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Acid-promoted transformations of aryl substituted diphenylphosphoryl allenes

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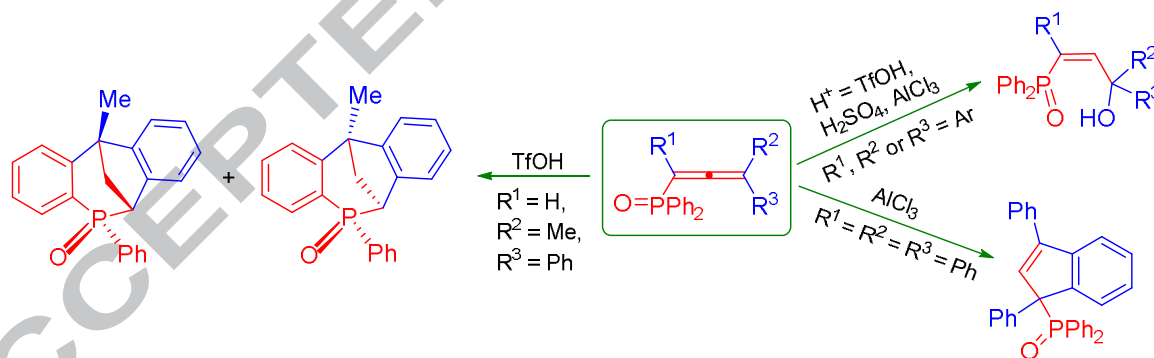
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Graphical Abstract



Abstract

1-(Diphenylphosphoryl)alka-1,2-dienes, bearing aryl substituents at the allene system, under the action of Brønsted (TfOH, H₂SO₄) or Lewis (AlCl₃) acids gave rise to 3-hydroxyalk-2-en-1-yl-diphenylphosphine oxides (diphenylphosphoryl allyl alcohols) in yields of 57–98%. In some cases, the formation of (diphenylphosphoryl)indenes and phosphaheterobicyclic structures was observed.

Allenes are widely used in organic synthesis¹ and the electrophilic reactions of allenes have been explored for the synthesis of various carbo- and heterocycles.² Recently³ we showed that 1-

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