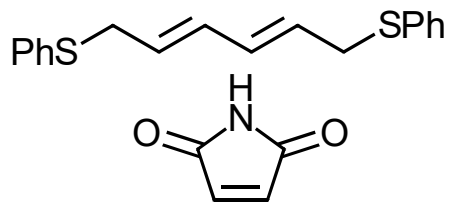


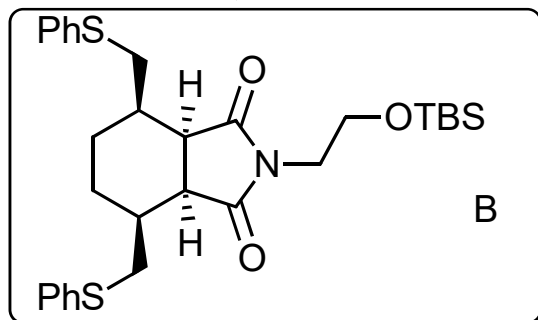
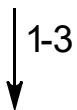
# Synthesis Challenge # 54

A Synthesis of Exiguquinol Dessulfate

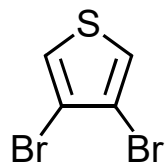
G. M. Schwarzwald, D. R. Scott, C. D. Vanderwal, *Chem. Eur. J.*, **2016**, DOI: 10.1002/chem.201604506  
06.10.2016



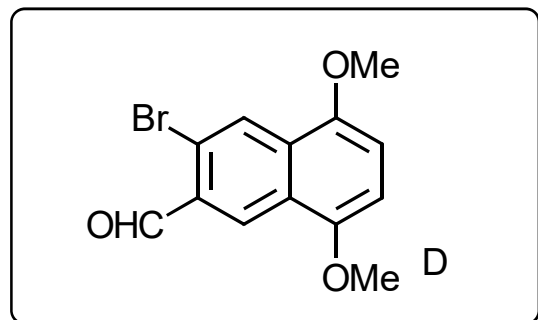
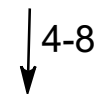
A



B



C

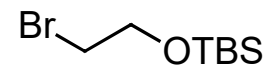


D

- 1) PhMe, 110°C
- 2) I, KOtBu, DMF
- 3) H<sub>2</sub> (300 psi), PtO<sub>2</sub>, MeCN, THF

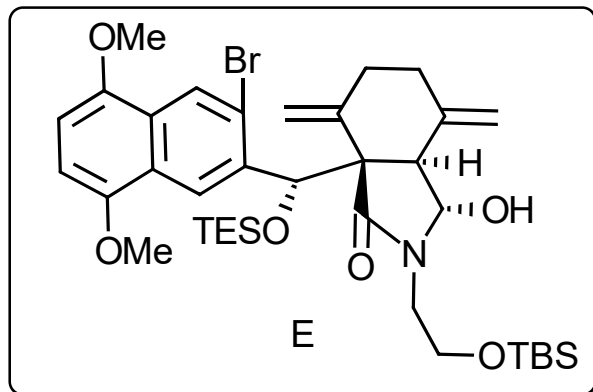
- 4) F<sub>3</sub>CCO<sub>3</sub>H, CH<sub>2</sub>Cl<sub>2</sub>
- 5) benzoquinone, AcOH, reflux
- 6) Na<sub>2</sub>S<sub>2</sub>O<sub>4</sub> (aq.), Et<sub>2</sub>O
- 7) K<sub>2</sub>CO<sub>3</sub>, MeI, 18-c-6, DMF
- 8) *n*BuLi, THF/Et<sub>2</sub>O, -98°C, then DMF

Please, provide a synthesis of C and I.

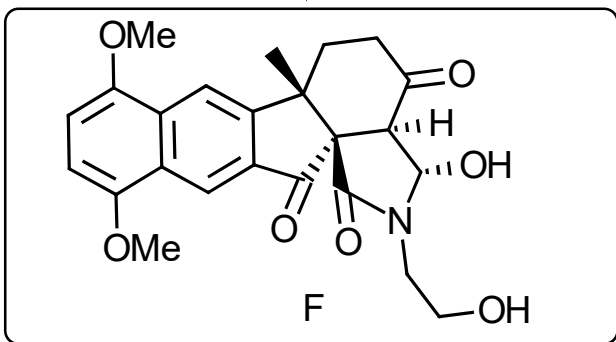


I

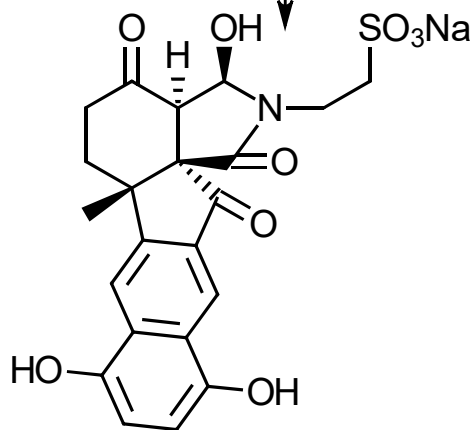
9-13



14-17



18-22



- 9) B, LiHMDS, THF, then D,  $-78^{\circ}\text{C}$   
then  $\text{BF}_3 \cdot \text{OEt}_2$
- 10) TESOTf,  $\text{Et}_3\text{N}$
- 11)  $\text{H}_2\text{O}_2$
- 12) Hünig's Base, *o*-DCB
- 13)  $\text{LiBH}_4$ , THF

- 14)  $\text{Pd}(\text{Pt-Bu}_3)_2$ ,  $[\text{Pt-Bu}_3]\text{HBF}_4$ ,  
 $\text{HCO}_2\text{Na}$
- 15) CsF
- 16) DDQ
- 17)  $\text{OsO}_4$ , NMO, then  $\text{NaIO}_4$

- 18)  $\text{PPh}_3$ , DIAD, AcSH
- 19) *m*CPBA
- 20) *t*BuOK, DMF
- 21)  $\text{SiO}_2$ , MeOH
- 22) CAN, then  $\text{Na}_2\text{S}_2\text{O}_4$