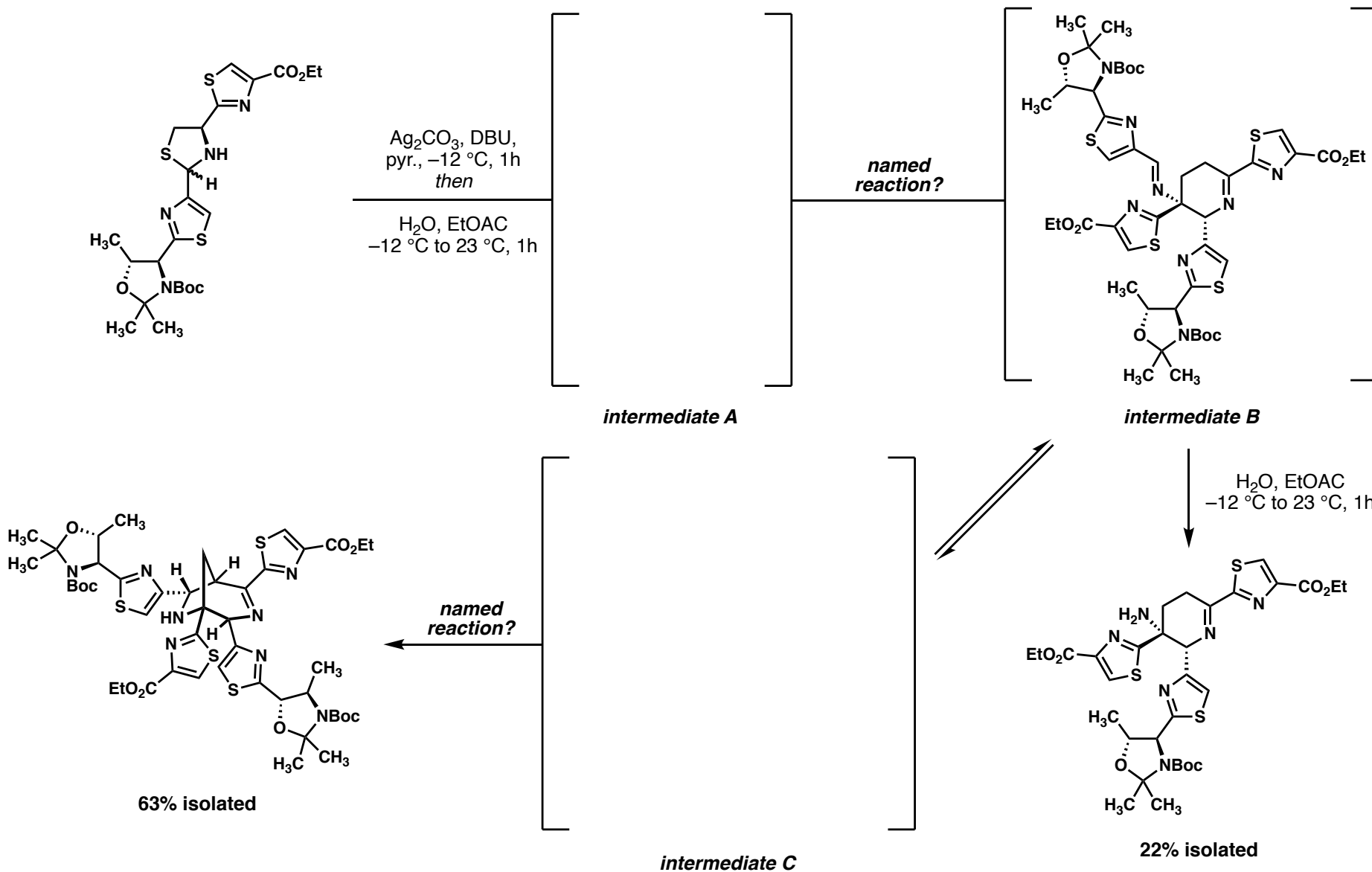


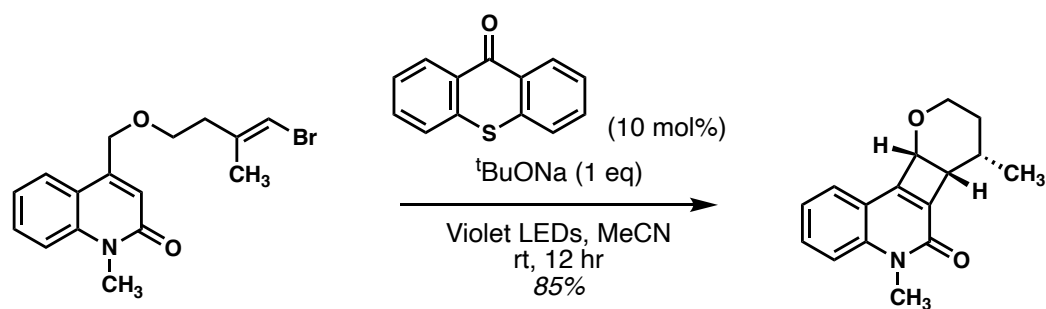
Problem Set

1. During the total synthesis of thiostrepton by the Nicolaou Lab in 2004, the construction of the dehydropiperidine moiety was undertaken successfully in 22% isolated yield. Provide both intermediate A and C as well as the mechanisms for the two named reactions in this scheme.
J. Am. Chem. Soc. **2005**, 127, 11159.



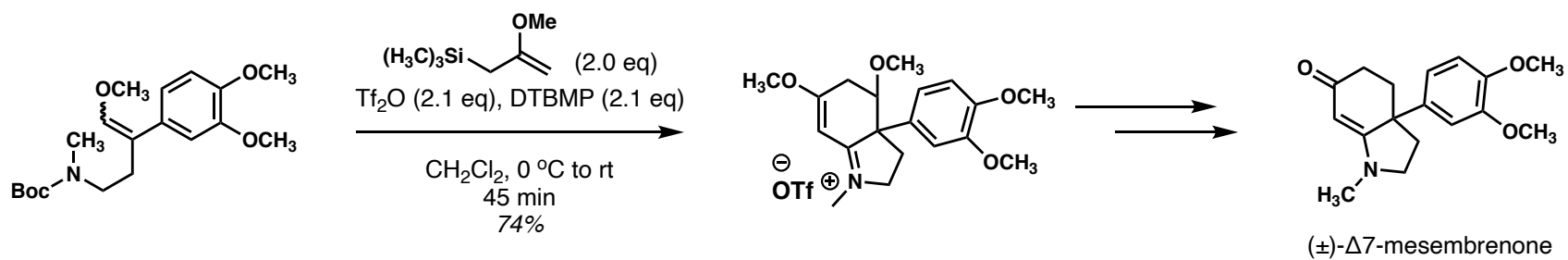
Problem Set

2. Provide a mechanism for the following transformation.
Org. Lett. 2021, 23, 2959–2963



Problem Set

3. Provide a mechanism for the following transformation. There are two named reactions in this cascade - what are they?
Org. Lett. 2021, 23, 21, 8606–8611



Problem Set

Undergrad Problem: Provide a mechanism for the following transformation. What is the name of this reaction? (A rationalization of enantioselectivity is not necessary.)

ACIEE 2008, 47, 10090-93

