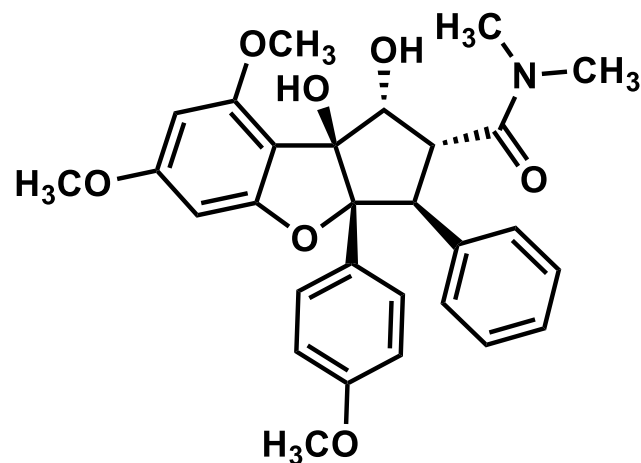


Synthesis of Each Enantiomer of Rocaglamide by Means of a Palladium(0)-Catalyzed Nazarov-Type Cyclization

Zhe Zhou and Marcus A. Tius



Emily Dzurka

CEM 852 | Michigan State University | February 2018

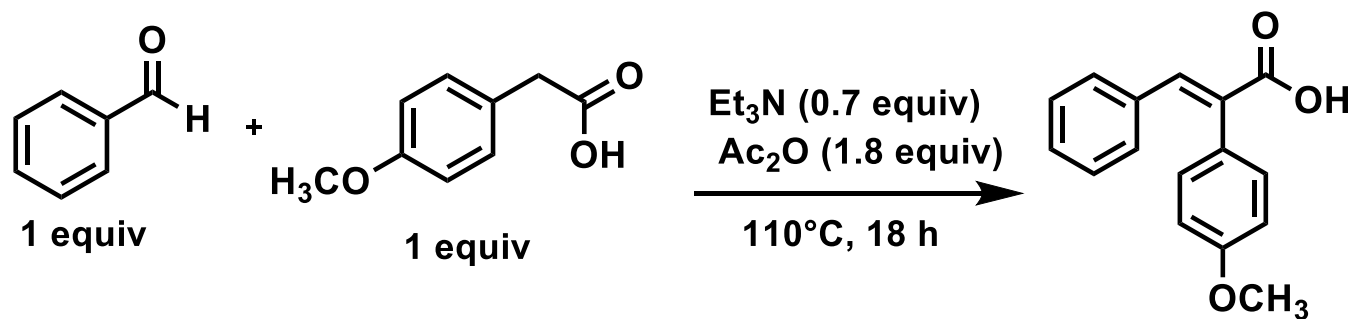
Background

- First isolated in 1982 from *Aglaia elliptifolia*
 - A tree native to south-east Asia
- Exhibits anticancer activity across a broad range of human cancer cells
- Potent cytostatic and anti inflammatory activities
- First synthesized and published by Trost et al. in 1990

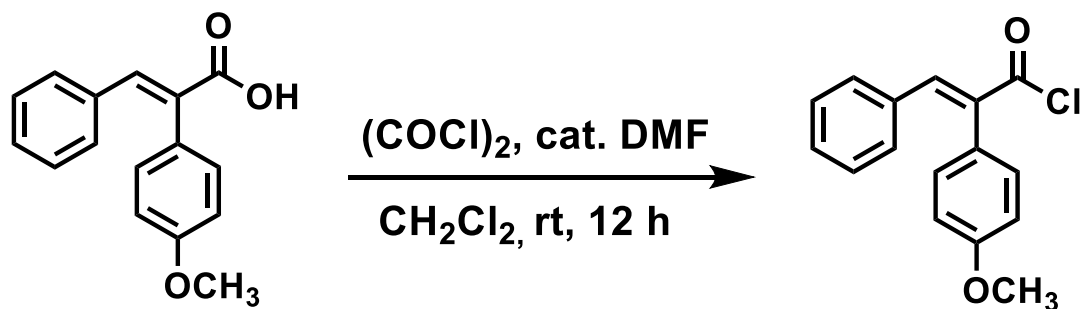
J. Chem. Soc. **1990**, 112, 9022-9024 *Angew. Chem. Int. Ed.* **2015**, 54, 6037.

Synthesis of Acid Chloride

Step 1:



Step 2:

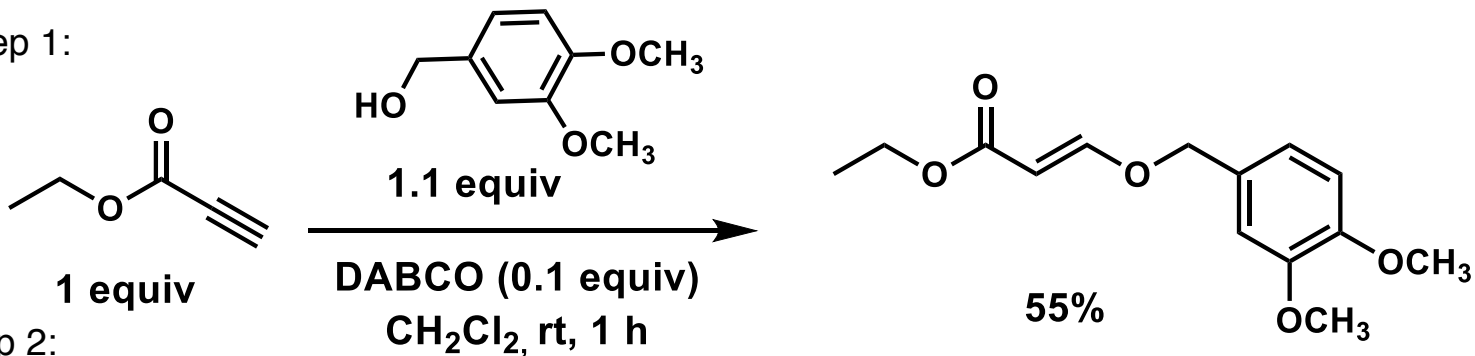


Angew. Chem. Int. Ed. **2015**, *54*, 6037.

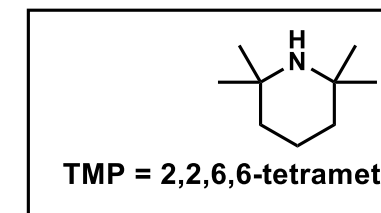
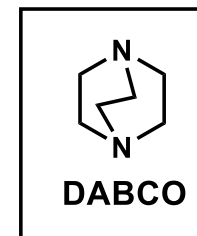
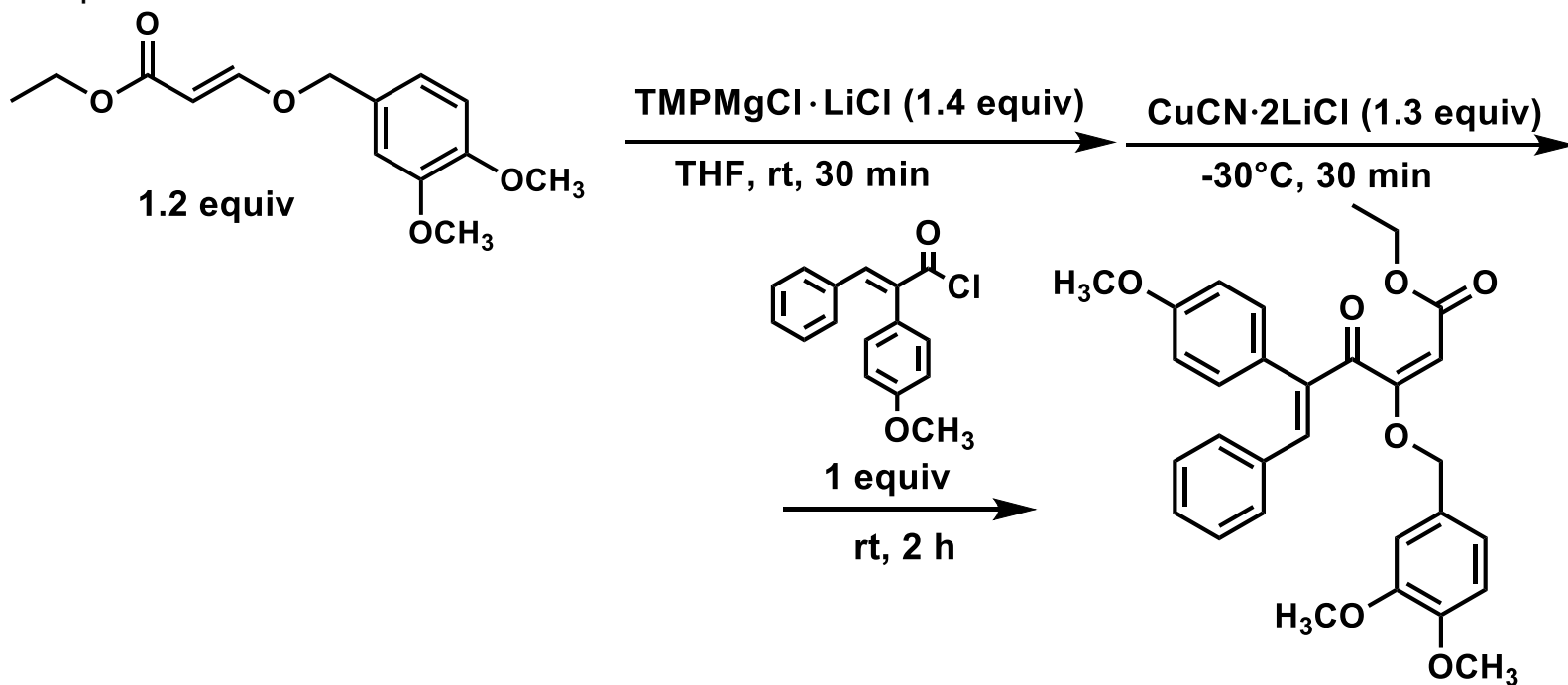
Tetrahedron, **2003**, *59*, 3315-3321

Overall Synthesis

Step 1:



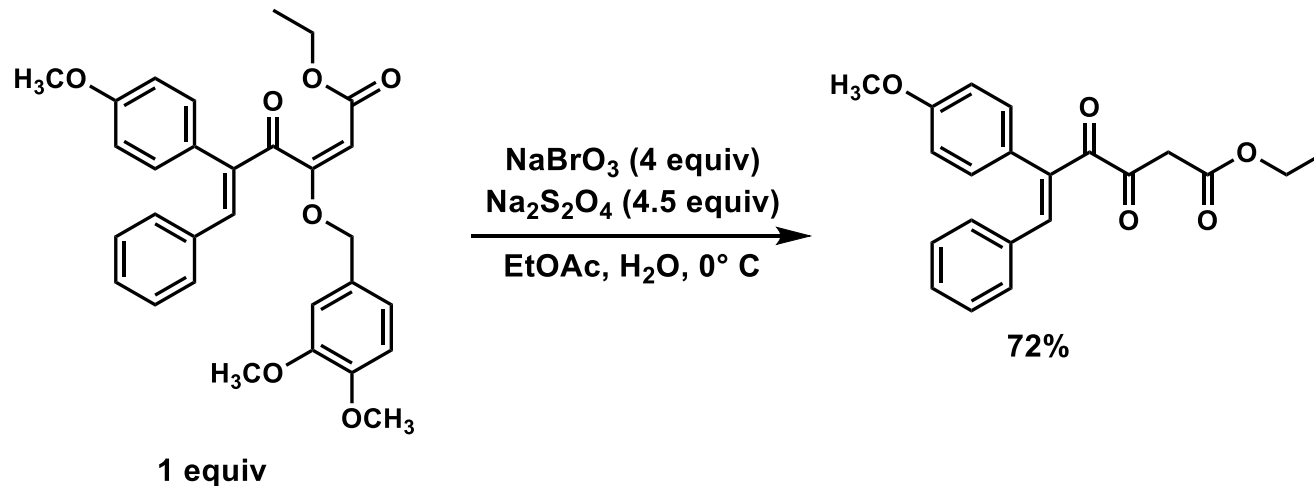
Step 2:



