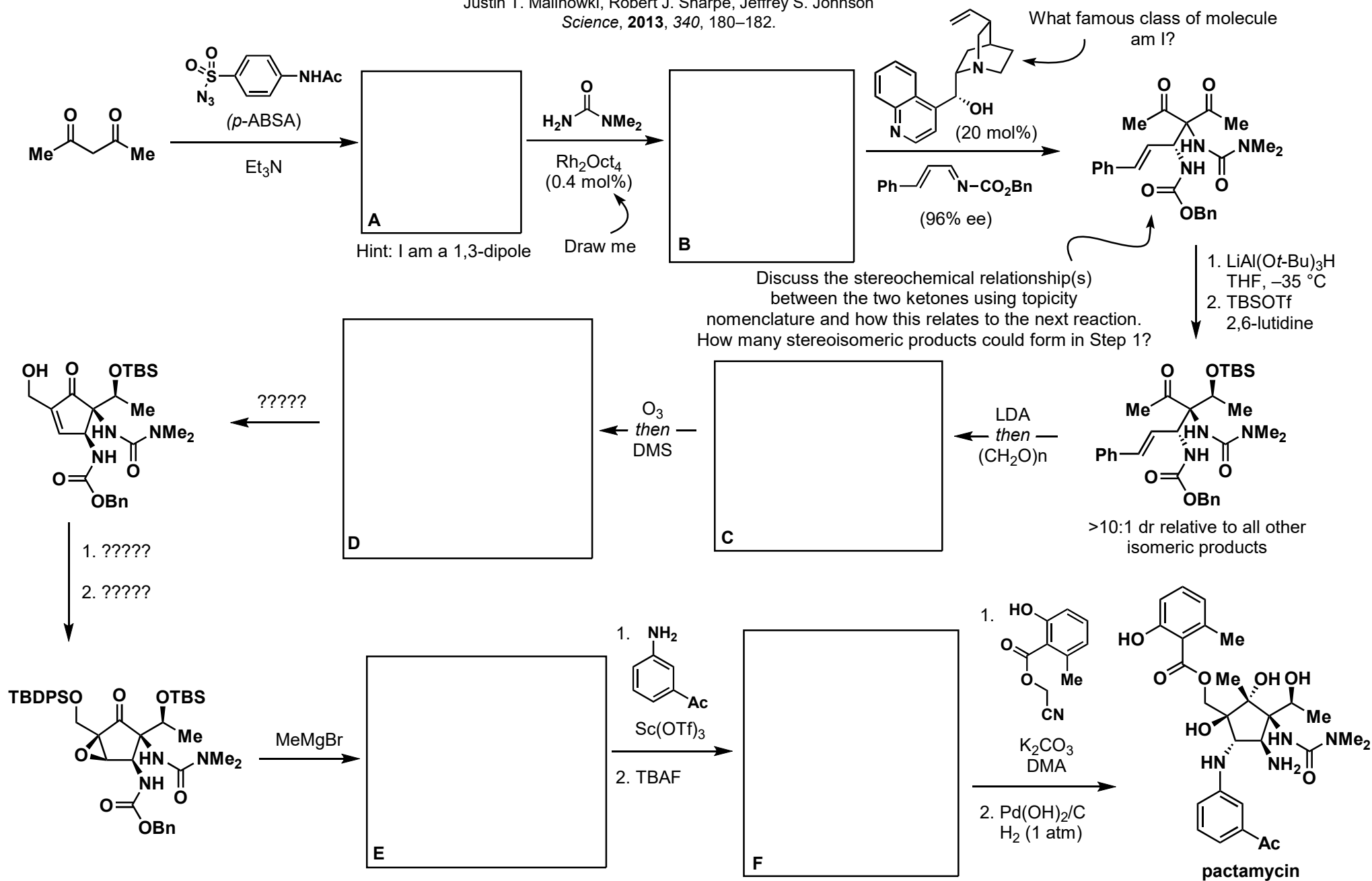


# Enantioselective Synthesis of Pactamycin, a Complex Antitumor Antibiotic

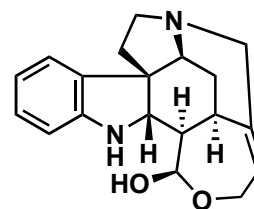
Justin T. Malinowki, Robert J. Sharpe, Jeffrey S. Johnson  
*Science*, 2013, 340, 180–182.



Zn, H<sub>2</sub>SO<sub>4</sub>  
MeOH/H<sub>2</sub>O  
reflux

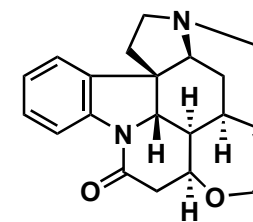


1. NaOMe, MeOH  
RT  
2. DIBAL, DCM  
-78 °C



Wieland-Gumlich  
aldehyde

HO<sub>2</sub>C-CH<sub>2</sub>-CO<sub>2</sub>H  
Ac<sub>2</sub>O, NaOAc  
HOAc, 110 °C



(-)-strychnine