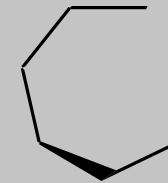


# Asymmetric Total Synthesis of (-)-Phaeocaulisin A

D. J. Procter

Phaeocaulisin A, which is a natural product of *C. phaeocaulis* and has been shown to be a potent inhibitor of the enzyme phospholipase C- $\beta$ .  
Phaeocaulisin A is a bicyclic compound consisting of a cyclohexane ring fused to a five-membered ring.



Phaeocaulisin A is a bicyclic compound consisting of a cyclohexane ring fused to a five-membered ring.

**P**haeocaulisin A is a bicyclic compound consisting of a cyclohexane ring fused to a five-membered ring.

The synthesis of phaeocaulisin A is a challenging task due to its complex bicyclic structure.

For further information, see: *J. Am. Chem. Soc.* **2021**, *143*, 3655.

*Nat Catal.* **2019**, *2*, 211.

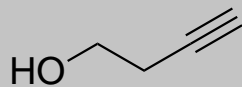
*Organomet. Chem.*, **2016**, *40*, 1. (Review article)

Tomoya Ozaki, Liu Group, Boston College

2022/04/22

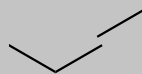
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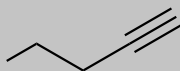




2

0.52 !/g



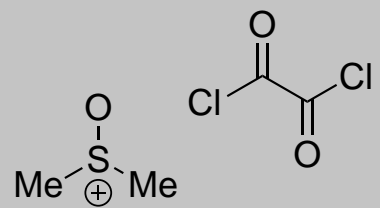


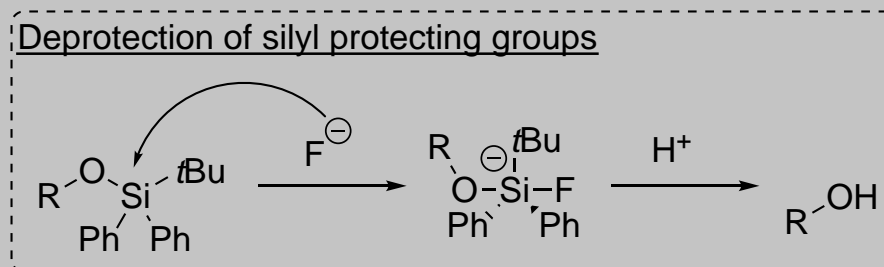
**2**

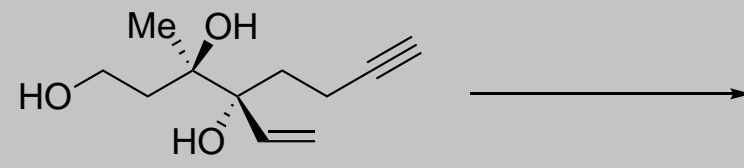
**0.52 !/g**



Swern Oxidation









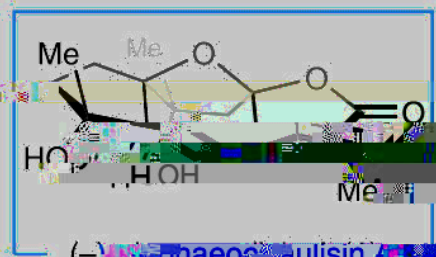






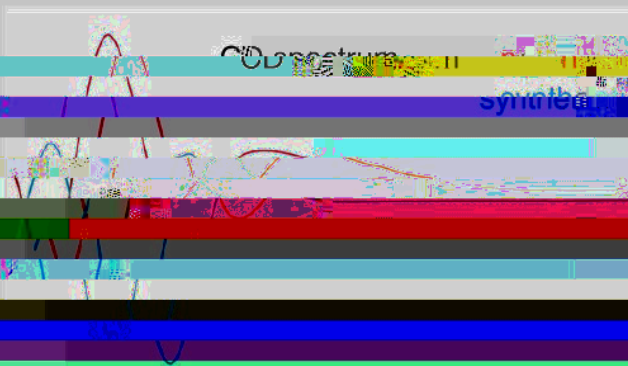


b



natural  
 $[\alpha_D^{25}] = +38.4$

synthetic  
 $[\alpha_D^{25}] = -40.0$



structural  
 $[\alpha_D^{25}] = +38.4$

(revised natural)

(synthetic, proposed natural)