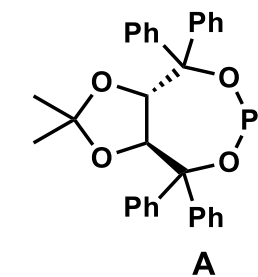
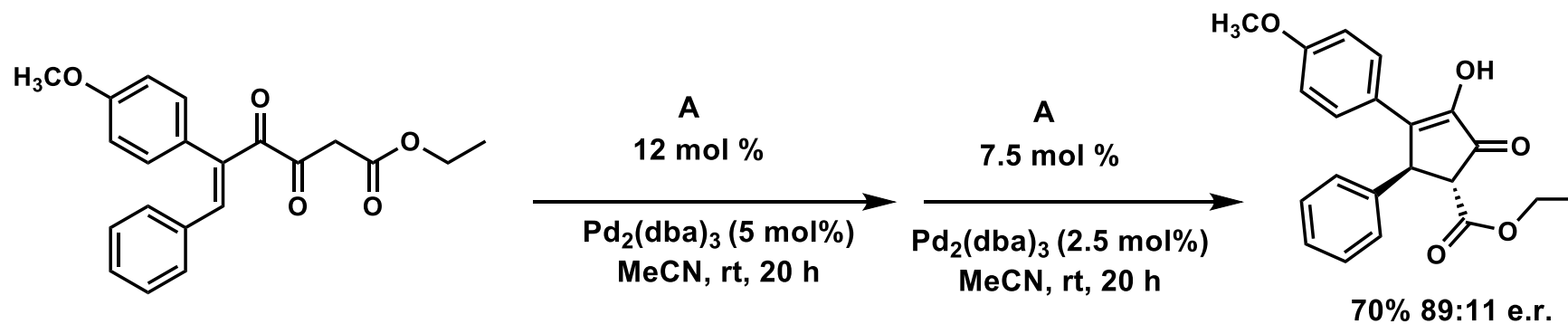
Angew. Chem. Int. Ed. **2015**, *54*, 6037.

Overall Synthesis

Step 3:



Step 4:

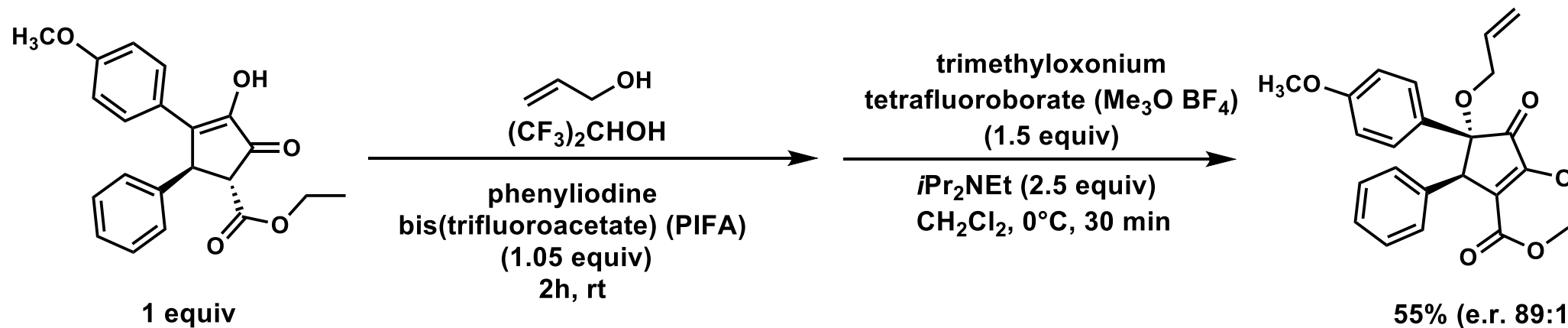


dba = dibenzylidene

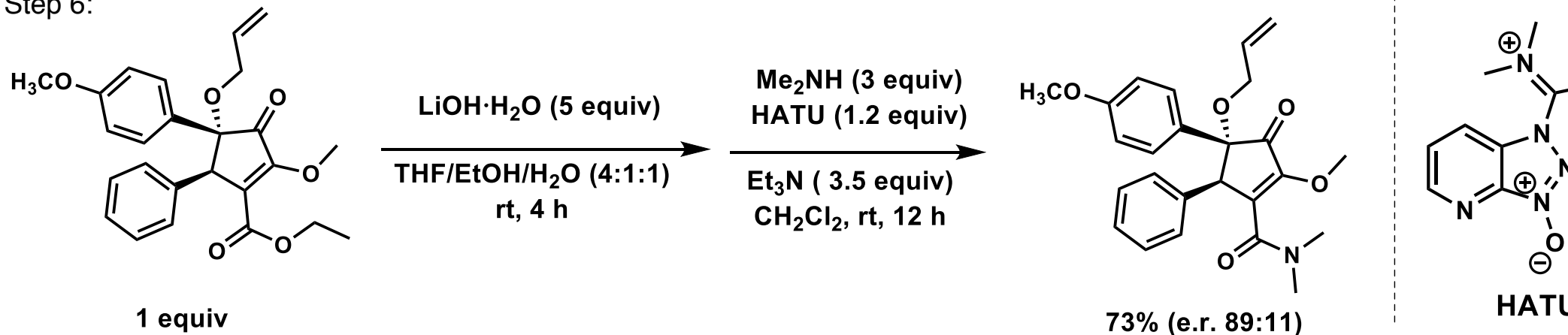
Angew. Chem. Int. Ed. **2015**, *54*, 6037.

Overall Synthesis

Step 5:



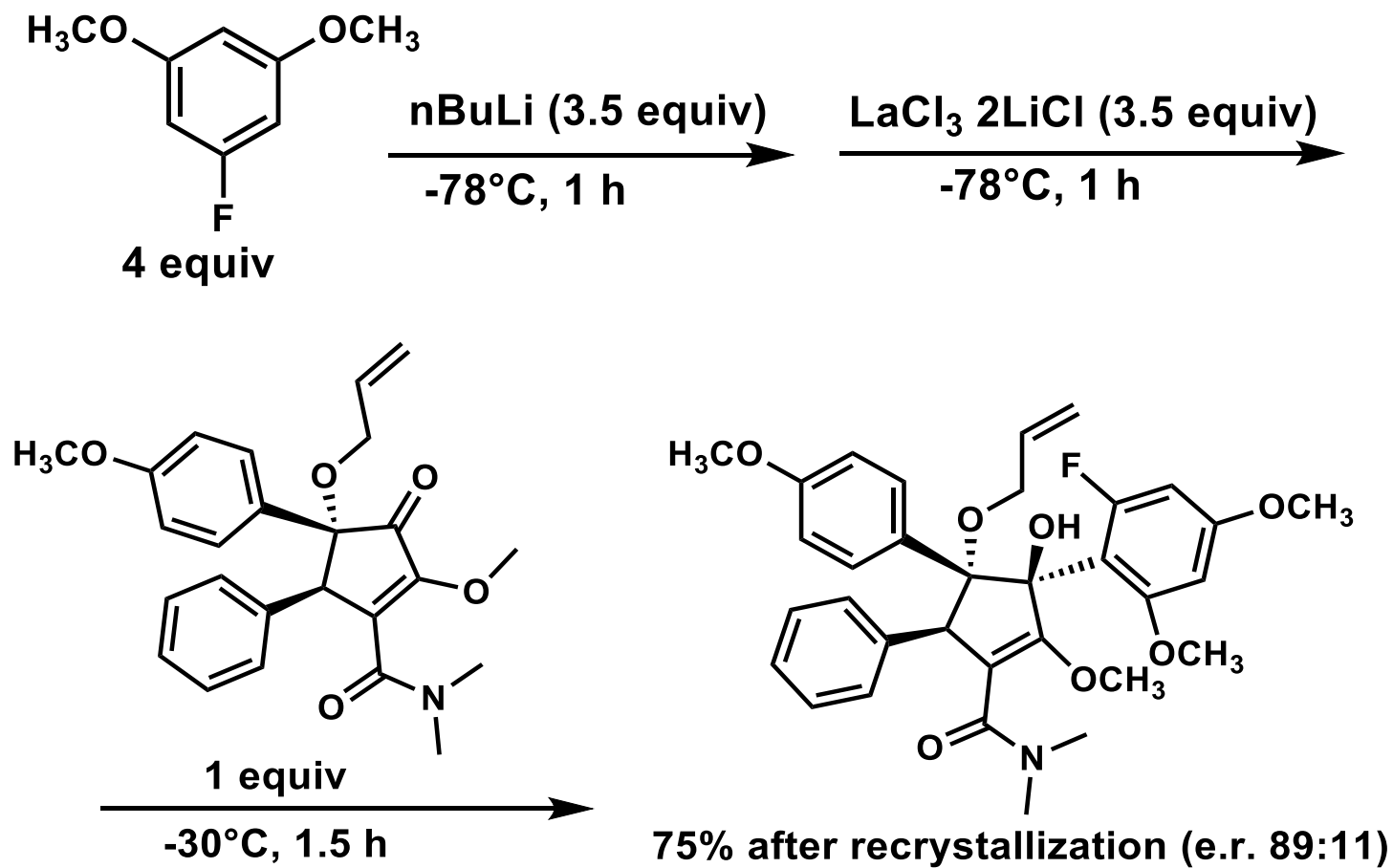
Step 6:



