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Synthesis of cyclopentadiene derivatives using the multicomponent reaction of triphenylphosphine in water

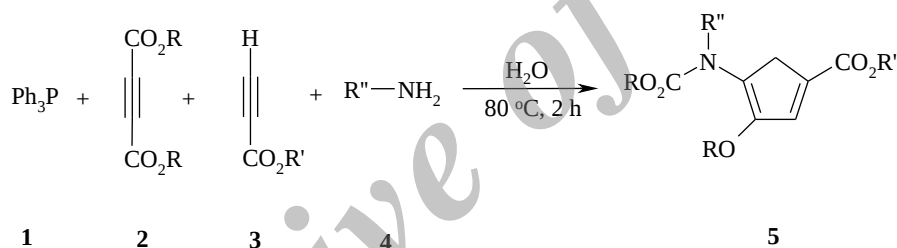
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One of the powerful tools used to join economic aspects with the environmental concerns is performing organic reactions in water; this strategy consists of two or more synthetic steps, which are carried out in water as a cheap, nontoxic, environmentally friendly solvent, in a one-step reaction, without isolation of any intermediate thus reducing time, saving money, energy and raw materials [1]. Multicomponent reactions (MCRs), with three or more reactants combine in a one-pot procedure to give a single product, have become increasingly popular during the last decade [2-3]. MCRs are perfectly suited for combinatorial library synthesis, and thus are finding increased use in the discovery process for new drugs and agrochemicals [4].

Herein we describe an efficient synthesis of cyclopentadiene derivatives **5** via the reaction of triphenylphosphine **1**, dialkyl acetylenedicarboxylate **2**, **3**, and primary amines **4** in water as the solvent at 80 °C in good yields without using any catalyst and low time.



References

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