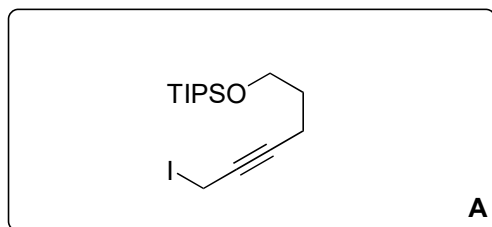


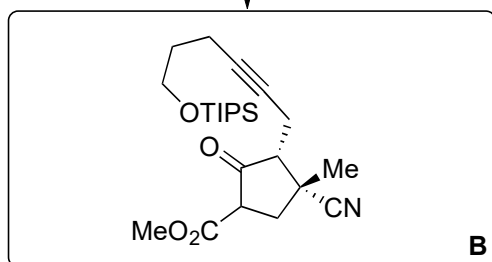
Concise and Stereoselective Synthesis of Annotinolides C, D, and E

Pei Qu and Scott Snyder

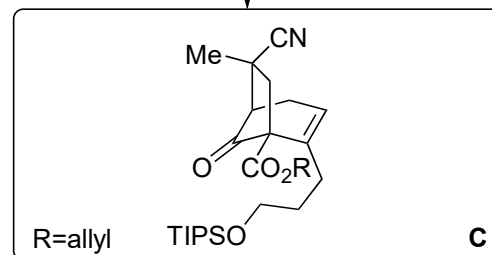
J. Am. Chem. Soc. **2021**, *143*, 11951–11956



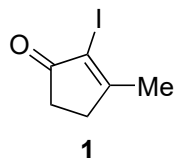
1–3



4–5



6–11



- 1) **1**, *i*-PrMgCl, then CuCN·2LiCl, then **A**
- 2) Et₃Al, TMSCN, then HCl
- 3) LDA, NCCO₂Me

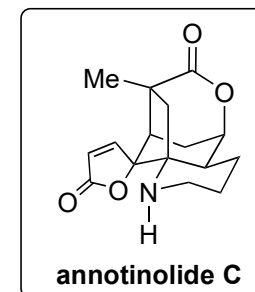
- 2) Name of reagent, which is generated *in situ*? Nagata's reagent.
- 3) Name of reagent? Mander's reagent

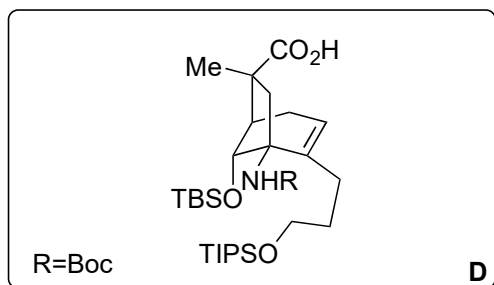
- 4) TBSOTf, OH
- 5) JohnPhosAu-(NCMe)SbF₆

- 5) Hint: Key cyclization step.

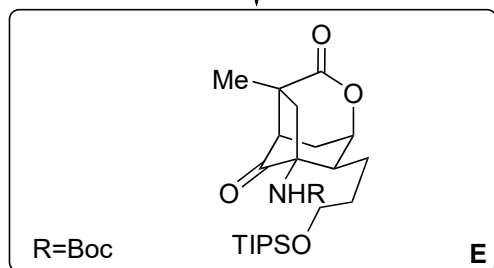
- 6) CeCl₃, NaBH₄
- 7) TBSOTf, 2,6-lutidine
- 8) Pd(PPh₃)₄, pyrrolidine
- 9) DPPA, Et₃N, *t*-BuOK
- 10) DIBAL-H
- 11) NaClO₂

- 9) Name of reaction? Curtius rearrangement.

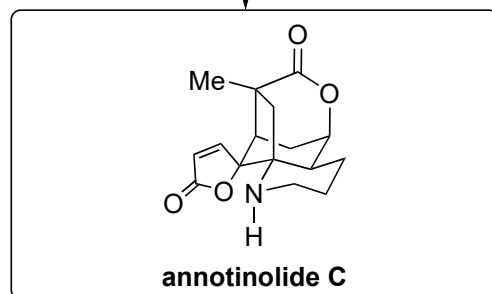




12–15



16–19



- 12) NIS
 13) TBAF
 14) *n*-Bu₃SnH, Et₃B, air
 15) Dess–Martin periodinane

- 16) Li—C≡C—CO₂Me
 17) H₂, Pd/C, quinoline, *then* silica gel
 18) TBAF
 19) MsCl, Et₃N, *then* TFA, *then* NaHCO₃

13) Hint: Only one protecting group is removed.