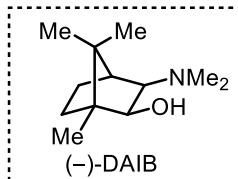
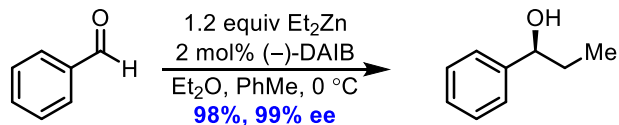
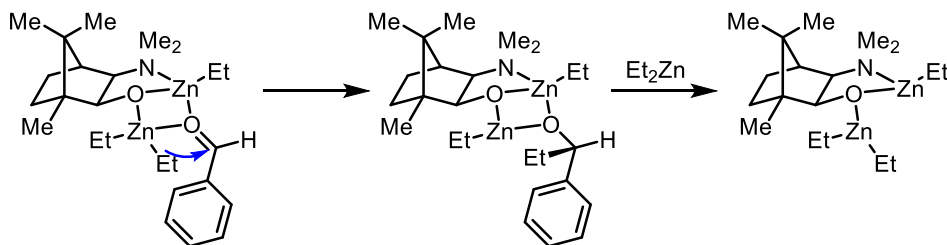
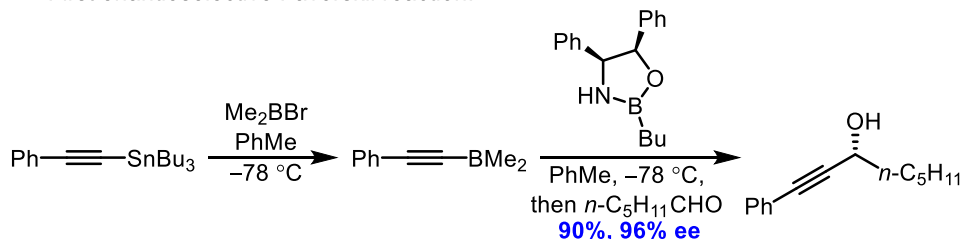


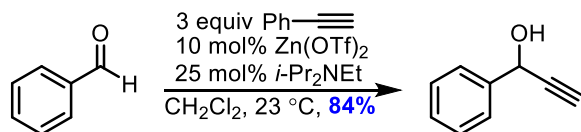
Historical development

1. First enantioselective addition of Et₂Zn to aldehydes:Noyori, *J. Am. Chem. Soc.* **1986**, *108*, 6072

2. First enantioselective Favorskii reaction:

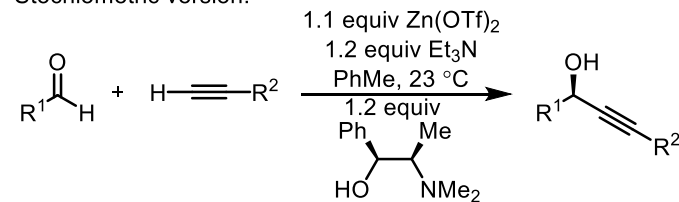
Corey, *J. Am. Chem. Soc.* **1994**, *116*, 3151

3. Catalytic generation of Zn-acetylides:

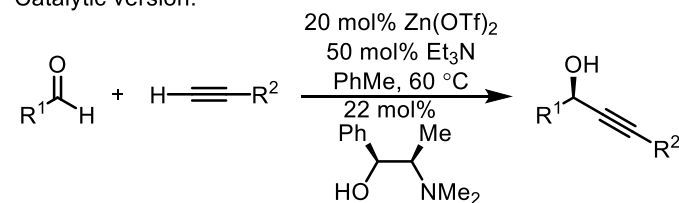
Carreira, *J. Am. Chem. Soc.* **1999**, *121*, 11245

