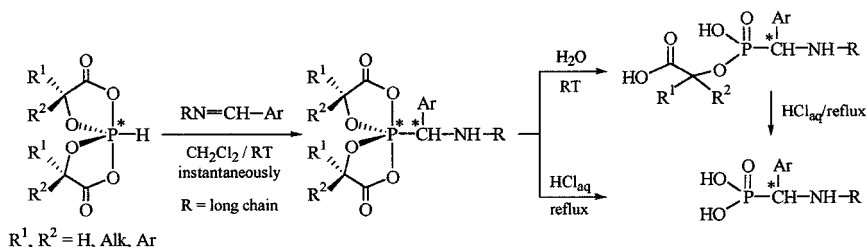
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ASYMMETRIC SYNTHESIS OF NEW 1-AMINOPHOSPHONIC ACID AMPHIPHILES

C. Dejugnat, K. Vercruysse-Moreira, and G. Etemad-Moghadam
Université Paul Sabatier, France

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Addition reaction between labile P–H bond spiroposphoranes and long-chain aldimines occurs instantaneously at room temperature in quantitative yields and high stereoselectivity. Further selective hydrolysis gives racemic α -aminophosphonates (monoesters or acids); simple hydrolysis (moisty solvents) leads to phosphonocarboxylic acids, whereas more drastic conditions (concentrated aqueous hydrochloric acid under reflux) afford free α -aminophosphonic acids in high yields:¹



SCHEME 1

The enantioselective version requires use of chiral spiroposphoranes and leads to chiral phosphonate monoesters. After separation of the two diastereomeric forms, acidic hydrolysis furnishes free α -aminoalkylphosphonic acids in both enantiomerically pure form. Effect of chirality on their supramolecular assemblies (chiral recognition) will be presented.

Address correspondence to G. Etemad-Moghadam, Laboratoire IMRCP (UMR 5623) Université Paul Sabatier 118, Route de Narbonne, 31062 Toulouse Cedex 04-France.
 E-mail: etemad@chimie.ups-tlse.fr

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