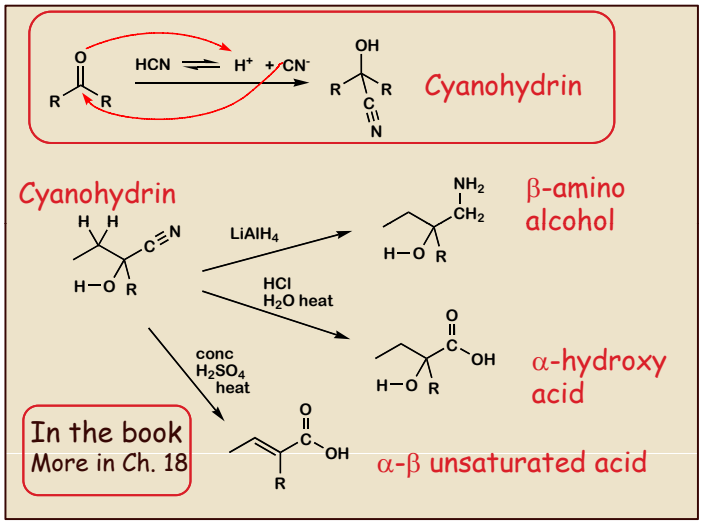
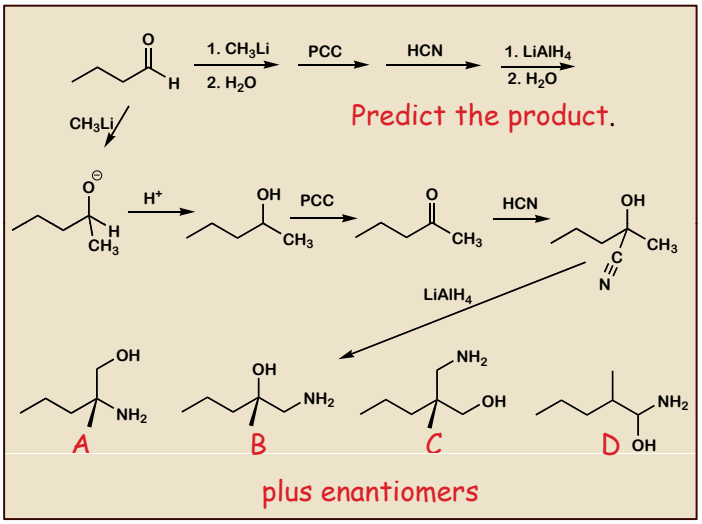


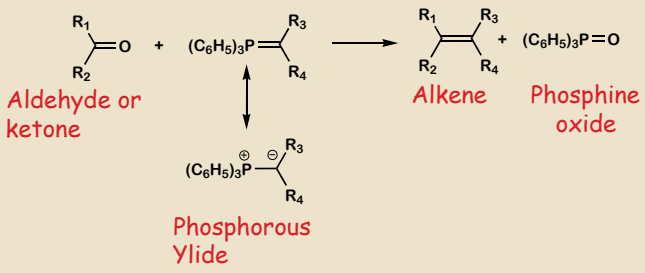


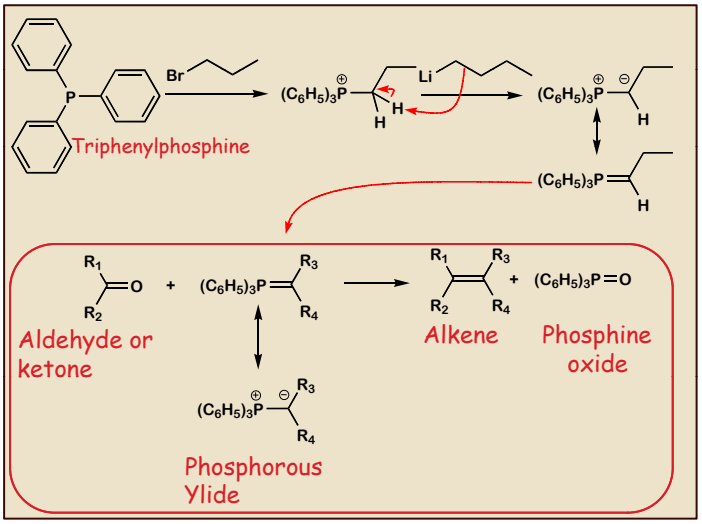
Great Synthetic Reaction Number 1

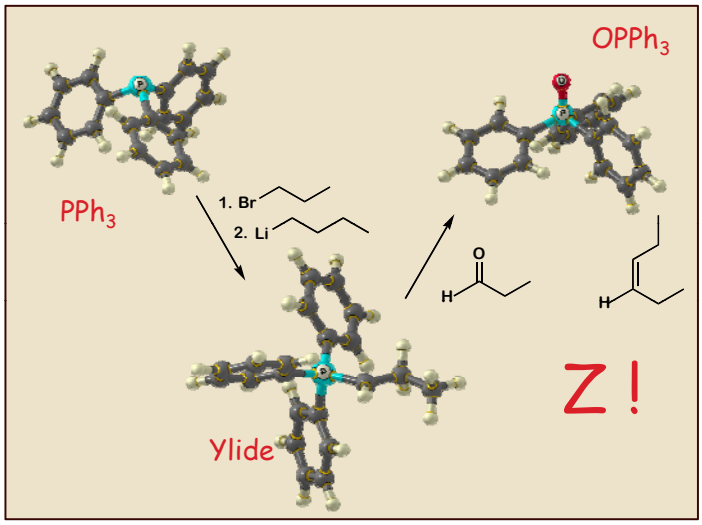
Diels Alder Reaction

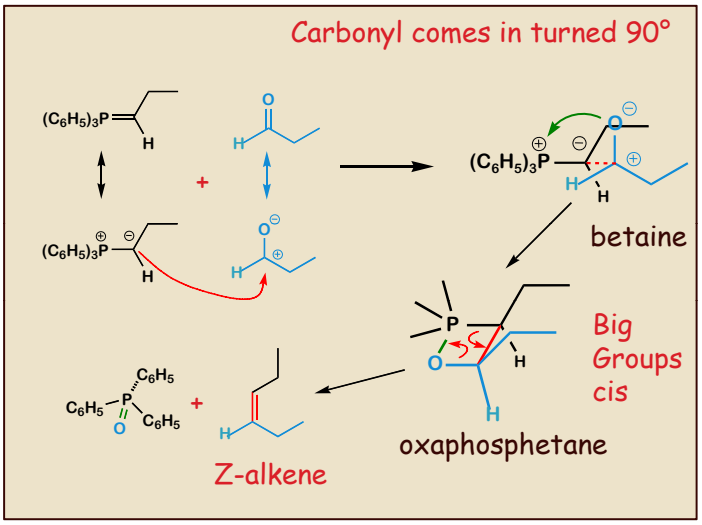
Great Synthetic Reaction Number 2

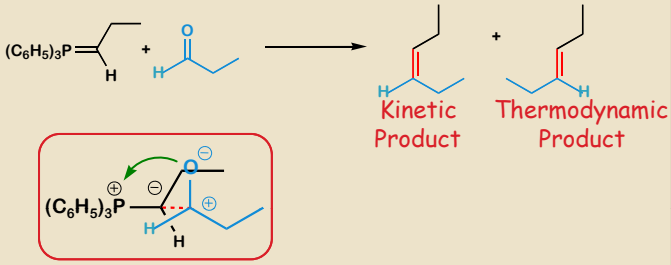
Wittig Reaction





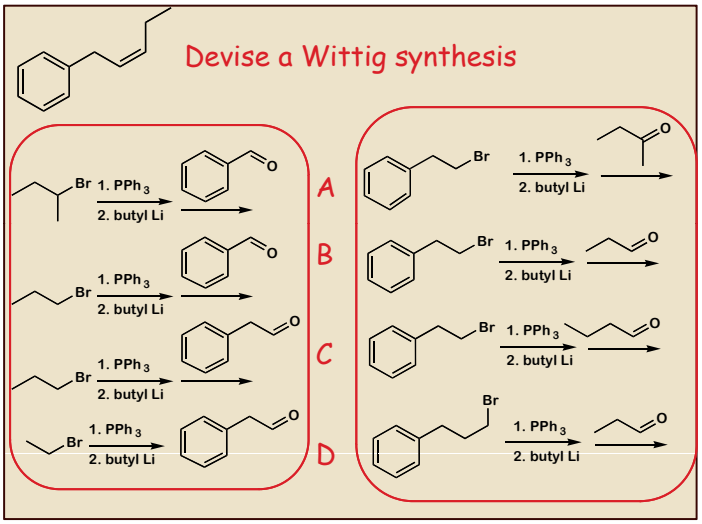


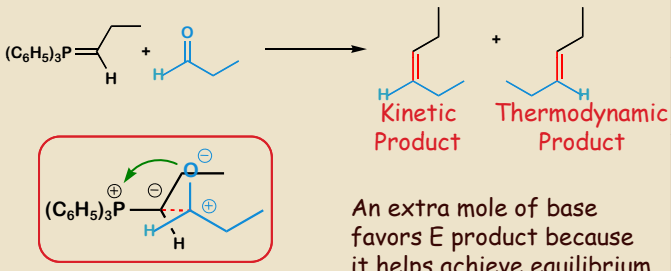




The key to the Z product is doing it fast with no equilibration of the betaine.

Stereoselectivity is better with aldehydes than ketones.



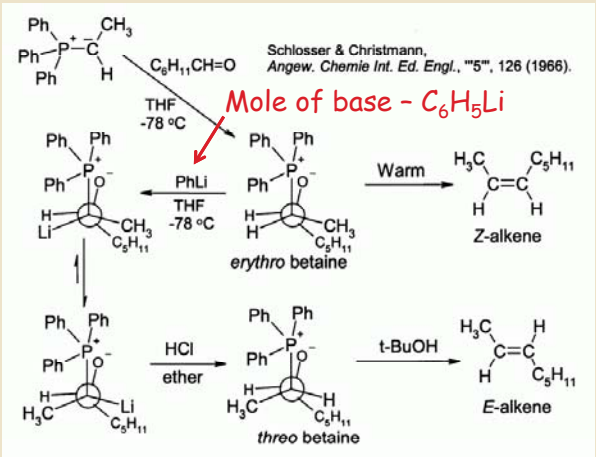


The key to the Z product is doing it fast with no equilibration of the betaine.

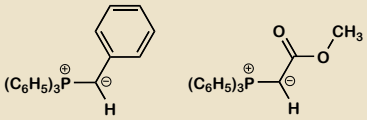
An extra mole of base favors E product because it helps achieve equilibrium

Stereoselectivity is better with aldehydes than ketones.

By playing "tricks" you can select your isomer. Luck Helps!

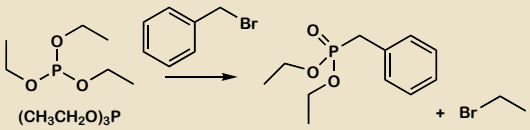


http://en.wikipedia.org/wiki/Wittig_reaction

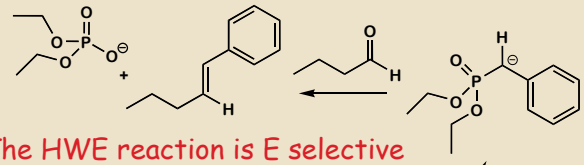


Yilides containing resonance stabilizing groups are not very reactive in Wittig reactions.

