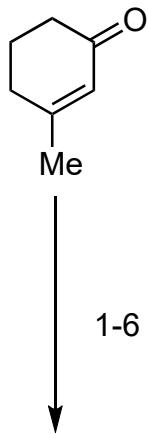


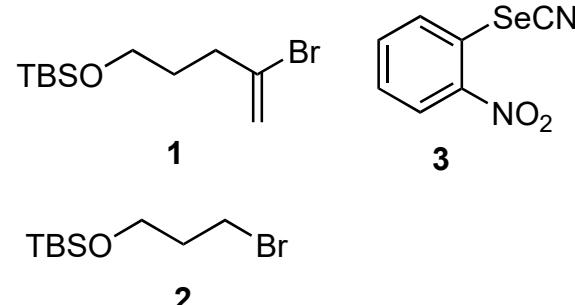
## Total Synthesis of the Isodon Diterpene Sculponeatin N

B.J. Moritz, D.J. Mack, L. Tong, R.J. Thomson.  
*Angew. Chem. Int. Ed.* **2014**, *53*, 2988–2991.



1-6

- 1) MeMgBr, CuI, LiCl *then* CH<sub>2</sub>O
- 2) TBDPSCl, Imidazole
- 3) TMSCH<sub>2</sub>CO<sub>2</sub>Et, LDA
- 4) Me(OMe)NH·HCl, *i*PrMgCl
- 5) 1, *t*BuLi
- 6) AlCl<sub>3</sub>



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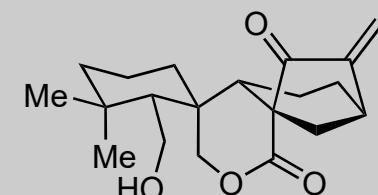
- 7) 2, *t*BuLi, (2-thiophene)-Cu(CN)Li, BF<sub>3</sub>·Et<sub>2</sub>O
- 8) HF, MeCN
- 9) 3 (2.5 eq.), Bu<sub>3</sub>P (3 eq.), *then* H<sub>2</sub>O<sub>2</sub>
- 10) TMSOTf, NEt<sub>3</sub>
- 11) MeLi, allyl iodide
- 12) Grubbs II

3) Name reaction?

6) Name reaction?

8) Hint: regioselective deprotection

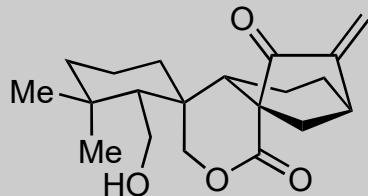
9) Name reaction?



Sculponeatin N

B

13-22



Sculponeatin N

- 13) PdCl<sub>2</sub>, CuCl, O<sub>2</sub>
- 14) KHMDS, Comins reagent
- 15) TBAF, THF, rt
- 16) Bu<sub>3</sub>SnH, AIBN, *then* HCl
- 17) SeO<sub>2</sub>, *t*BuOOH
- 18) TMSOTf, NEt<sub>3</sub>
- 19) O<sub>3</sub>, pyridine, *then* Me<sub>2</sub>S
- 20) LiBH<sub>4</sub>, 50 °C
- 21) TBAF
- 22) MnO<sub>2</sub>

13) Name reaction?

14) Structure of Comins reagent?

15) Hint: no deprotection, think of TBAF as mild base

17) Name reaction?

19) Hint: only the more electron-rich double bond reacts