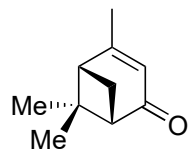


# Total Synthesis of the Nominal Structure of (+)-Talaromyolide D

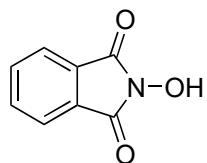
B. Qin, A. Szyperek, M. Tomanik *J. Am. Chem. Soc.* **2025**, *147*, 34, 31221–31227.



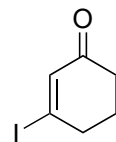
1-16



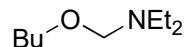
- 1) NaIO<sub>4</sub>, RuCl<sub>3</sub>·3H<sub>2</sub>O
- 2) *m*-CPBA, 50 °C
- 3) **1**, EDC, DMAP
- 4) **2**, NiCl<sub>2</sub>·6H<sub>2</sub>O, 2,2'-bpy, AgNO<sub>3</sub>, (+)-Mg/(-)-RVC
- 5) Ni(acac)<sub>2</sub>, AlMe<sub>3</sub> then **3** then *m*-CPBA



**1**

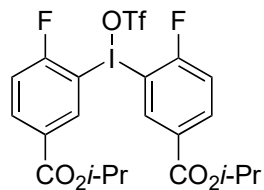


**2**

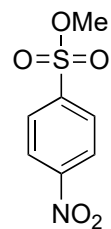


**3**

- 6) Pd/C, H<sub>2</sub>
- 7) 4M HCl, 100 °C
- 8) NH<sub>2</sub>OMe·HCl
- 9) MOMCl, *i*-Pr<sub>2</sub>NEt
- 10) Pd(OAc)<sub>2</sub>, Ag<sub>2</sub>CO<sub>3</sub>, PivOH, **4**
- 11) Ti(O-*i*Pr)<sub>4</sub>, EtMgBr
- 12) B(OH)<sub>3</sub>
- 13) Ph<sub>3</sub>PMeBr, *t*-BuOK
- 14) Fe(acac)<sub>3</sub>, PhSiH<sub>3</sub>, **5**
- 15) NaH, DMF, 90 °C
- 16) LiOH



**4**



**5**

2) Name of the reaction:

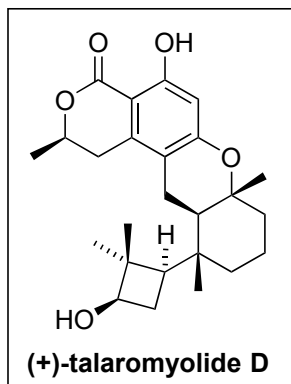
13) Name of the reaction:

14) Name of the reaction:

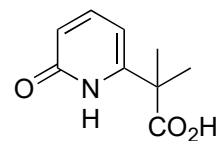
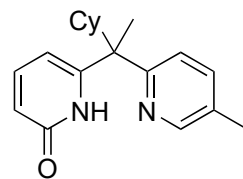
A



17-26



- 17) Pd(OAc)<sub>2</sub>, KOAc, 1,4-benzoquinone, O<sub>2</sub>, **6**, 110 °C then CH<sub>2</sub>N<sub>2</sub>
- 18) NaH, BnBr
- 19) LiOH
- 20) Pd(OAc)<sub>2</sub>, **7**, CsOAc, H<sub>2</sub>O<sub>2</sub>, 60 °C then CH<sub>2</sub>N<sub>2</sub>
- 21) NaH, PhNTf<sub>2</sub>
- 22) Pd(PPh<sub>3</sub>)<sub>4</sub>, LiCl, *n*-Bu<sub>3</sub>Sn-allyl
- 23) PdCl<sub>2</sub>, CuCl, O<sub>2</sub>, DMF/H<sub>2</sub>O
- 24) BH<sub>3</sub>·DMS, (*S*)-*n*-Bu-CBS
- 25) 6M HCl, 50 °C
- 26) Pd/C, H<sub>2</sub>



22) Name of the reaction:

23) Name of the reaction:

24) Name of the reaction: