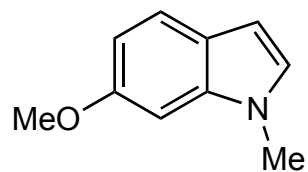


# Total Synthesis of Vindoline

D. L. Boger et al., *Org. Lett.* **2005**, 7, 4539-4542

D. L. Boger et al., *JACS* **2006**, 128, 10596-10612



1. POCl<sub>3</sub>, DMF,  
then aq NaOH  
**reaction name?**

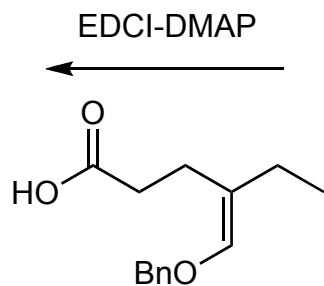
2. nitromethane,  
ammonium acetate  
**reaction name?**



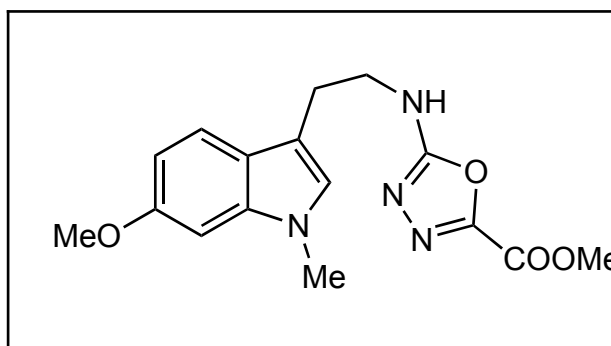
LiAlH<sub>4</sub>



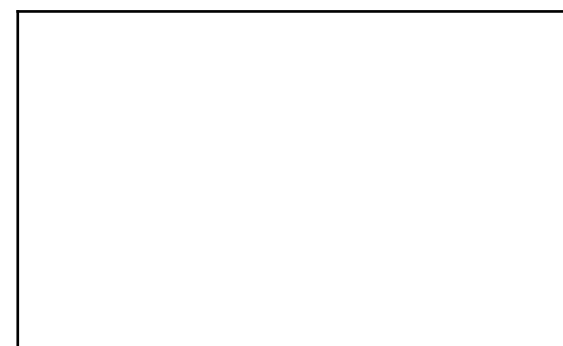
1. CDI  
2. H<sub>2</sub>NHNCOCO<sub>2</sub>Me



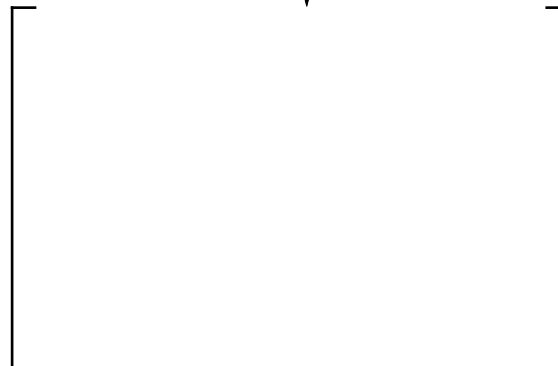
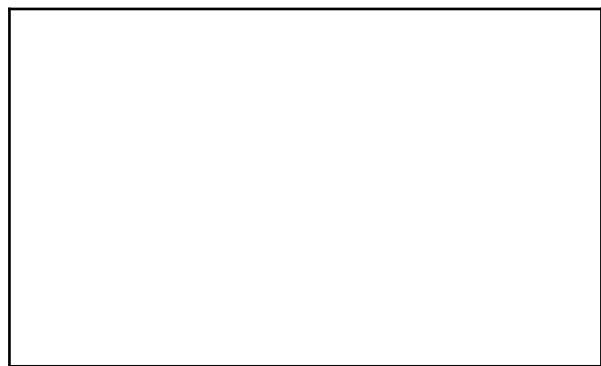
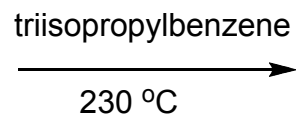
EDCI-DMAP



TsCl, Et<sub>3</sub>N

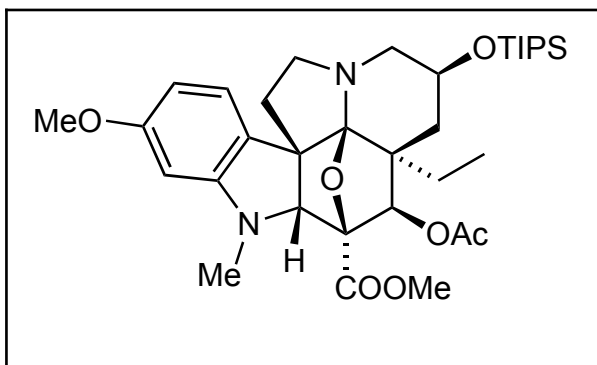


CDI = carbonyl diimidazole



name this type of a reactive intermediate

1. LDA, TMSO-OTMS; then TIPSOTf
2. Lawesson's reagent
3. Ra-Ni
4. Ac<sub>2</sub>O, NaOAc



1. H<sub>2</sub>, Pt, MeOH-AcOH
2. TBAF
3. PPh<sub>3</sub>, DEAD

