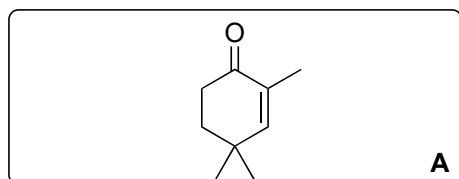
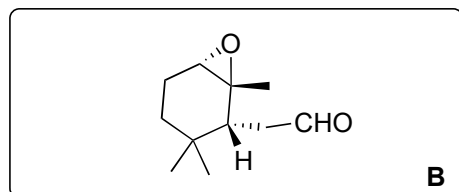


# Total Synthesis of Kamebanin

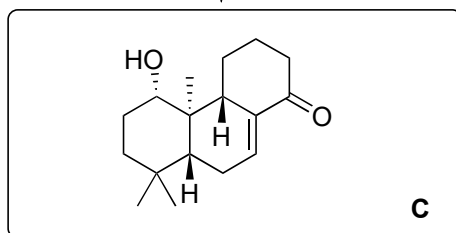
T. Suzuki, W. Ikeda, A. Kanno, K. Ikeuchi, K. Tanino  
Chem. Eur. J. **2023**, 29, e20220351



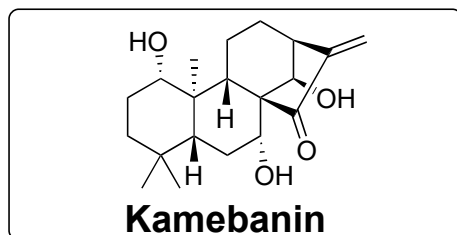
↓ 1-4



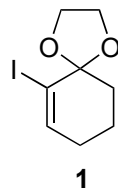
↓ 5-6



↓ 7-17



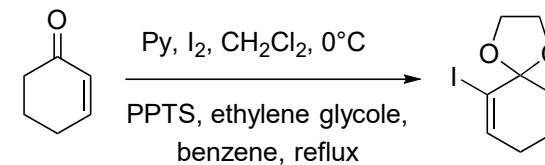
- 1) DIBAL, CH<sub>2</sub>Cl<sub>2</sub>, -78°C
- 2) MeC(OMe)<sub>2</sub>NMe<sub>2</sub>, *t*BuPh, 150°C
- 3) *m*CPBA, NaHCO<sub>3</sub>, CH<sub>2</sub>Cl<sub>2</sub>, 0°C
- 4) Cp<sub>2</sub>ZrCl<sub>2</sub>, LiAlH(O*t*-Bu)<sub>3</sub>, THF, rt



- 5) **1**, *n*BuLi, THF, -78°C then TsOH H<sub>2</sub>O, rt
- 6) Cp<sub>2</sub>TiCl<sub>2</sub>, Zn, THF, rt
- 7) MOMCl, DIPEA, CH<sub>2</sub>Cl<sub>2</sub>, rt
- 8) LiCH<sub>2</sub>CN, THF, -78°C
- 9) VO(acac)<sub>2</sub>, TBHP, CH<sub>2</sub>Cl<sub>2</sub>, rt
- 10) Me<sub>3</sub>Al, THF, 0°C to 35°C then LiNEt<sub>2</sub>, HMPA, -78°C to -50 °C
- 11) MOMCl, DIPEA, (CH<sub>2</sub>Cl)<sub>2</sub>, 50°C
- 12) KHDMS, TIPSOTf, toluene, rt
- 13) KO*t*-Bu, Ph<sub>3</sub>PCH<sub>3</sub>Br, THF, rt
- 14) Ca, MeOH, 0°C
- 15) SeO<sub>2</sub>, *n*PrOH, 100°C
- 16) DMP, NaHCO<sub>3</sub>, (CH<sub>2</sub>Cl)<sub>2</sub>, rt
- 17) 6 M HCl, THF, rt

- 2) Name of the reaction Eschenmoser-Claisen rearrangement
- 4) Name of the reagent? Schwartz reagent

Possible synthesis of **1**?



- 6) Name of the active specie Nugent–RajanBabu reagent
- 10) Type of reaction Formal semi-pinacol rearrangement
- 12) Type of reaction Thorpe-Ziegler-type reaction  
Hint: ring formation

- 16) Structure and synthesis of DMP

