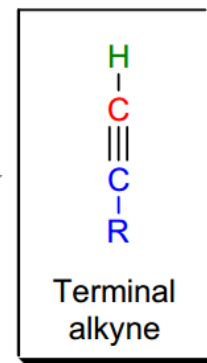
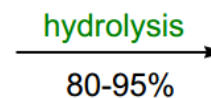
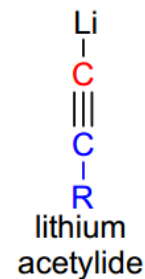
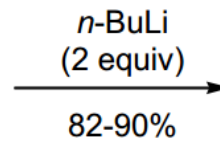
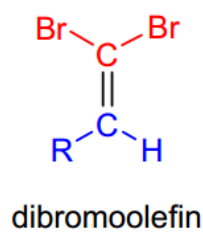
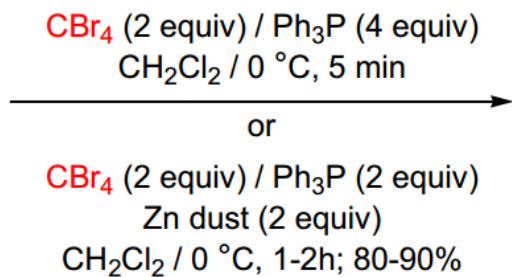
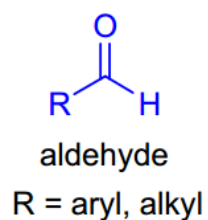
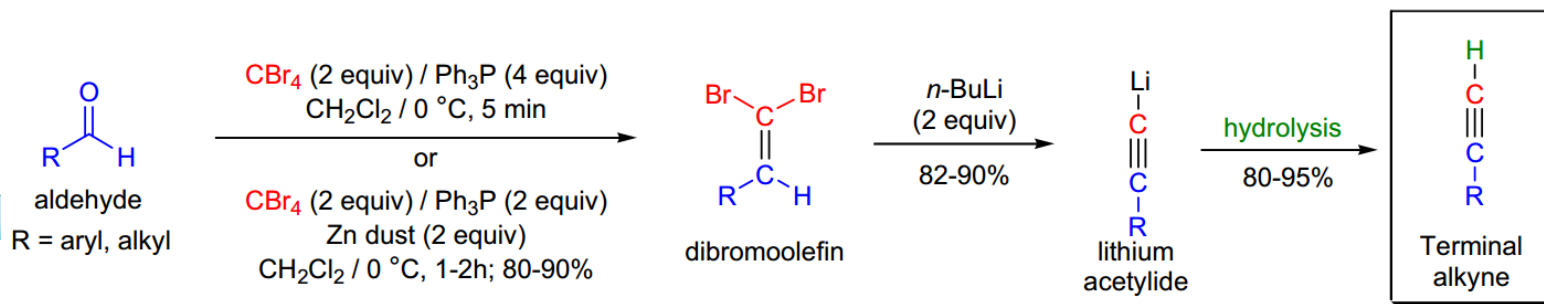


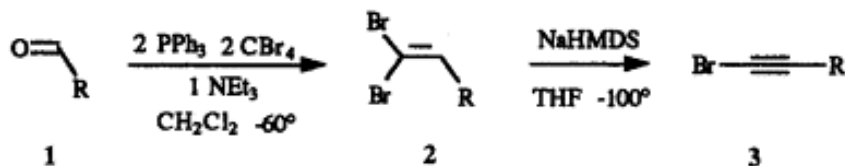
# COREY-FUCHS ALKYNE SYNTHESIS





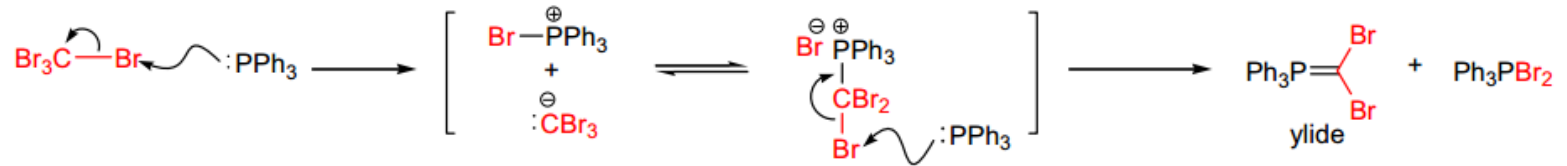
I) addition of the aldehyde (1 equivalent) to a mixture of triphenylphosphine (4 equivalents) and carbon tetrabromide (2 equivalents) in  $\text{CH}_2\text{Cl}_2$ , at  $0^\circ\text{C}$  in 5 minutes;

II) addition of the aldehyde to a reagent, which is prepared by mixing zinc dust (2 equivalents) with  $\text{Ph}_3\text{P}$  (2 equivalents) and  $\text{CBr}_4$  (2 equivalents) in  $\text{CH}_2\text{Cl}_2$  at  $23^\circ\text{C}$  for 24-30h (the reaction time to form the alkyne is 1-2h).

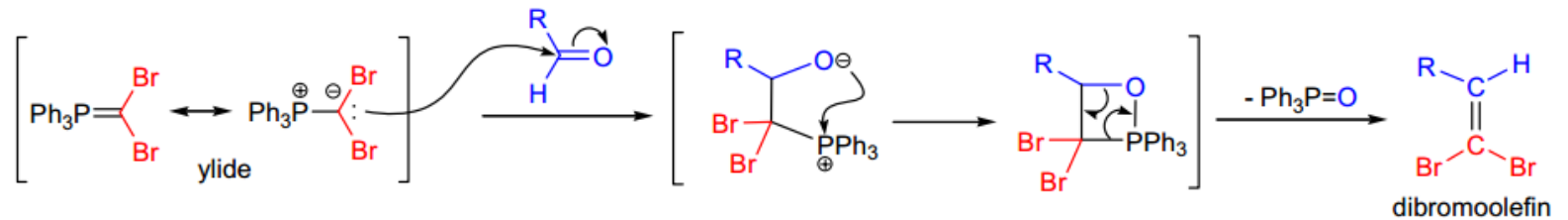


*Tetrahedron Letters*. **1994**, 35, 3529–3530.

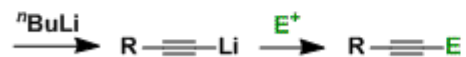
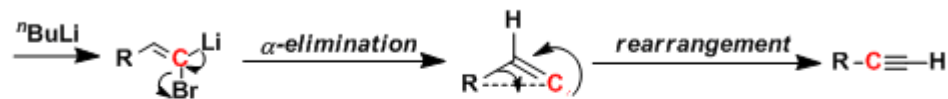
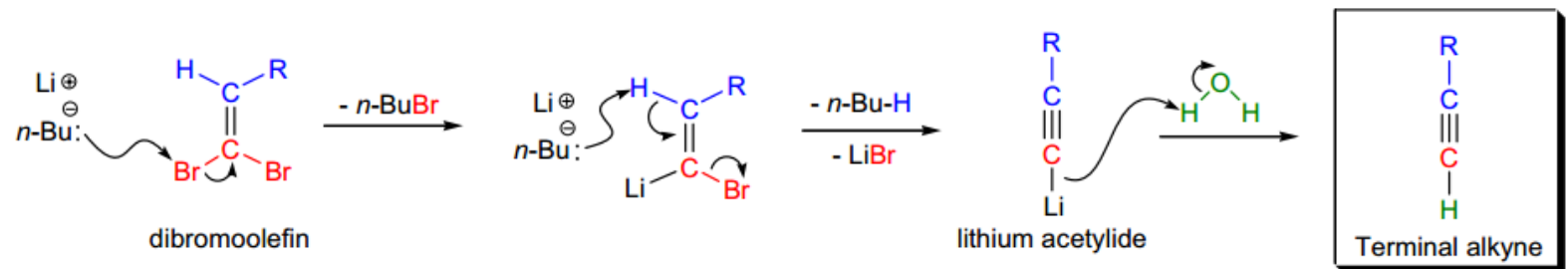
Generation of the phosphorous ylide:



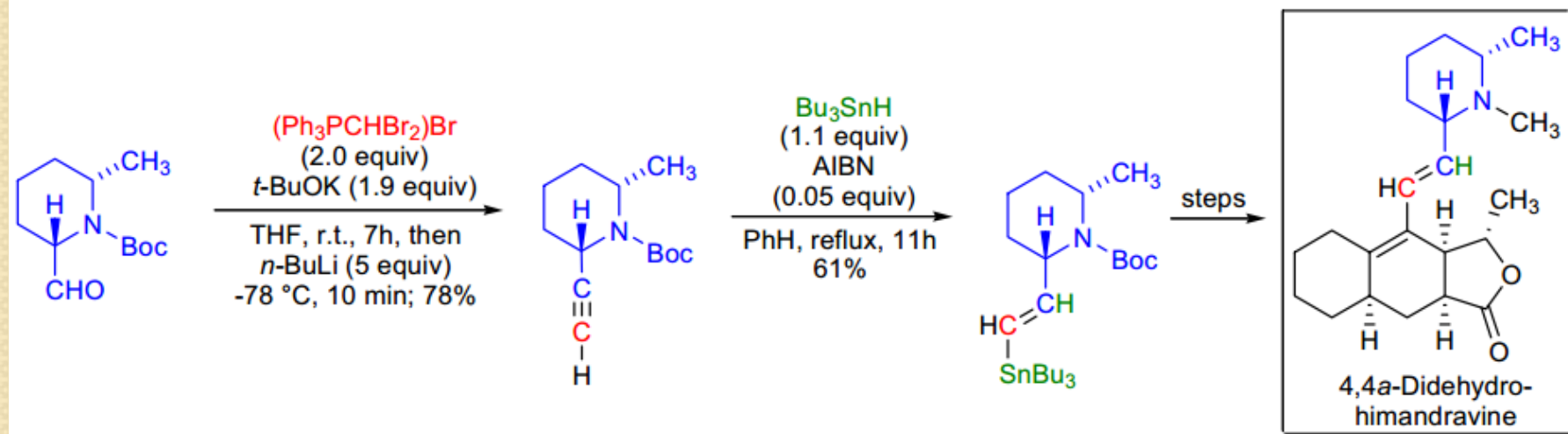
Reaction of the phosphorous ylide with the aldehyde:



Conversion of dibromoolefin to terminal alkyne:



The total synthesis of Galubulimima alkaloid **4,4a-didehydrohimandravine**, using an *intramolecular Diels-Alder reaction* and a *Stille coupling* as the key steps, was accomplished in the laboratory of M.S. Sherburn.<sup>8</sup> The required vinylstannane intermediate for the *Stille coupling* was prepared via the *one-pot Corey-Fuchs reaction*,<sup>5</sup> followed by *radical hydrostannylation*.



W.J. Kerr and co-workers carried out the total synthesis of (+)-taylorione starting from readily available (+)-2-carene and using a *modified Pauson-Khand annulation* with ethylene gas as the key step.<sup>9</sup> The key terminal alkyne intermediate was prepared by the *Corey-Fuchs reaction*. Interestingly, the ketal protecting group was sensitive to the excess of  $\text{CBr}_4$ , so the addition of this reagent had to be monitored carefully to cleanly transform the aldehyde to the desired dibromoolefin.

