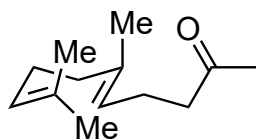
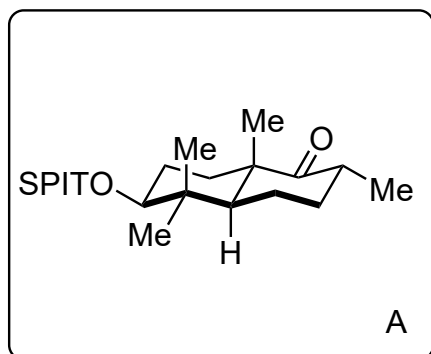


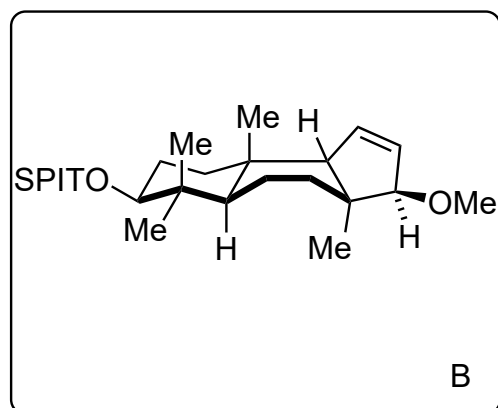
**Total Synthesis of Isomalabaricane Triterpenoids**  
 Yaroslav D. Boyko, Christopher J. Huck, David Sarlah  
 J. Am. Chem. Soc. **2019**, 141, 14131-14135



1-4



5-8



- 1) ToSMIC, t-BuOK
- 2) NBS, THF/H<sub>2</sub>O then K<sub>2</sub>CO<sub>3</sub>, MeOH
- 3) Cp<sub>2</sub>TiCl<sub>2</sub>, Zn, THF then NaH<sub>2</sub>PO<sub>4</sub>
- 4) TIPSOTf, DCM

- 5) LDA, THF/DCM then LiClO<sub>4</sub>, CaCO<sub>3</sub>
- 6) C<sub>2</sub>H<sub>2</sub>, n-BuLi then PivCl
- 7) Selectfluor, Au(PPh<sub>3</sub>)Cl, AgOTf then NH<sub>2</sub>NHTs
- 8) MeOH, Et<sub>3</sub>N then CatBH, CsOAc

1) What is the name of the starting material?

