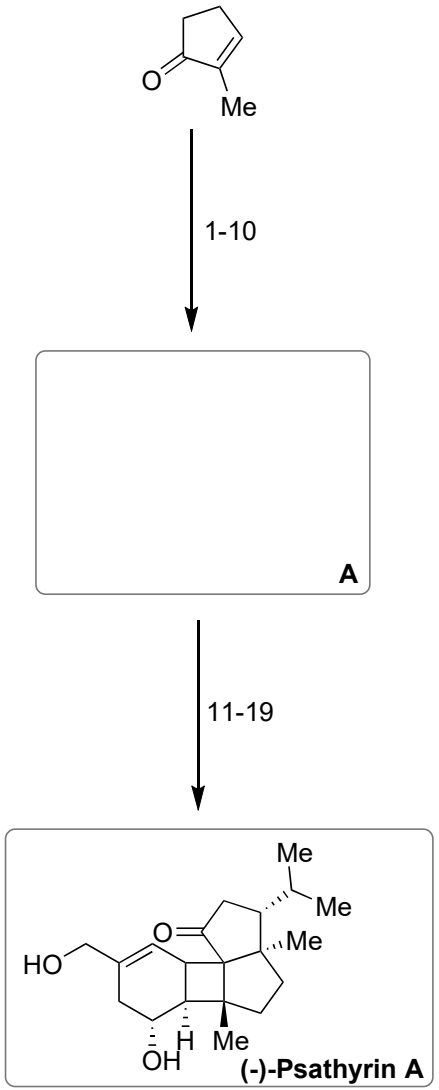
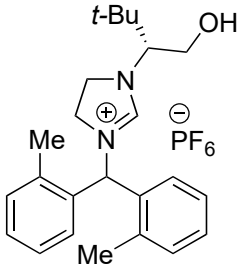
Total Synthesis of (−)-Psathyrin A Enabled by Radical Cyclization

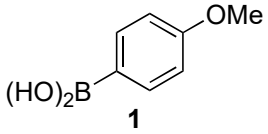
Weizhao Zhao, Reem Al-Ahmad, Mingji Dai, *J. Am. Chem. Soc.* **2025**, 147, *36*, 32365–32369.



1) $Cu(OTf)_2$, *i*-PrMgBr, **L1**,
then HMPA, 1-bromo-2-butyne
2) Comins' reagent, KHMDS
3) **1**, $PdCl_2(dppf)$, K_3PO_4
4) *m*-CPBA, then *p*-TsOH
5) $AuCl(PPh_3)$, AgOTf
6) $LiAlH_4$
7) Li, NH_3 (*l*), *then* 1M HCl
8) Ac_2O, Et_3N, DMAP
9) HCl (1M in Et_2O)
10) $Fe(acac)_3$, $PhSiH_3$



L1



1

11) TBAF (2 mol%), HMDS, TMS-imidazole
then OsO_4
12) TBSOTf, 2,6-lutidine
13) LiHMDS, Manders' reagent
14) PhSeBr, pyridine, *then* H_2O_2
15) $CeCl_3 \cdot 7H_2O$, $NaBH_4$, MeOH
16) NaH, CS_2, *then* MeI
17) AIBN, *n*-Bu_3SnH
18) DIBAL-H, *then* potassium sodium tartrate,
then TBSCl, imidazole
19) IBX, *then* HF·pyridine

3) Name of the reaction:
4) Name of the rearrangement:
5) Name of the reaction:

7) Name of the reaction:

10) Name of the reaction:

11) Name of the reaction:

15) Name of the reaction:
16+17) Name of the reaction: