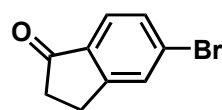


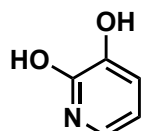
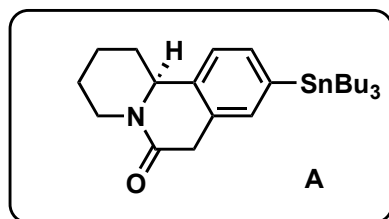
Total Synthesis of (–)-Flueggeacosine C

Liu, L.; Olson, T. L.; Wood, J. L.

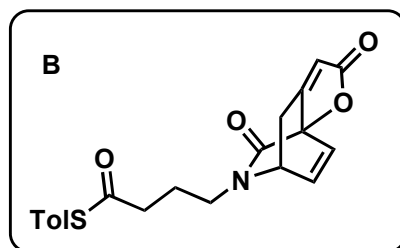
Org. Lett., 2024, 26, 7341–7346.



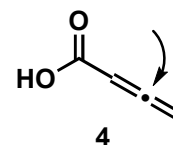
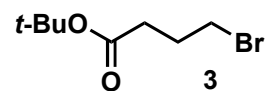
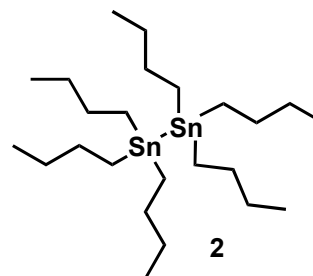
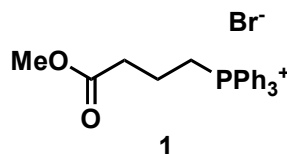
1-11



12-17



- 1, KHMDS, THF, 0 → 25 °C
- TFA, CHCl₃, 25 °C
- BH₃, THF then NaOH, H₂O₂, H₂O, 0 → 25 °C
- DMP, CH₂Cl₂, 25 °C
- NH₂OH·HCl, *i*-PrOH, 40 °C
- PIDA, AcOH, 25 °C
- LiOMe, THF, 0 °C
- Zn, AcOH, 110 °C
- DIBAL-H, CH₂Cl₂, –78 °C
- BF₃·OEt₂, Et₃SiH, CH₂Cl₂, 0 °C
- Pd(PPh₃)₄, **2**, PhMe, 110 °C



- KOH, BnBr, EtOH, 0 → 40 °C
- NaH, **3**, DMF, 0 → 25 °C
- H₂ (1 atm), Pd/C, EtOH, 25 °C
- DCC, **4**, CH₂Cl₂, 45 °C, MW
- TMSOTf, 2,6-lutidine, CH₂Cl₂, 25 °C
- DMAP, DCC, TolSH, CH₂Cl₂, 25 °C

Step 1: Name of the unsubstituted hydrocarbon in the starting material?

Indane

Step 6 + 7: Which name reaction is this sequence reminiscent of?

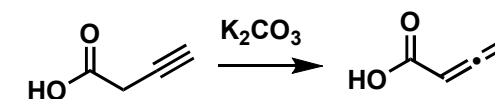
Beckmann rearrangement

Step 10: What is the name of the heterocyclic scaffold generated?

Benzoquinolizidine

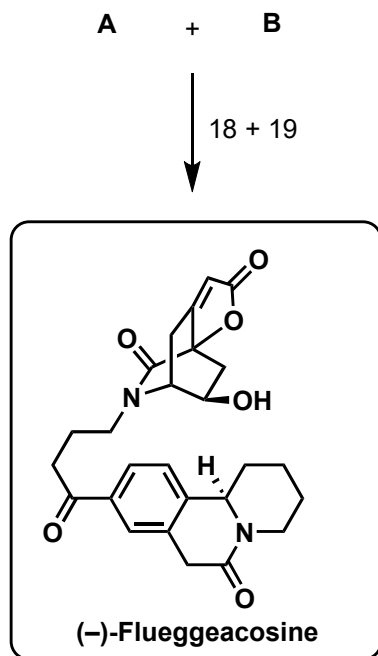
Step 15: How would you make **4**?
Estimate the ¹³C NMR shift of the highlighted carbon.

217 ppm



Step 17: Name at least 5 alternative reagents to DCC.

DIC, EDCI, TCFH, HATU, BOP/PyBOP, T3P, CDI



18. **A, B**, Pd₂(dba)₃, CuDPP, AsPPh₃, THF/Hex, 25 °C
 19. CuCl, Xantphos, B₂pin₂, LiOt-Bu, H₂O, THF, 60 °C
 then NaBO₃, H₂O, 25 °C

Step 18: Name of the reaction?

Liebeskind-Srogl coupling

Step 19: Justify the stereo- and regioselectivity.

Cu coordination to the butenolide olefin.