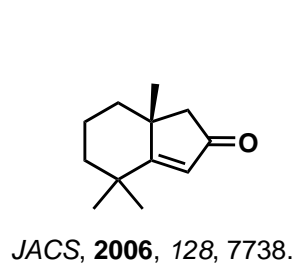
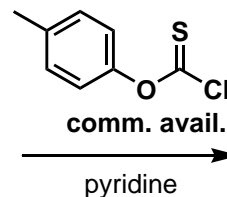
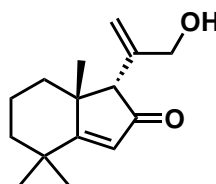


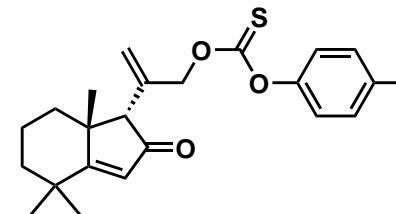
**Substrate controlled
Pd-catalyzed alkylation**



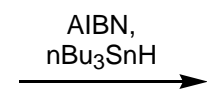
PhOK (2.5 eq)
Pd(PPh₃)₄ (5 mol %)
OL, **2005**, 7, 5461.
JOC, **1983**, 58,3435.



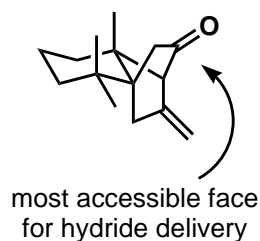
JOC, **1989**, 54, 5678.
TL, **1988**, 29, 107.
J. Carb. Chem. **2004**, 23, 83.



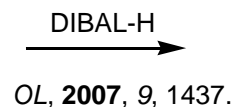
**Diastereoselective
radical cyclization**



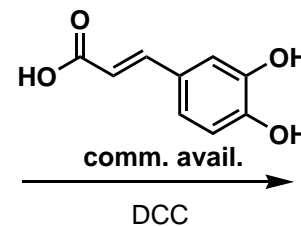
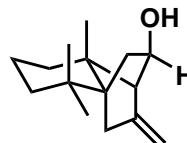
TL, **1985**, 26, 5927.
OL, **2000**, 2, 2479,
TL, **1988**, 29, 5789.
JACS, **1988**, 110, 6911.
Synlett, **1990**, 575.
JOC, **1998**, 63, 4151.



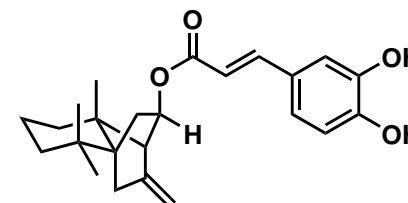
**Facial selective
reduction**



OL, **2007**, 9, 1437.



J. Chem. Res. **2005**, 12, 802.



Myltaylane Caffate
J. Nat. Prod., **2007**, 70, 856.

Key points: Protecting group free synthesis

Five steps utilizing a readily available chiral nonracemic starting material and commercially available reagents
Substrate controlled diastereoselective Pd-catalyzed alkylation, radical cyclization, and reduction