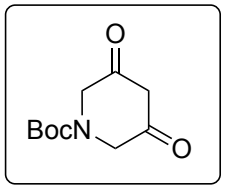
University of Zurich[UZH]

# *Total Synthesis of Lissodendoric Acid A*

F.M. Ippoliti, N.J. Adamson, L.G. Wonilowicz, D.J. Nasrallah, E.R. Darzi, J.S. Donaldson and Neil K. Garg*,
*Science,* **2023,** 379, 6629, 261-265

***Gademann Group***
***Micha Hofer***
***30.01.2024***




i) NBS, AIBN, DCM, 0 °C
ii) NaH, DME, 0 °C to rt,
*then* $Tf_2O$, - 46 °C
**55% over two steps**

**A**

$Boc_2N$ (10), $Cp_2ZrHCl$, CuBr x DMS
THF, 40 °C, **63%**

**B**

i) (*R*)-CBS, $BH_3$ x $SMe_2$, THF, 30 °C
ii) $EtCO_2Cl$, pyr., DCM, 0°C to rt
**66% over two steps, 90-92% ee**

**C**

$PhMe_2SiLi$, CuCN, $PPh_3$
$Et_2O$/THF, - 78 °C, **69%, 90% ee**

**D**

**1**, CsF, $Bu_4NBr$
MeCN, - 20 °C, **73%, > 20:1 d.r.**

**E**

i) PDC, *t*BuOOH, benzene, **36-49%**
ii) $Cu(OAc)_2$, BDP, PMHS,
toluene, **89%, > 20:1 d.r.**

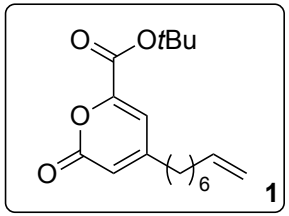
**F**

i) MeCN, 80 °C,
*then* $Cu(OTf)_2$, MeCN, 40 °C
ii) Acryloyl chloride, $Et_3N$, DCM, 0 °C to rt
**48% over two steps**

**G**

i) HG-II, DCM, 40 °C, **83%**
ii) Rh(COD)(acac), $PhSiH_3$,
DCM, 40 °C, **38%**
iii) TFA, DCM, - 78 °C to rt, **77%**

***Lissodendoric Acid A***



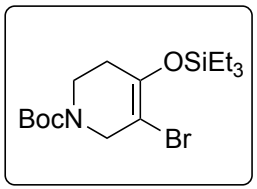

**1**

University of Zurich[UZH]

# Towards Keramaphidin B

M.M. Mehta, J.A.M. Gonzalez, J.L. Bachman, and Neil K. Garg*,
*Org. Lett.,* **2023,** 25, 5553-5557

***Gademann Group***
***Micha Hofer***
***30.01.2024***




nBuLi, *then* Allyl chloroformate
THF, - 78 °C to - 50 °C, **82%**

**H**

$Pd(PPh_3)$
Toluene, **88%**

**I**

i) HG-II, **2**, DCM, 40 °C
ii) $H_2$, Pd/C, basic alumina, MeOH/THF (1:1)
iii) KHMDS, *then* Comins' Reagent, THF, - 78 °C to rt
**23% over three steps**

**J**

**3**, CsF
MeCN, **56%, > 20:1 d.r.**

**K**

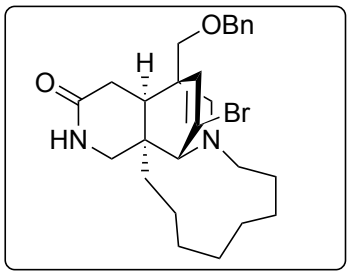
i) PDC, *t*BuOOH, benzene
ii) $Cu(OAc)_2$, BDP, PMHS, *t*BuOH, toluene
**48% over two steps, > 20:1 d.r.**

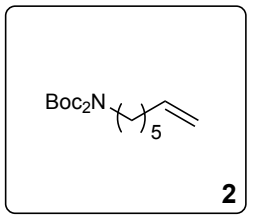
**L**

i) MeCN, 80 °C
ii) TFA
**70% over two steps, > 20:1 d.r.**

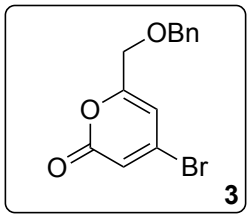
**M**

$H^+$, $CH_2O$, Δ




**2**




**3**