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Mechanistic insights into phospho-Michael reaction of tertiary phosphines with electron-deficient alkenes

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Abstract

© 2016 Taylor & Francis Group, LLC. The Michael-type addition of tertiary phosphines to electron-deficient alkenes is a convenient way to generate reactive phosphonium zwitterionic intermediates, which participate readily in many synthetically useful transformations. Although the synthetic usefulness of the phospho-Michael addition has been largely demonstrated, knowledge on the kinetics and mechanism of this reaction is sparse. This paper briefly summarizes the contribution of our research group to find out the mechanism of this reaction.

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Keywords

Anchimeric assistance, conjugate addition, rate-determining step, solvent isotope effect, tertiary phosphines