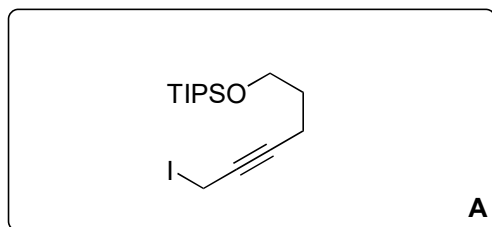


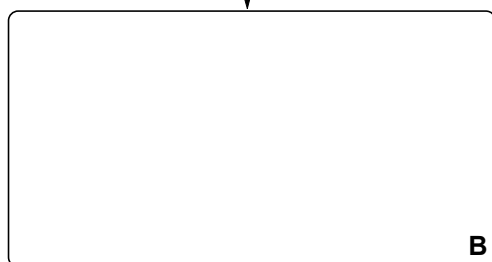
Concise and Stereoselective Synthesis of Annotinolides C, D, and E

Pei Qu and Scott Snyder

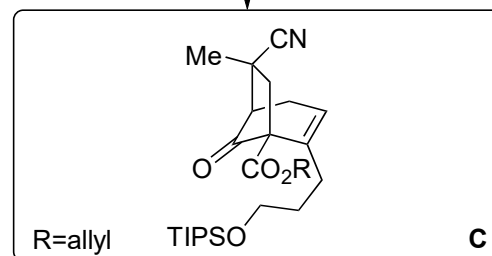
J. Am. Chem. Soc. **2021**, *143*, 11951–11956



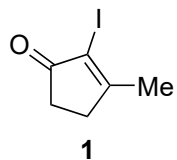
1–3



4–5



6–11



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

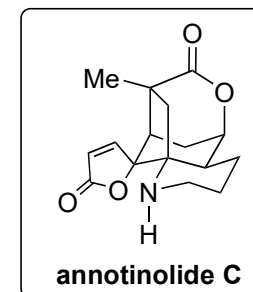
2) Name of reagent, which is generated *in situ*?

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

5) Hint: Key cyclization step.

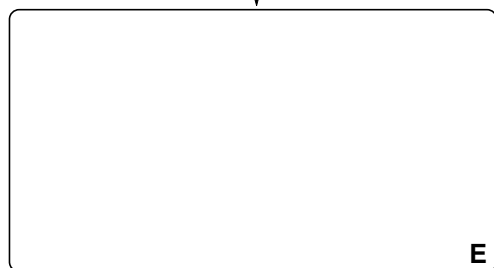
- 6) CeCl₃, NaBH₄
- 7) TBSOTf, 2,6-lutidine
- 8) Pd(PPh₃)₄, pyrrolidine
- 9) DPPA, Et₃N, *t*-BuOK
- 10) DIBAL-H
- 11) NaClO₂

9) Name of reaction?

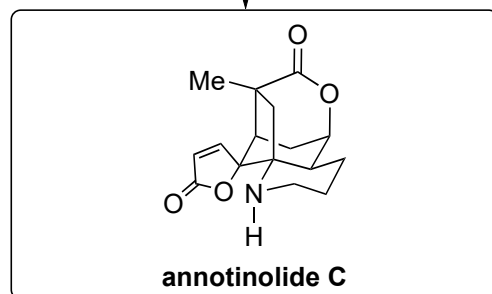




12–15



16–19



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

13) Hint: Only one protecting group is removed.

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