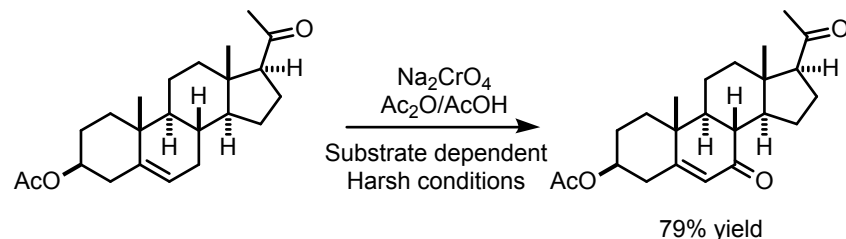


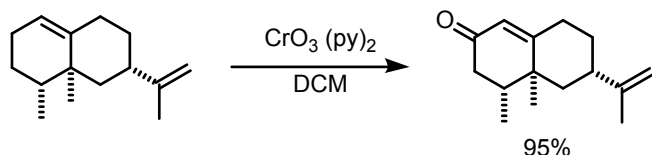
Historical inspiration

1. Chromium allylic oxidation

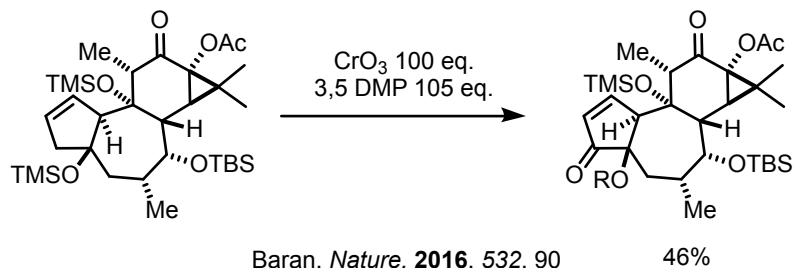


Marshall, *ibid.* **1957**, 79, 6308

2. Evolution of Chromium Allylic Oxidation - Heterocyclic Base Complexes

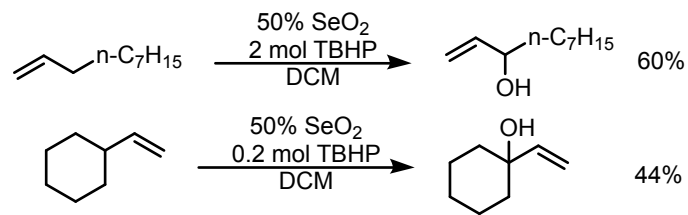


Dauben, *J. Org. Chem.* **1969**, 34, 3587



Baran, *Nature.* **2016**, 532, 90

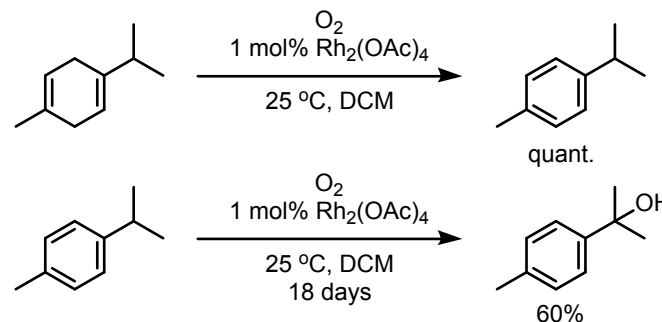
3. Selenium Dioxide Allylic Oxidation:



Sharpless, *Aldrichimica Acta.* **1979**, 12, 63

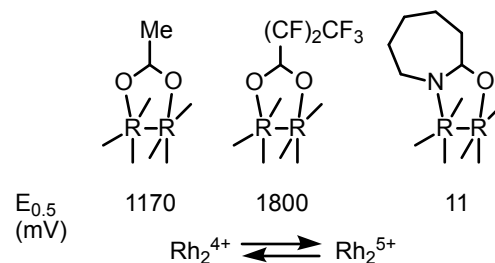
Rh₂(cap)₄ Catalyzed Allylic Oxidation

Preliminary Studies : A glimpse into the future

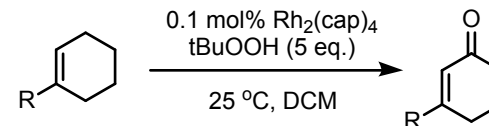


Doyle M.P, *J. Molec. Catal.* **1984**, 26, 259

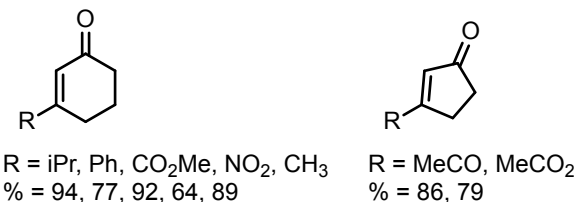
Evaluation of Rhodium Ligands: The Potentials



The New System:



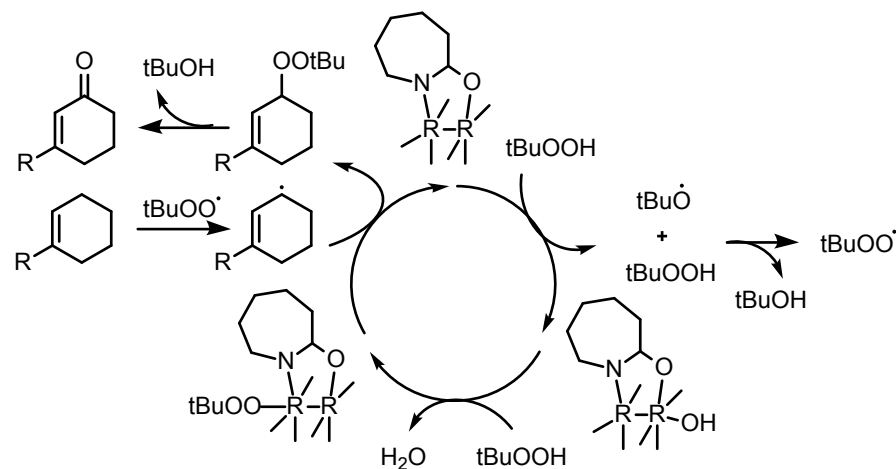
Selected Substrates:



Doyle M. P, *J. Am. Chem. Soc.* **2004**, 126,13622

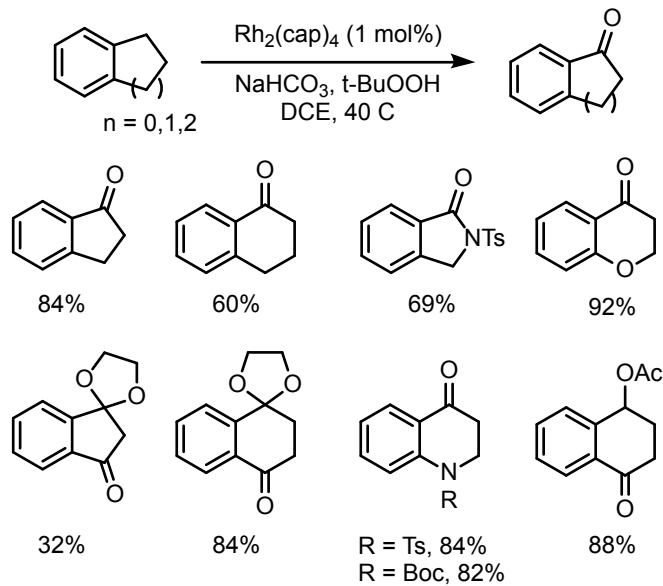
Sarlah Group MOTW: Dirhodium(II) Caprolactamate Catalyzed Allylic Oxidation (M. P. Doyle)

Proposed Mechanism:



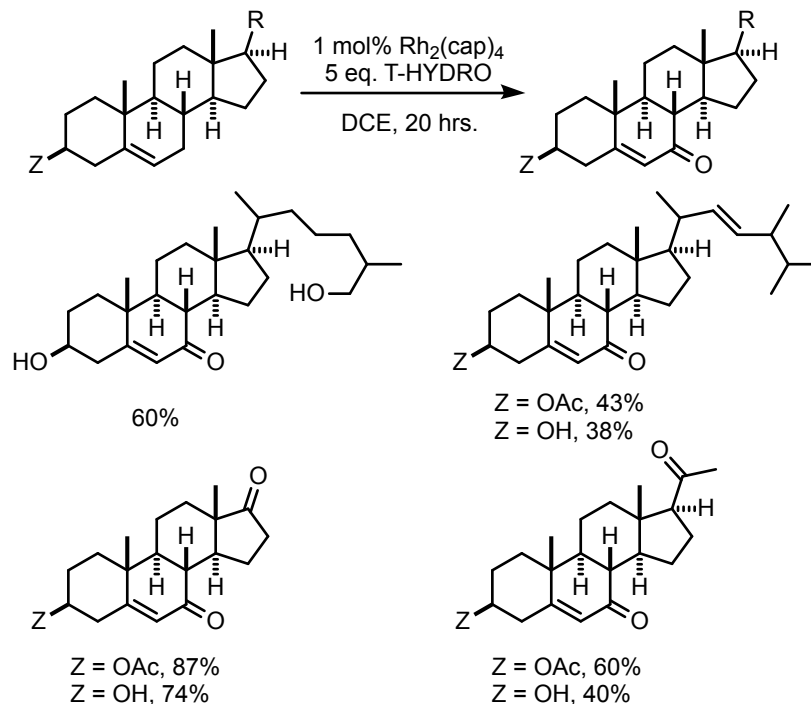
Doyle M. P, *J. Am. Chem. Soc.* **2004**, 126, 13622

Benzylic Oxidation Scope Expansion:



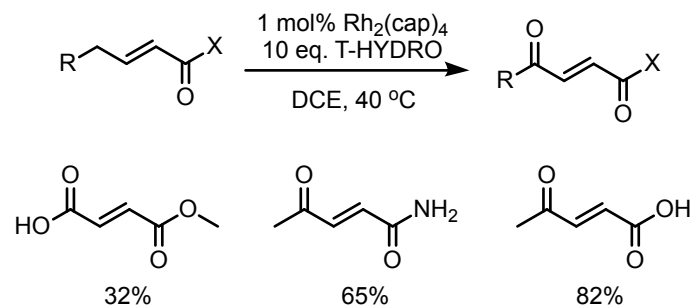
Doyle M. P, *Org. Lett.* **2005**, 7, 23, 5167

Steroidal Allylic Oxidations:



Doyle M. P, *Org. Lett.* **2007**, 9, 26, 5349

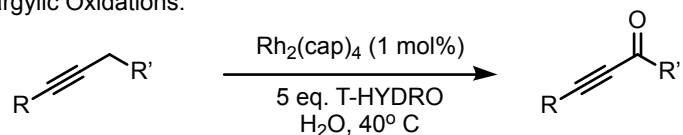
γ Oxidation of α, β unsaturated linear systems:



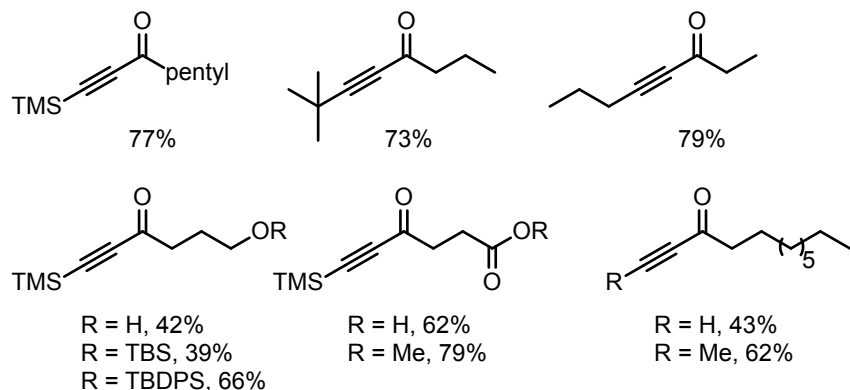
Doyle M. P, *J. Org. Chem.* **2009**, 74, 2, 730

Sarlah Group MOTW: Dirhodium(II) Caprolactamate Catalyzed Allylic Oxidation (M. P. Doyle)

Propargylic Oxidations:

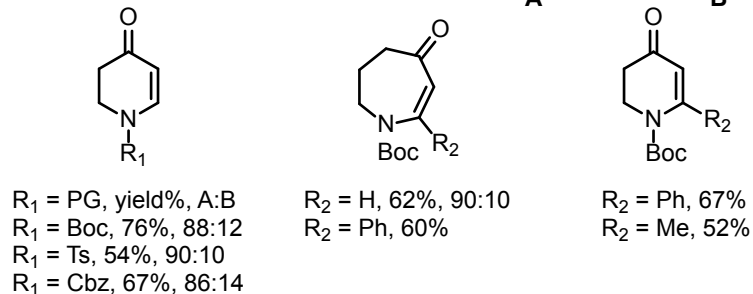
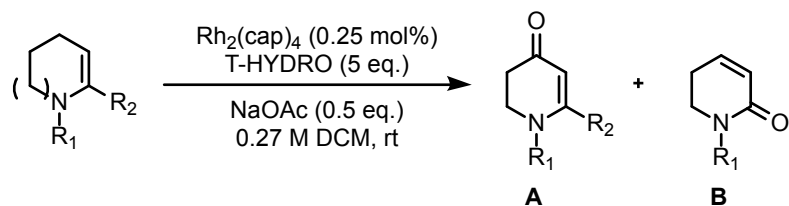


Notable Substrates:



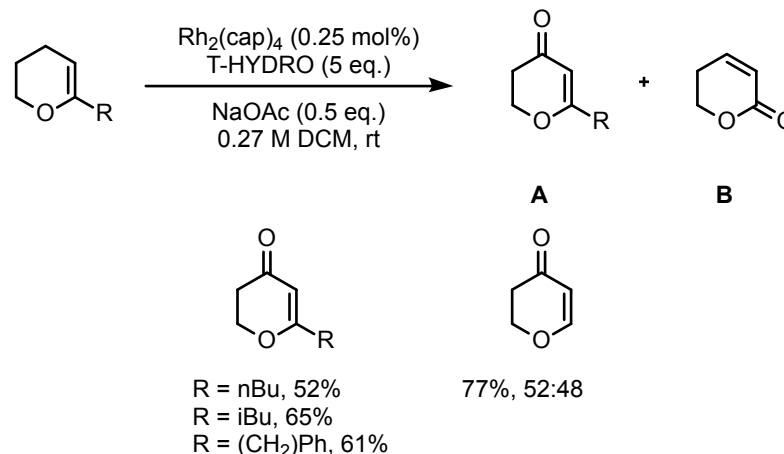
Doyle M. P, *J. Org. Chem.* **2008**, *73*, 11, 4317

Allylic Oxidation of Cyclic Enamides:



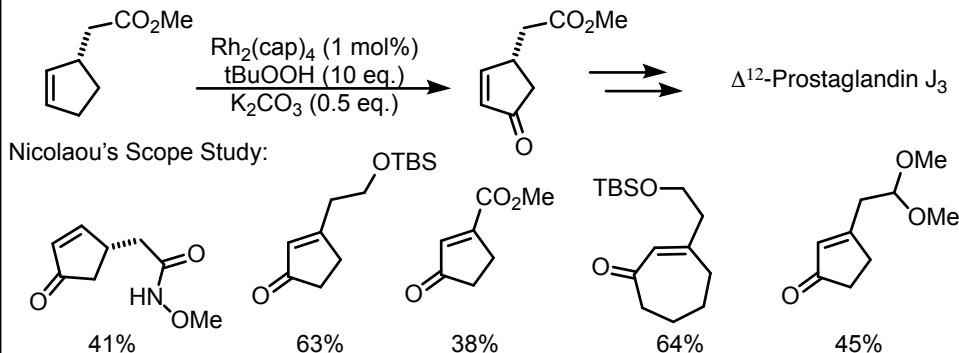
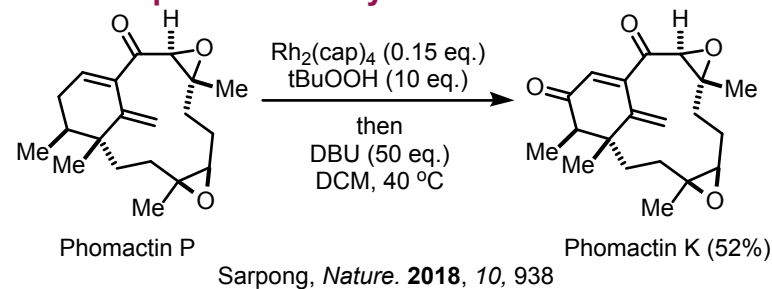
Doyle M. P, *J. Org. Chem.* **2017**, *82*, 16, 8506

Allylic Oxidations of Pyrans:



Doyle M. P, *J. Org. Chem.* **2017**, *82*, 16, 8506

Selected Examples in Total Synthesis:



Nicolaou, *Chem. Eur. J.* **2016**, *22*, 8559