Day 14: Allylic Substitution

TODAY'S TOPICS

-Metal–π-allyl reactivity
-Synthesis of metal–π-allyls
-Catalytic allylic substitution

CHEMIST OF THE DAY

name?
known for?

QUOTE OF THE DAY

"A gold medal is a wonderful thing. But if you're not enough without one, you'll never be enough with one."

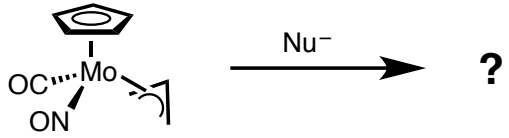
- *Cool Runnings*

READING

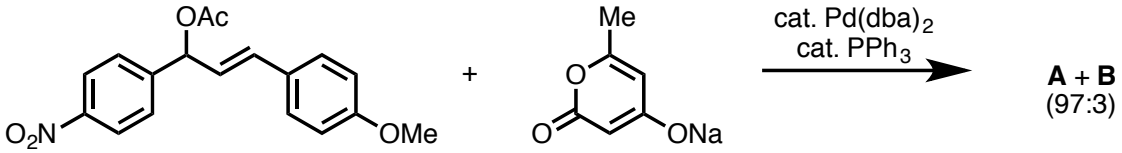
Hartwig: Ch. 11.1, 11.4, 11.7, 20
Crabtree: Ch. 5.2, 9.7

PROBLEMS OF THE DAY

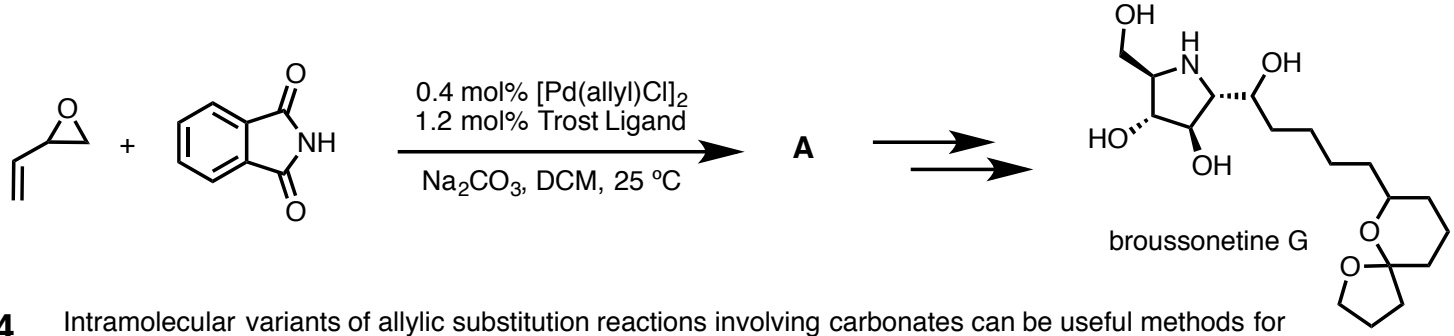
#1 Consider the following molybdenum complex. Based on the Davies–Green–Mingos rules and *trans* effect/influence trends, **predict the site of attack for a generic stabilized nucleophile (Nu^-).**



#2 The following palladium-catalyzed allylic substitution reaction provides products **A** and **B** in a 97:3 ratio. **Provide the structure of the products and rationalize which is the major product.**



#3 A sequence of palladium-catalyzed vinyl epoxides allylic substitution reactions are used in the synthesis of broussonetine G. **Provide the structure of product A and the mechanism of the reaction.**



#4 Intramolecular variants of allylic substitution reactions involving carbonates can be useful methods for generating enantiopure α-stereocenters. **Provide the structures of (*S*)-*t*-Bu-PHOX and product A, and propose a mechanism for the reaction.**