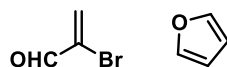


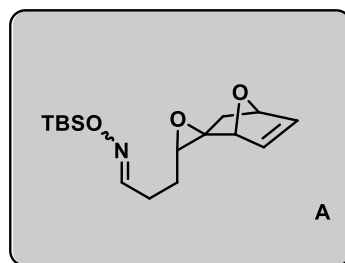
Concise Enantioselective Total Synthesis of (–)-Virosaine A

Jonathan M. E. Hughes and James L. Gleason

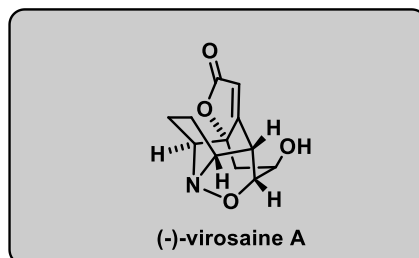
Angew. Chem. Int. Ed. **2017**, 56, 10830–10834



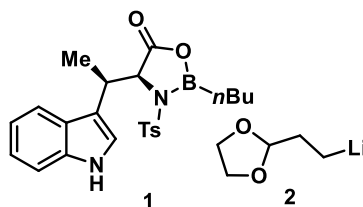
1-4



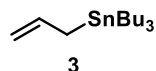
5-10



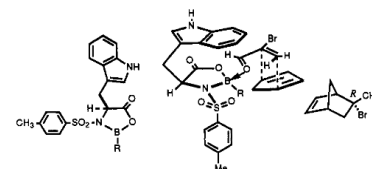
- 1) **1**, DCM, –78 °C then **2** –78 °C
- 2) 5% aq. HCl, THF
- 3) NH₂OTBS, DCM
- 4) NaH, THF, 0 °C



- 5) AcOH, MW 120 °C
- 6) CDI, KOH toluene 60 °C, then *n*-BuNH₂
- 7) *s*-BuLi, THF –78 °C then Br₂ –78 °C
- 8) AIBN, **3**, benzene, 85 °C
- 9) LiAlH₄, THF, 70 °C
- 10) O₃, then Me₂S then DMP, pyridine then Al₂O₃, EtOAc



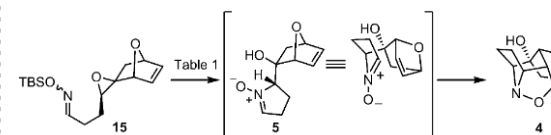
1: Role of **1**?



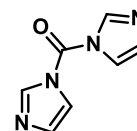
J. Am. Chem. Soc. **1991**, 113, 8966-8967

5: Draw the mechanism.

Hint: 3 Transformations



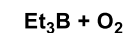
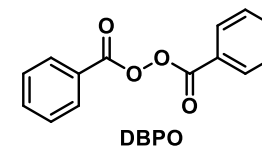
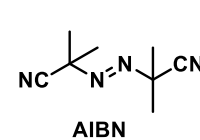
6: Structure of CDI



8: Structure of AIBN?

Name 2 alternative radical starters?

Name of the reaction?



Keck allylation