Enantioselective addition of Zn-acetylides

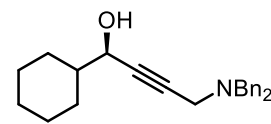
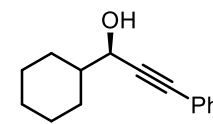
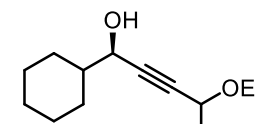
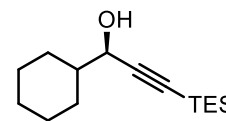
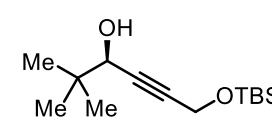
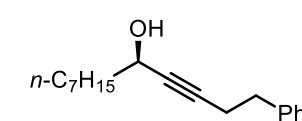
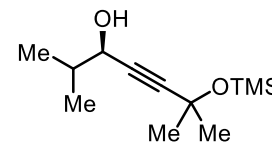
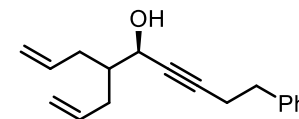
Stoichiometric version:

Carreira, *J. Am. Chem. Soc.* **2000**, *122*, 1806

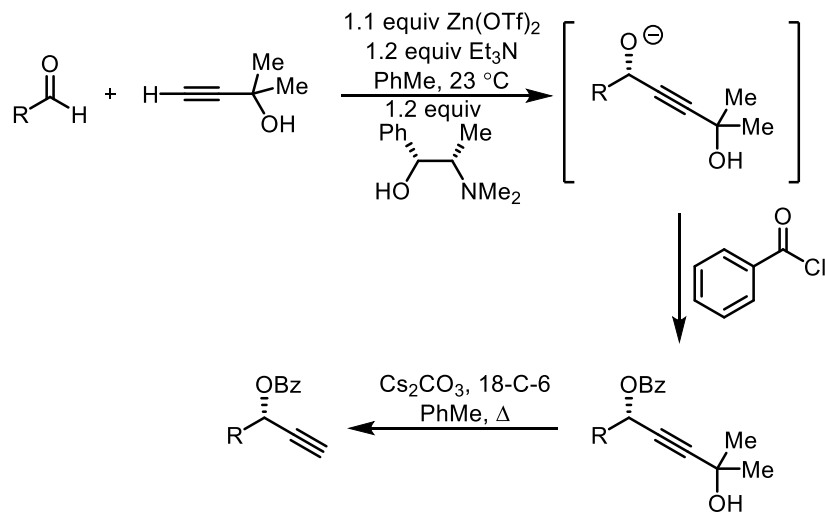
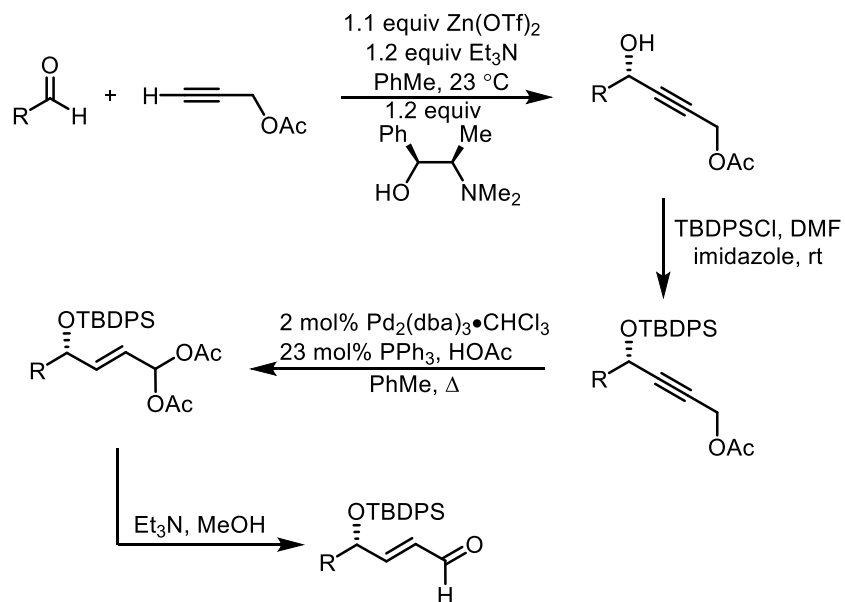
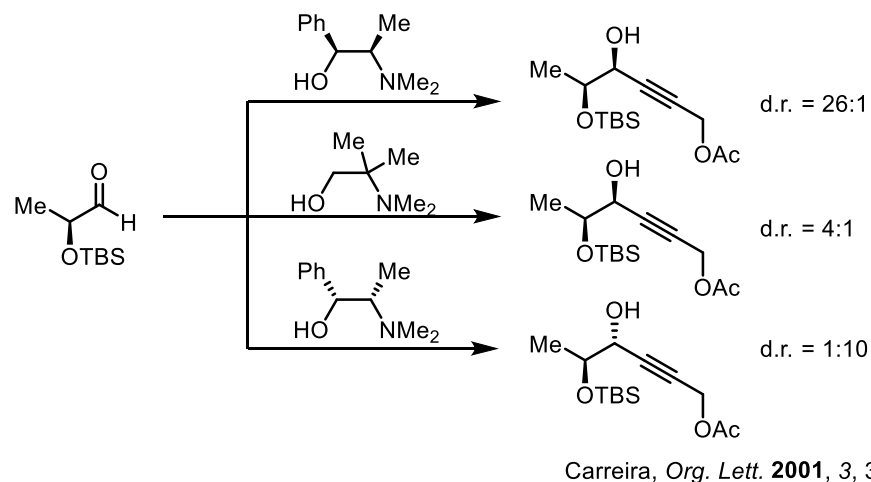
Catalytic version:



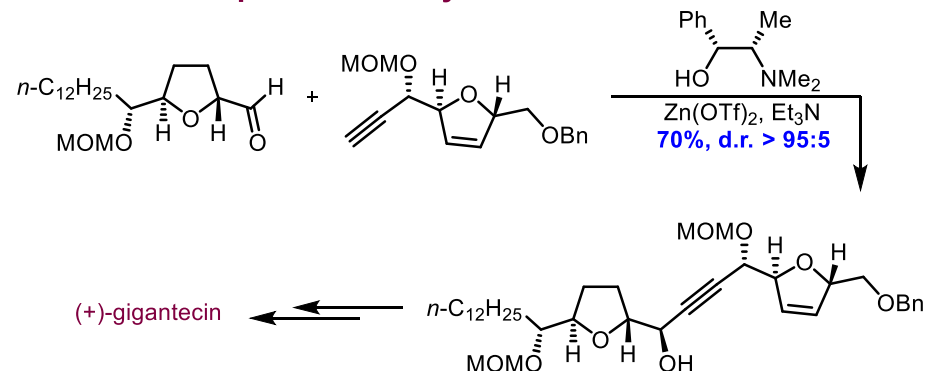
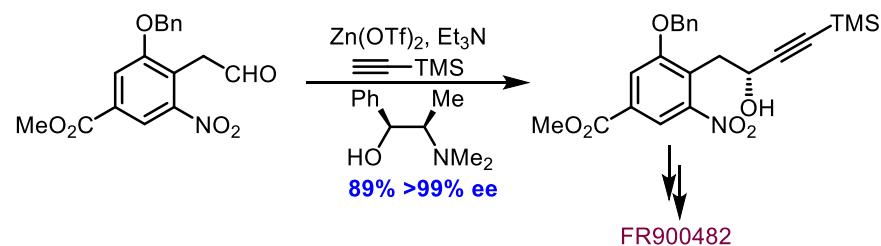
Selected substrates from the substrate scope:

**91%, 97% ee****94%, 86% ee****88%, 94% ee****85%, 96% ee****81%, 93% ee****45%, 92% ee****77%, 98% ee****80%, 93% ee**Carreira, *J. Am. Chem. Soc.* **2001**, *123*, 9687

Additional transformations:

Carreira, *Org. Lett.* **2000**, 26, 4233Carreira, *Org. Lett.* **2001**, 3, 3017Carreira, *Org. Lett.* **2001**, 3, 3017

Selected examples in total synthesis

Crimmins, *J. Am. Chem. Soc.* **2004**, 126, 12790Trost, *Org. Lett.* **2004**, 6, 1745