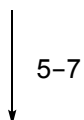
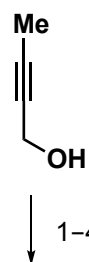
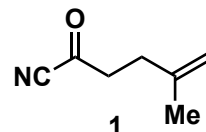


## Synthesis of Anhydroryanodol

Kang Du, Matthew J. Kier, Zachary D. Stempel, Valer Jeso, Arnold L. Rheingold, and Glenn C. Micalizio, *J. Am. Chem. Soc.* **2020**, ASAP, <https://doi.org/10.1021/jacs.0c05766>



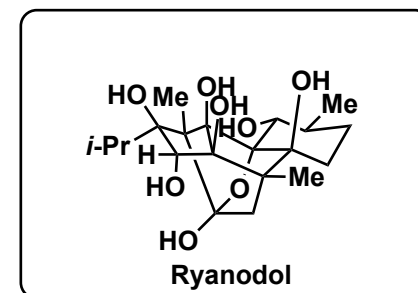
- 1) *i*-PrMgCl, CuI, I<sub>2</sub>, then MnO<sub>2</sub>
- 2) 2-lithiofuran, THF, then NBS, H<sub>2</sub>O
- 3) TBSOTf, lutidine
- 4) H<sub>2</sub>, ClRh(PPh<sub>3</sub>)<sub>3</sub>, PhH

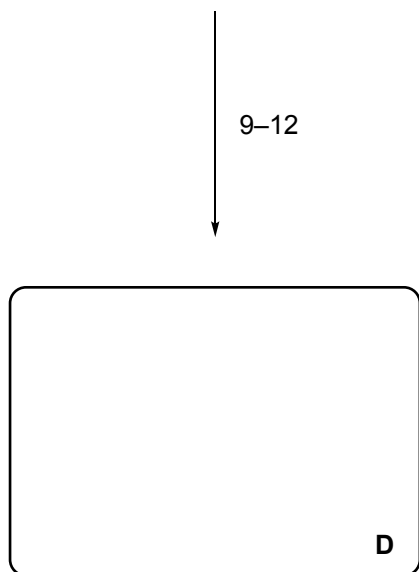
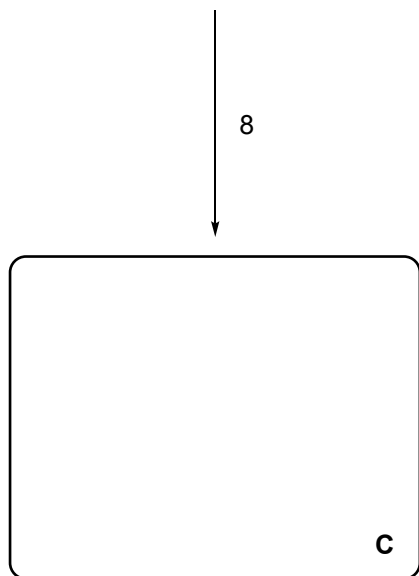


- 5) LiHMDS, **1**, THF
- 6) KHMDS, MeI, THF
- 7) Bu<sub>3</sub>SnCC(CH<sub>2</sub>)<sub>2</sub>OPMB, Pd(PhCN)<sub>2</sub>Cl<sub>2</sub>, Ph<sub>3</sub>As, THF

Step 2: Please provide the name for this transformation.

Step 4: After which Nobel laureate is the catalyst named?





8)  $\text{Ti}(\text{O}i\text{-Pr})_4$ ,  $i\text{-PrMgCl}$ , THF,  $-78$  to  $-20$  °C

9) TMS-imidazole, DCE  
 10)  $\text{VO}(\text{O}i\text{-Pr})_3$ ,  $t\text{-BuOOH}$   
 11) DDQ,  $\text{CH}_2\text{Cl}_2$ , pH 7 buffer  
 12)  $o\text{-NO}_2\text{C}_6\text{H}_4\text{SeCN}$ ,  $\text{PBU}_3$ , then  $\text{H}_2\text{O}_2$ , THF

Step 8: Please propose a metallacycle intermediate.

Hint for Step 9: Only one TMS group is attached.

Step 12: What is the name for this transformation?

