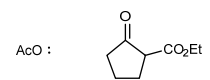


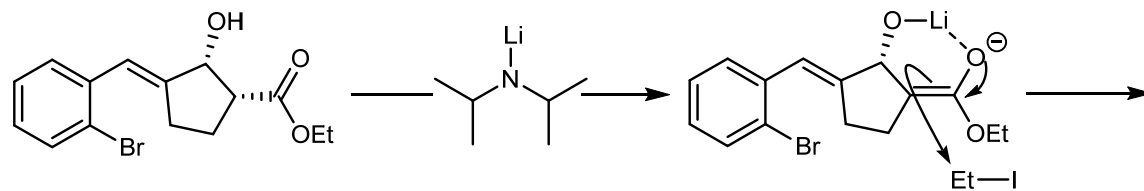


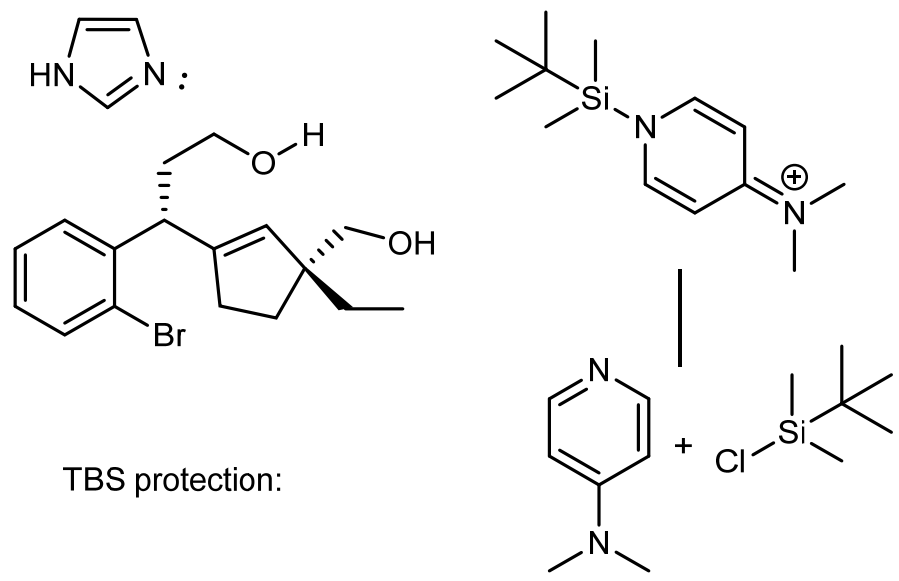
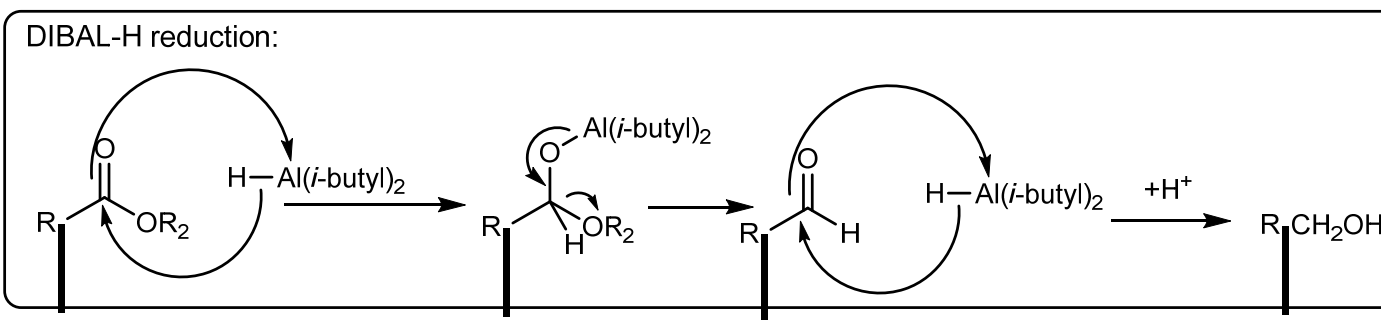


Scheme 1 Retrosynthesis of (-)-geniemitine (1)

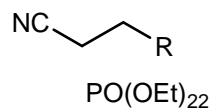
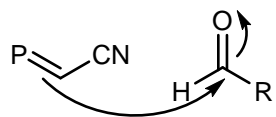


ethylation mechanism:

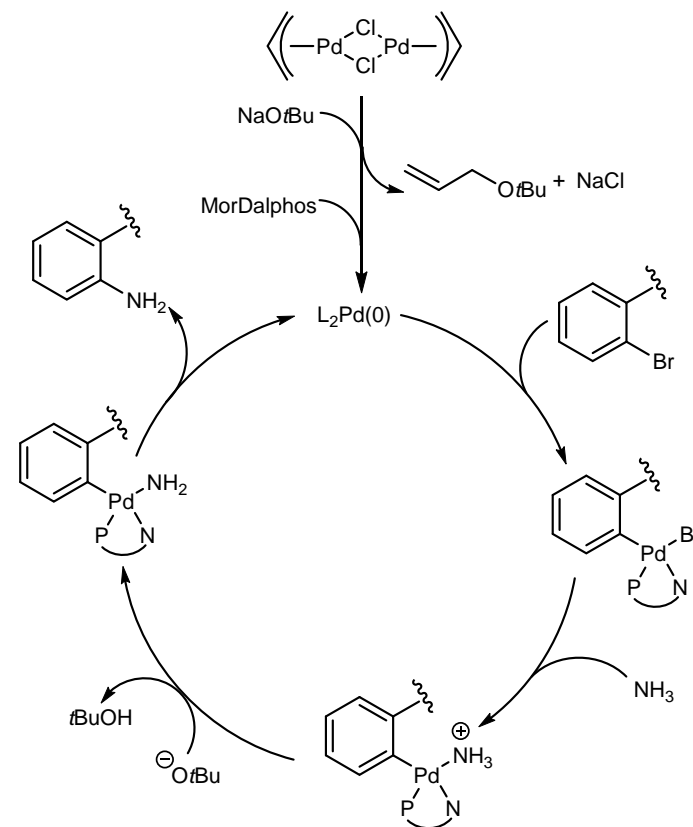
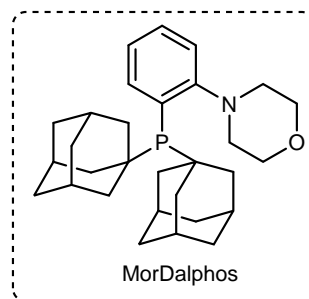




Horner-Wadsworth-Emmons Olefination



Pd-MorDalphos catalyzed amination mechanism:



Boc protection:

