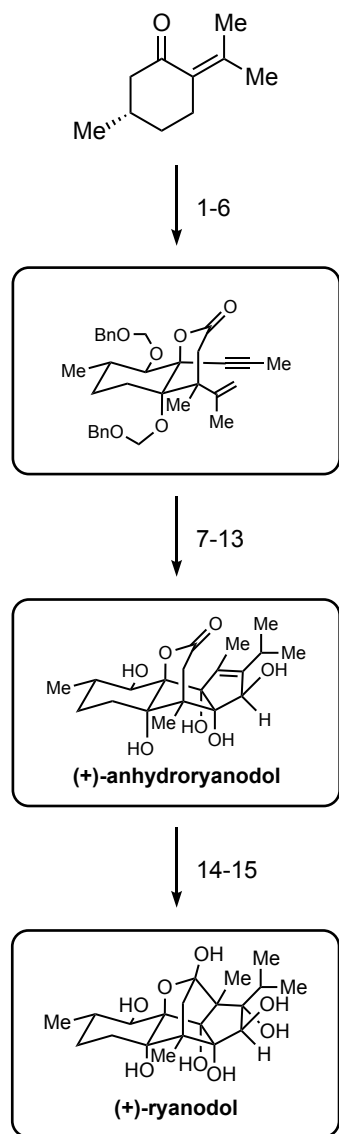
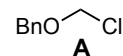


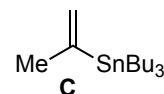
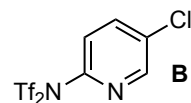
A 15-step synthesis of (+)-ryanodol
 Kangway V. Chuang, Chen Xu, Sarah E. Reisman
Science. **2016**, *353*, 912-915.



- 1) KHMDS, then Davis oxaziridine (2.4 equiv.)
- 2) **A**, Hünig's base, TBAI
- 3) Me—C≡C—MgBr
- 4) O₃/O₂, then Ph₃P
- 5) EtO—C≡C—MgBr
- 6) AgOTf (2 mol%)



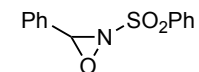
- 7) vinyl magnesium bromide, CuI
- 8*) [RhCl(CO)₂]₂, CO (1atm)
- 9*) SeO₂, 4Å MS
- 10) **B**, iPr₂NEt
- 11*) **C**, PdCl₂(PPh₃)₂, LiCl
- 12) LiBH₄
- 13) H₂, Pd(OH)₂/C



- 14) CF₃CO₃H, Na₂HPO₄
- 15) Li⁰, NH₃/THF

Give the name of each step with a star
 What is the specificity of these **steps** ?

- 1) Give the structure of Davis oxaziridine



- 8) This reaction is known to be performed with another metal, which one ? Give the mechanism.
Pauson-Khand reaction - originally with Cobalt.

- 14 & 15) Give the mechanism for both transformations

Before this synthesis, only two groups succeeded to synthesize Ryanodol: Deslongchamps (37 steps) and Inoue (35 steps).