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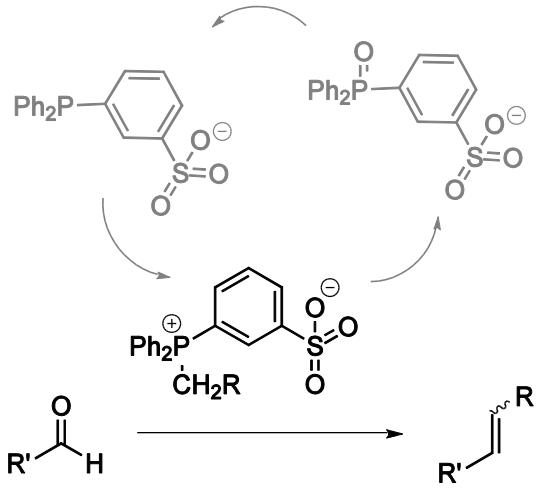
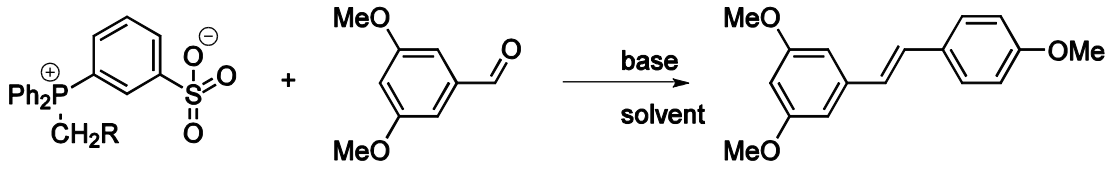
Zwittig™ Reagents

The use of either soluble or insoluble tethers to simplify and facilitate organic transformations has become a standard method in synthetic organic chemistry. Ion-tagged reagents represent one such class which has recently garnered much attention for its ability to offer a solubility switch via simple regulation of solvent composition.[1] A subset of these reagents, Zwitterionic phosphonium sulfonates, have been developed for use in a range of applications including as ion-tagged Wittig reagents.[2] These Zwittig™ reagents now offered by KCT (and recently featured by the American Chemical Society as noteworthy chemistry[3]) represent a convenient route for the preparation of C=C double bonds.



A range of unfunctionalized and functionalized, aryl and alkyl, Zwittig™ reagents have been developed and successfully coupled with a host of aryl aldehydes. In fact, these reagents have been successfully used for the synthesis of methylated resveratrol (**1**) which is readily converted to the bioactive resveratrol.[4] Upon completion of the reaction, the by-product phosphine oxide is removed by precipitation via addition of non-solvents such as diethylether.



R = p-MeOPh **1**

References:

1. Miao, W.; Chan, T. H. "Ionic-Liquid-Supported Synthesis: A Novel Liquid-Phase Strategy for Organic Synthesis" *Acc. Chem. Res.* 2006, 39, 897.
2. Huo, C.; He, X.; Chan, T. H. "Zwitterionic Phosphonium Sulfonates as Easily Recoverable, Ion-Tagged Wittig Reagents" *J. Org. Chem.* 2008, 8583.
3. American Chemical Society. *Noteworthy Chemistry*. December 8, 2008. Retrieved Dec. 8, 2008 from http://portal.acs.org/portal/acs/corg/content?_nfpb=true&_pageLabel=PP_ARTICLEMAIN&node_id=840&content_id=WPCP_011361&use_sec=true&sec_url_var=region1&__uuid=2332536a-0932-45a9-a12f-fafc0bd23d9e#P16_2801.
4. Ali, M. A.; Kondo, K.; Tsuda, Y. "" *Chem. Pharm. Bull.* 1992, 40, 1130.