P. S.-W. LEUNG, Y. TENG, P. H. TOY* (THE UNIVERSITY OF HONG KONG, P. R. OF CHINA) Chromatography-Free Wittig Reactions Using a Bifunctional Polymeric Reagent Org. Lett. 2010, 12, 4996-4999.

Wittig Reactions Using a Bifunctional **Polymeric Reagent**

Significance: The rasta resin supported phosphine and amine reagent (RR-Ph₃P-NBnEt₂, 7) was synthesized and applied to the one-pot Wittig reaction. Thus, the heterogeneous core 3 was prepared from JandaJel cross-linker 1 and 2 according to the reported procedures (P. H. Toy and co-workers Synlett 2010, 1997). The core polymer 3 underwent living polymerization with a 5:1:1 molar mixture of 4, 5, and 6 to furnish the polymeric reagent 7. The one-pot Wittig reaction of aldehyde 8d with α-bromo ester 9a was carried out with the RR-Ph $_3$ P-NBnEt $_2$ **7** to give 98% yield of a mixture of (E)- and (Z)-ethyl 3-(4-chlorophenyl)acrylate (10 and 11) in a ratio of 97:3.

Comment: This is the first example of a bifunctional polymer bearing two distinct reagent groups and its use in a one-pot Wittig reaction. The onepot Wittig reactions of several aldehydes 8 with α -halo esters and ketones **9** were examined under similar reaction conditions to give the corresponding Wittig products in high yield (32 examples, 92-98% yield). In all cases tested, only filtration and solvent removal were required to obtain a pure mixture of alkene product isomers.

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