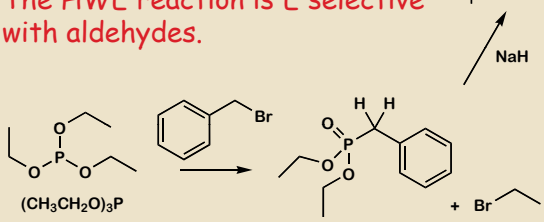
So use a more reactive Phosphorous compound



Horner-Wadsworth-Emmons (HWE) modification

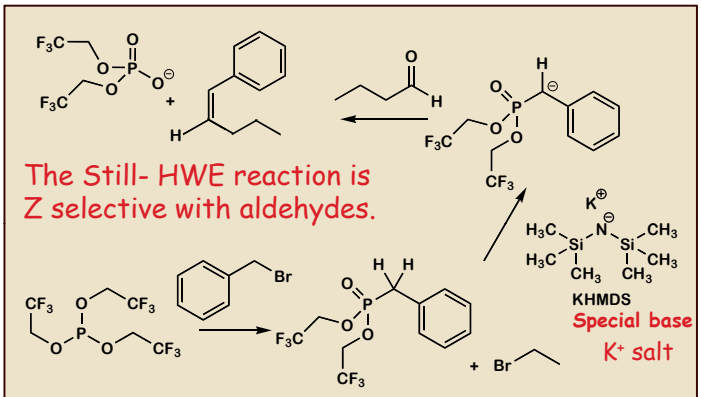


The HWE reaction is E selective with aldehydes.



Horner-Wadsworth-Emmons (HWE) modification

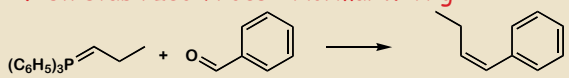
But what if you want the Z?



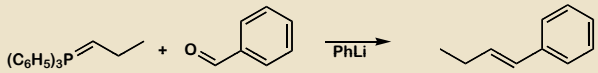
The Still- HWE reaction is Z selective with aldehydes.

CF_3 groups withdraw electrons make compound more reactive, returning reaction kinetic control.

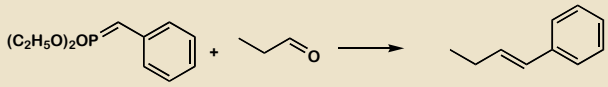
A. Un-stabilized Ylides – Normal Wittig



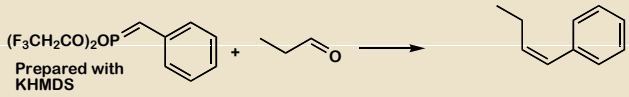
B. Un-stabilized Ylides – Schlosser Modification

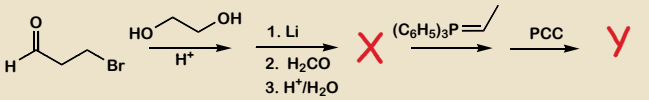
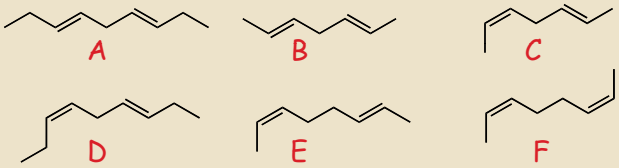
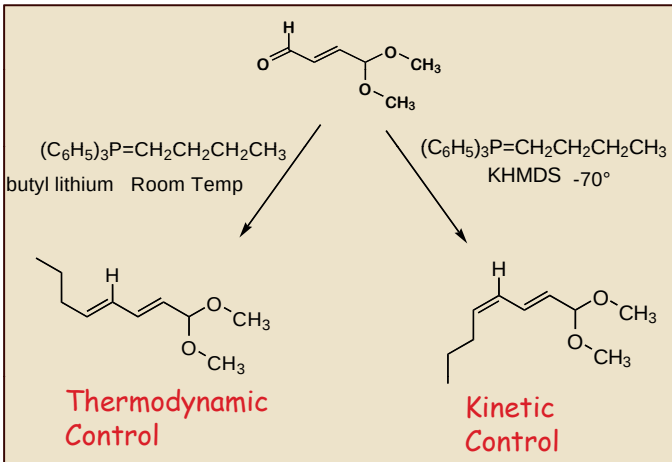


C. Stabilized Ylides – HWE



D. Stabilized Ylides – Still - HWE





What is Z?