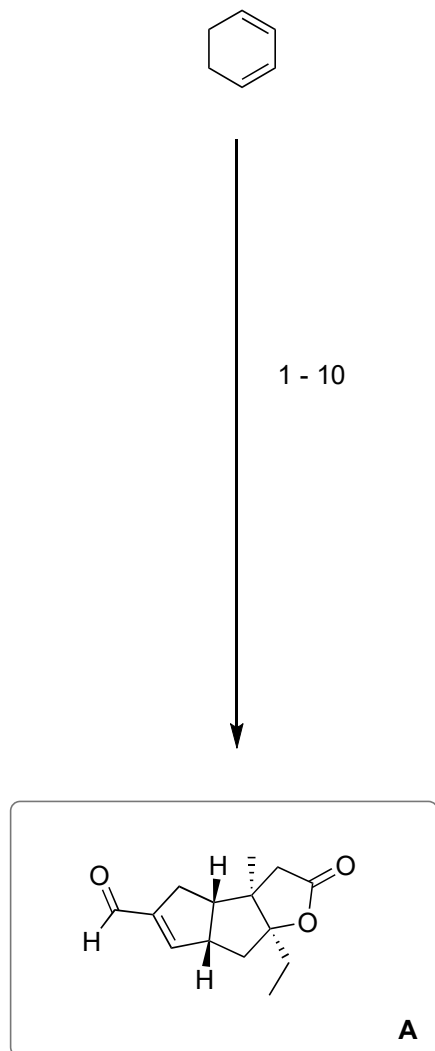
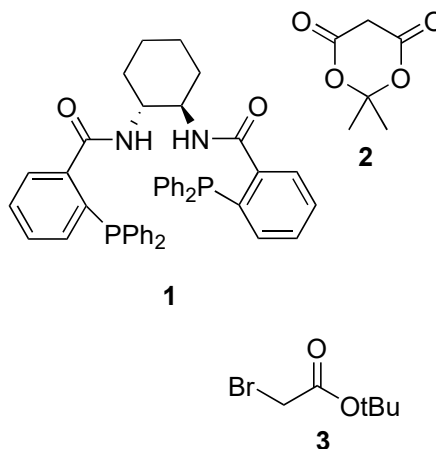


Total syntheses of schilancidilactones A and B, schilancitrilactone A, and 20-epi-schilancitrilactone A via late-stage nickel-catalyzed cross coupling

Hengtao Wang, Xiunan Zhang, Pingping Tang; Chem. Sci., 2017,8, 7246-7250.



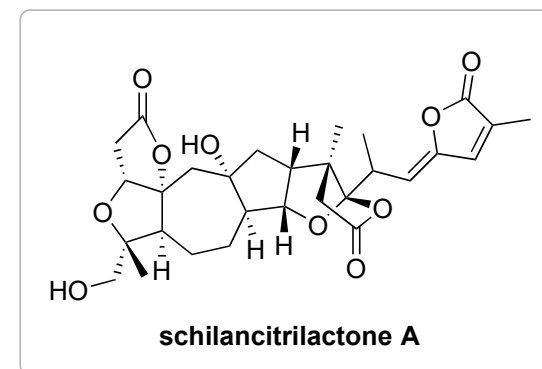
- 1) TPP (cat.), O₂, *hν* then thiourea
- 2) BzCl
- 3) [{Pd(allyl)Cl}₂], **1**, **2**, K₂CO₃, MeOH, DIPEA
- 4) NaH, CH₃I
- 5) NaBr, 180 °C
- 6) LDA, **3**
- 7) TFA
- 8) EtMgBr
- 9) O₃ then Me₂S
- 10) (Bn₂NH₂)(OCOCF₃)

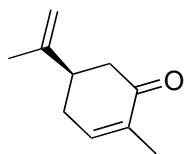


3) Hint: ¹³C NMR (101 MHz, CDCl₃): δ 171.5, 168.0, 133.7, 123.3, 75.3, 53.2, 51.4, 38.0, 22.4, 21.7.

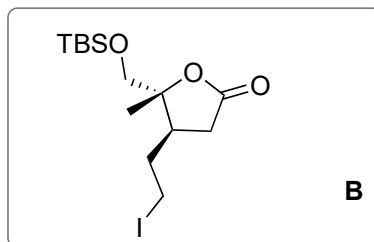
5) Name of the reaction?

Krapcho decarboxylation

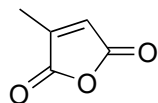




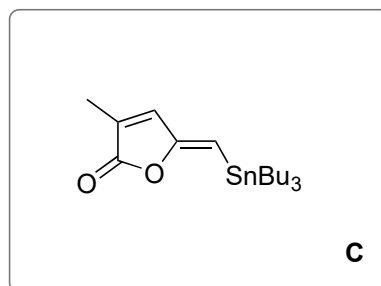
11-18



- 11) H_2O_2 (aq), NaOH
- 12) H_2SO_4
- 13) NaIO_4
- 14) I_2 , KI, NaHCO_3
- 15) NaBH_4
- 16) PPh_3 , I_2 , ImH
- 17) NaOMe then HCl
- 18) TBSCl

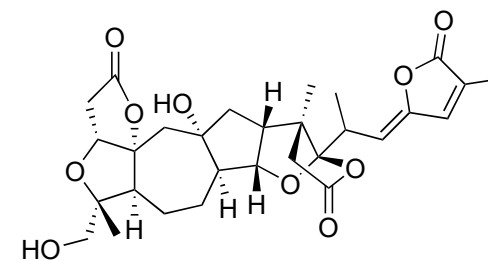


19-23



- 19) $\text{PPh}_3\text{CHCO}_2t\text{Bu}$
- 20) TFA
- 21) Br_2
- 22) Et_3N
- 23) $[\{\text{Pd}(\text{allyl})\text{Cl}\}_2]$ (5 mol %), $(\text{Bu}_3\text{Sn})_2$, LiCl

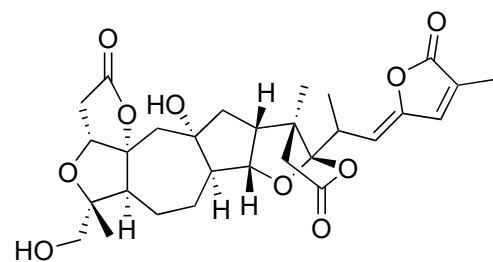
- 11) Name of starting material?
(-)-carvone



schilancitrilactone A

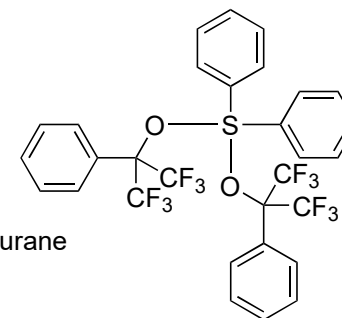
A + B

24-34



schilancitrilactone A

- 24) LDA
- 25) CuCl_2 , EDC
- 26) CuI , Zn
- 27) LDA, P(OMe)_3 , O_2
- 28) Ac_2O
- 29) LDA
- 30) Martin's sulfurane
- 31) L-selectride
- 32) Co(acac)_2 , O_2 , PhSiH_3
- 33) PyHBr_3
- 34) **C**, Ni(cod)_2 , dppm



30) Structure of Martin's sulfurane

32) Name of the reaction?
Mukaiyama hydration