Angew. Chem. Int. Ed. **2015**, *54*, 6037.

Overall Synthesis

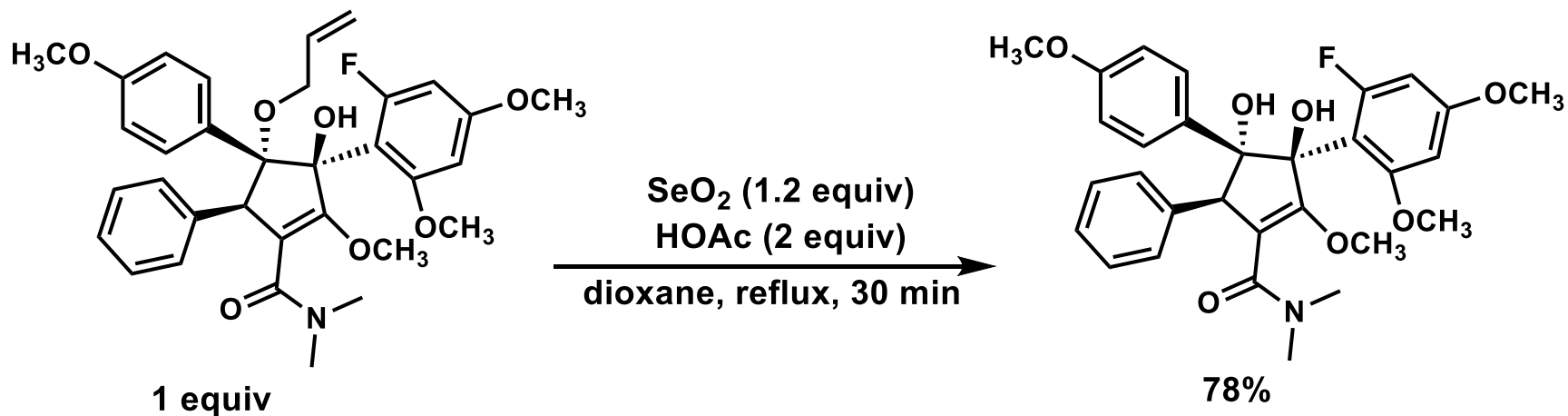
Step 7:



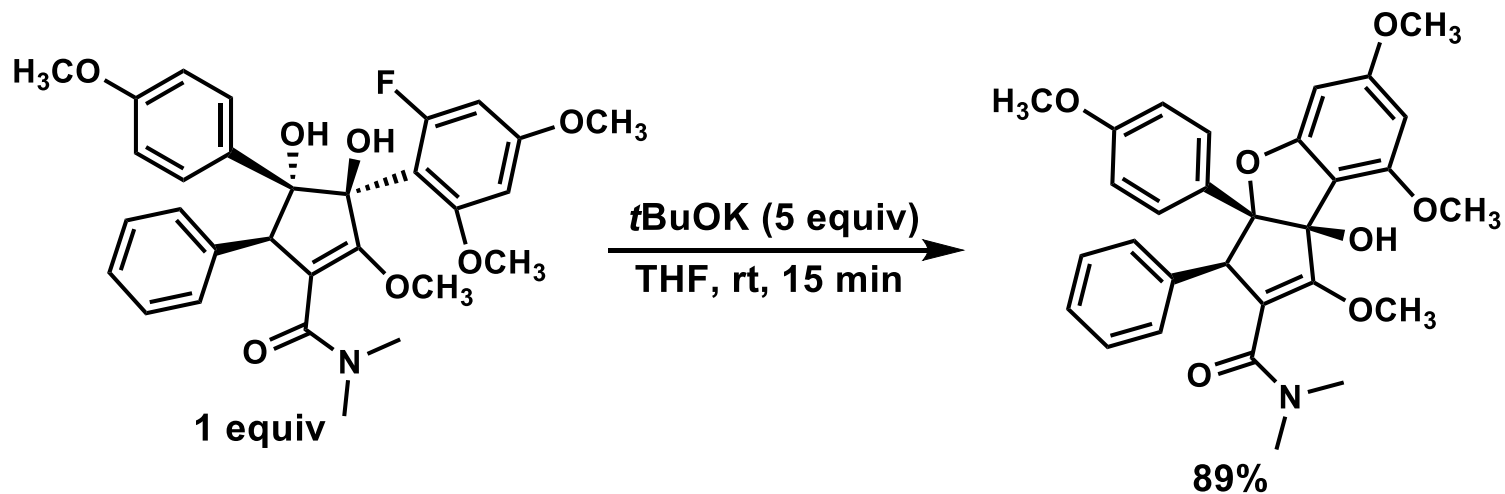
Angew. Chem. Int. Ed. **2015**, *54*, 6037.

Overall Synthesis

Step 8:



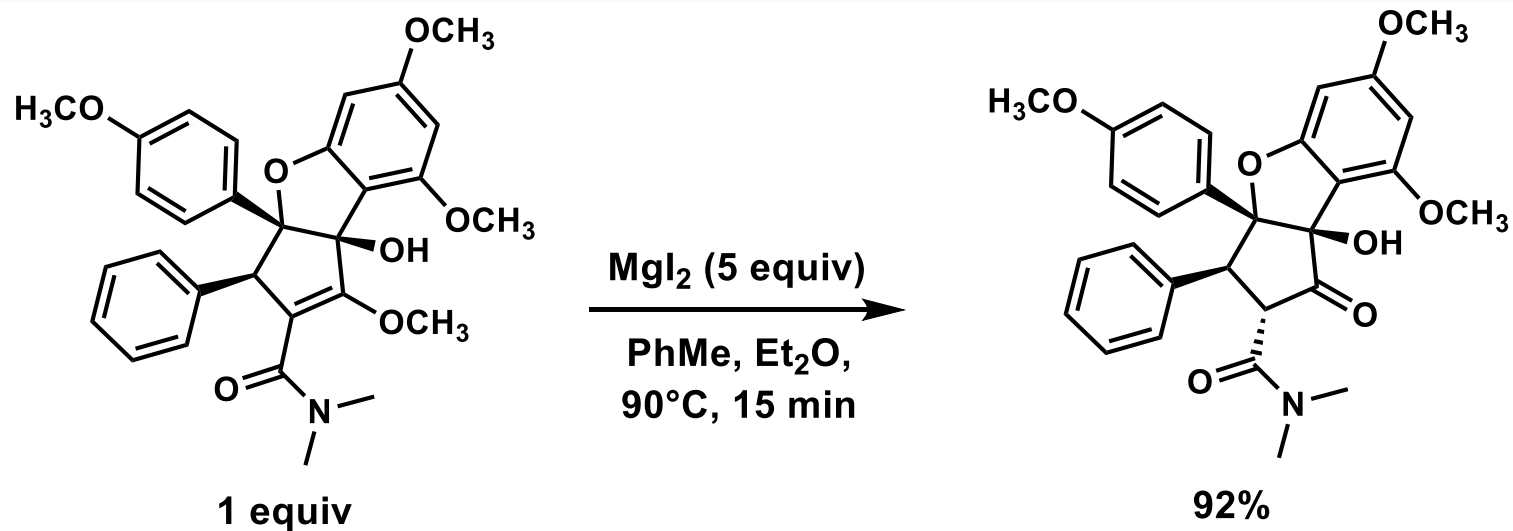
Step 9:



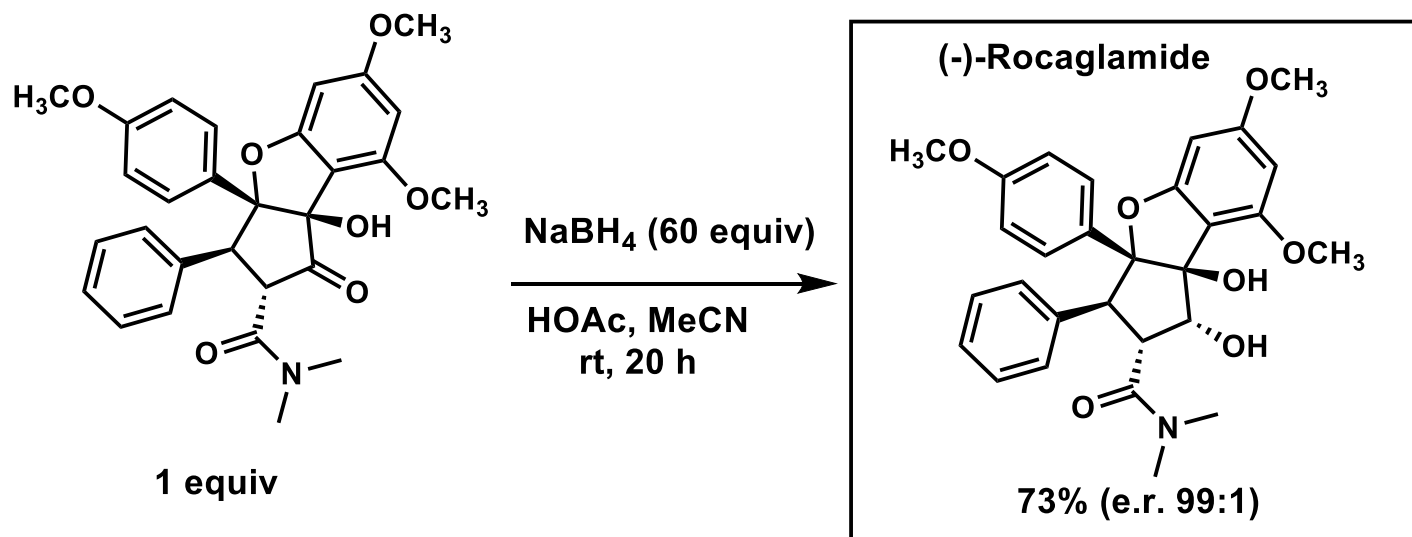
Angew. Chem. Int. Ed. **2015**, *54*, 6037.

Overall Synthesis

Step 10:



Step 11:



Angew. Chem. Int. Ed. **2015**, *54*, 6037.