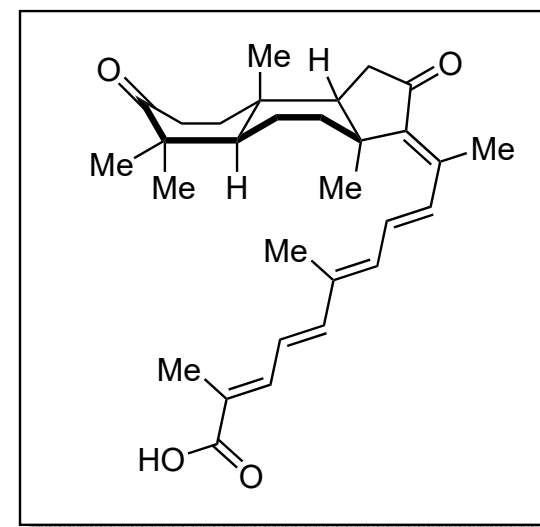
*geranylacetone*

2) Name of reaction 1

*Van Leusen reaction - reductive cyanation*

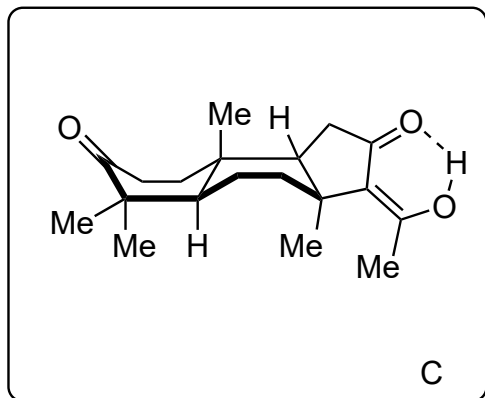
3) Name of reaction 7 and mechanism

*Rautenstrauch rearrangement - on paper*

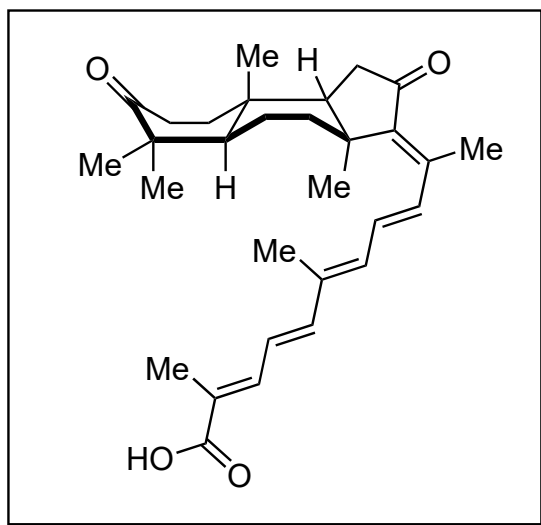


Rhabdastrellic acid A

9-11

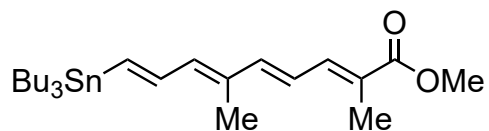


12-14



Rhabdastrellic acid A

- 9)  $\text{Cp}_2\text{ZrCl}_2$ ,  $n\text{-BuLi}$  then  $\text{CuOAc}$ ,  $\text{AcCl}$
- 10)  $\text{BH}_3 \cdot \text{Me}_2\text{S}$ ,  $\text{TfOH}$  then  $\text{H}_2\text{O}_2$ ,  $\text{NaOH}$
- 11)  $\text{IBX}$
- 12)  $(\text{COBr})_2$ ,  $\text{DMF}$
- 13)  $\text{Pd}_2(\text{dba})_3$ ,  $\text{Ph}_3\text{As}$ , **1**
- 14)  $\text{LiOH}$  or  $\text{Me}_3\text{SnOH}$
- 15)  $h\nu$ , 400 nm

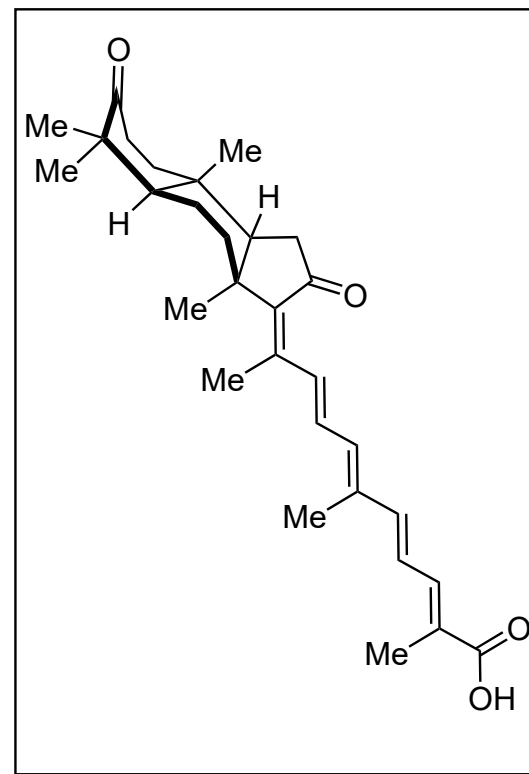
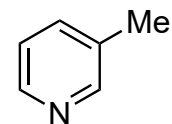


15

Bonus Step

How would you synthesize **1**?

Hint: They start from *3-picoline* but you can start from whatever SM you want



Stelletin E

