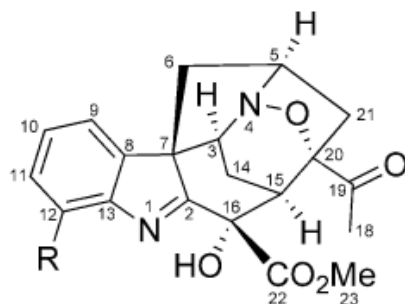


# A Synthesis of Alsmaphorazine B Demonstrates the Chemical Feasibility of a New Biogenetic Hypothesis



alsmaphorazine A (1) : R=OH  
alsmaphorazine B (2) : R=H

Allen Hong and Christopher Vanderwal  
University of California, Irvine

Presented by David Walls

# Background

- Isolated and characterized in  
from the leaves of  
*Alstonia pneumatophore*



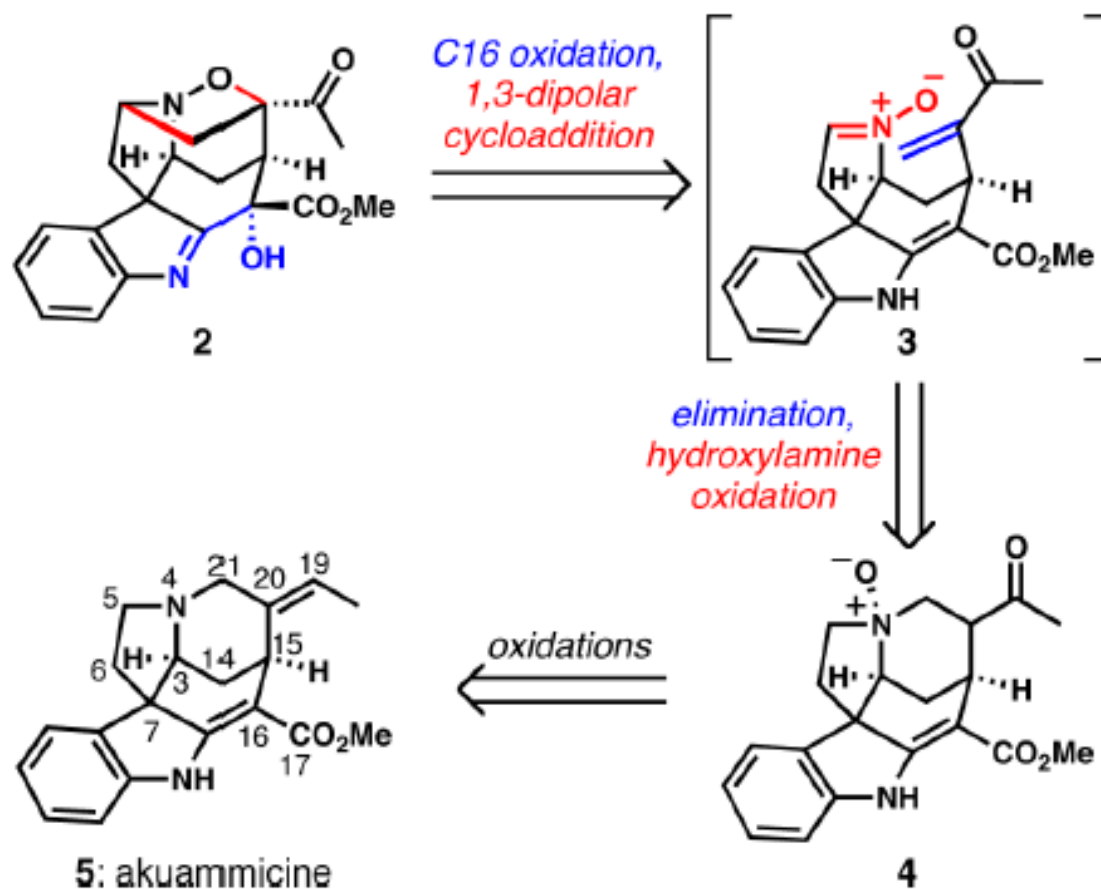
- Of interest due to possible anticancer, antibacterial, anti-inflammatory, antitussive, and antimalarial properties.
- Synthesis method based on presumed biosynthetic pathway

*J. Am. Chem. Soc.* **2015**, *137*,  
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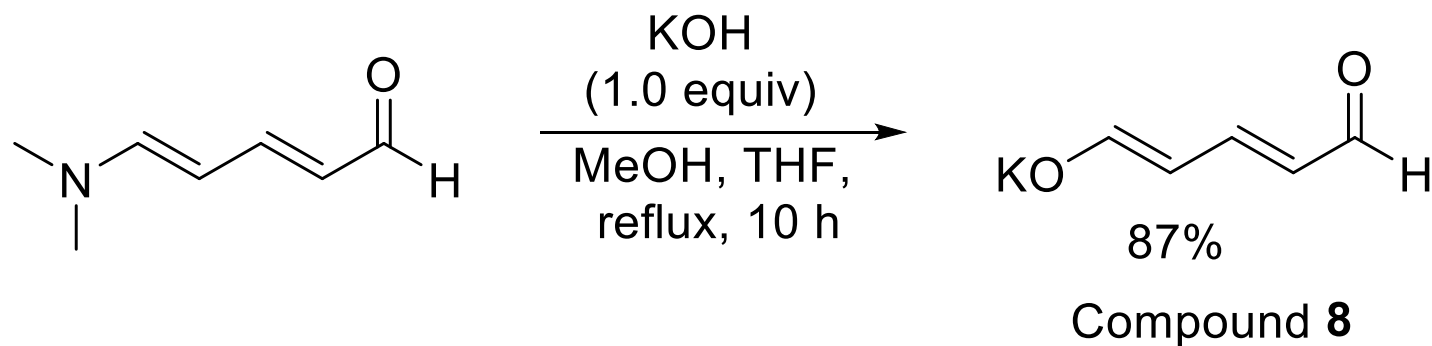
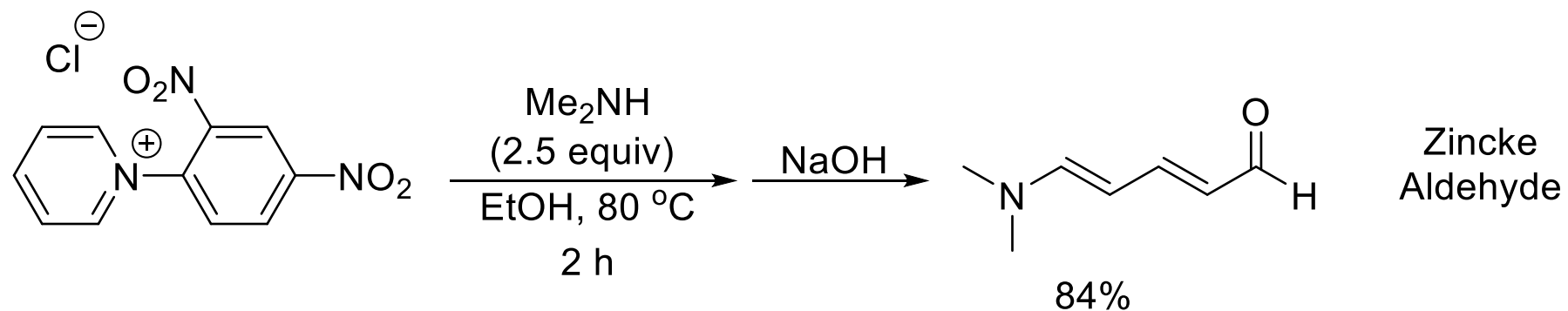
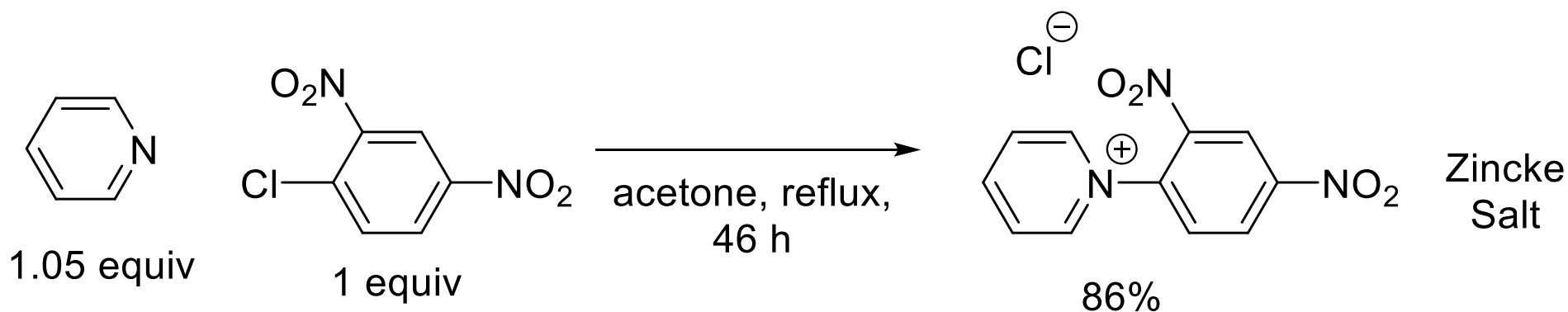
*Org. Lett.* **2010**, *12*,  
1122

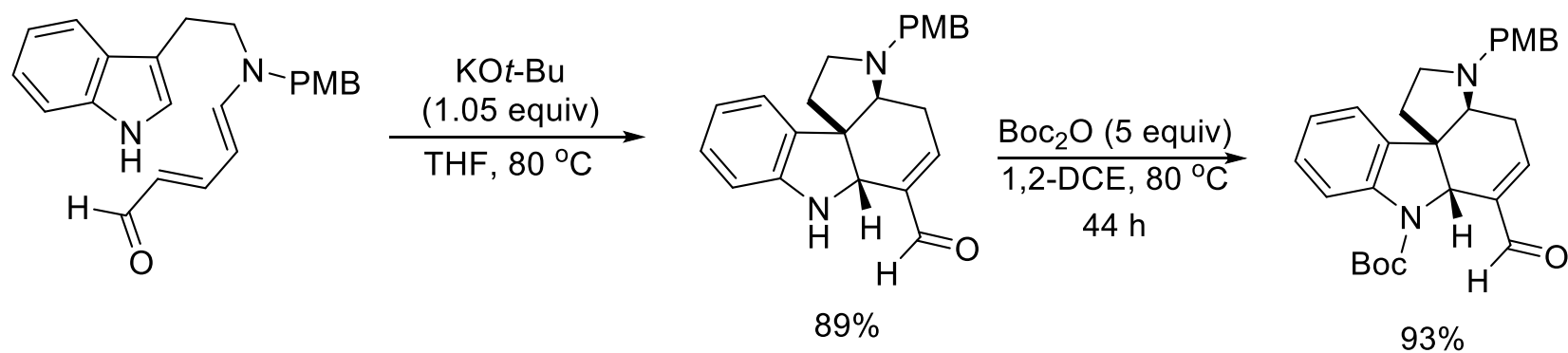
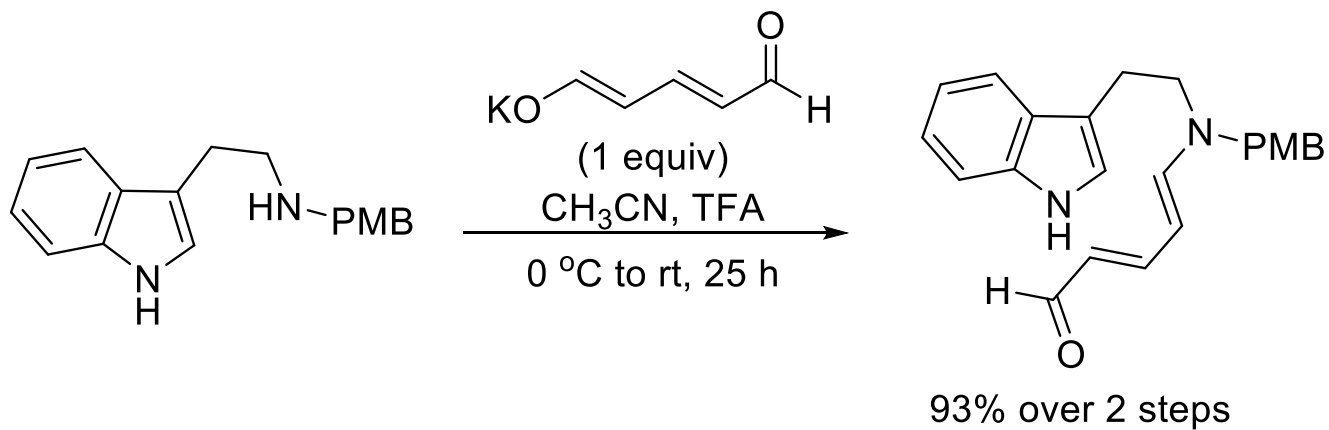
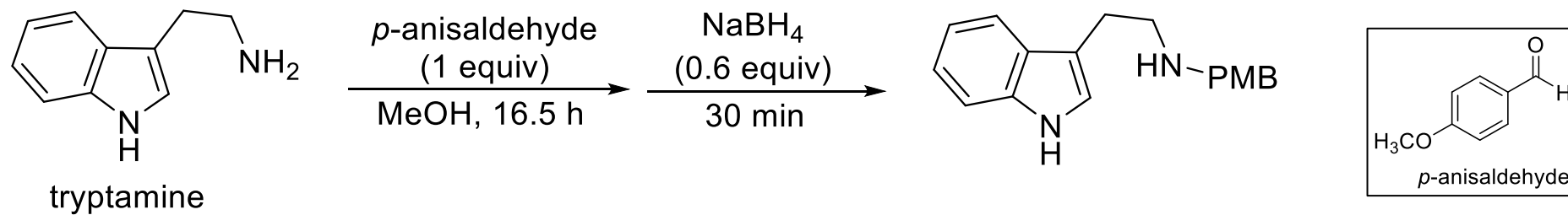
# Retrosynthesis

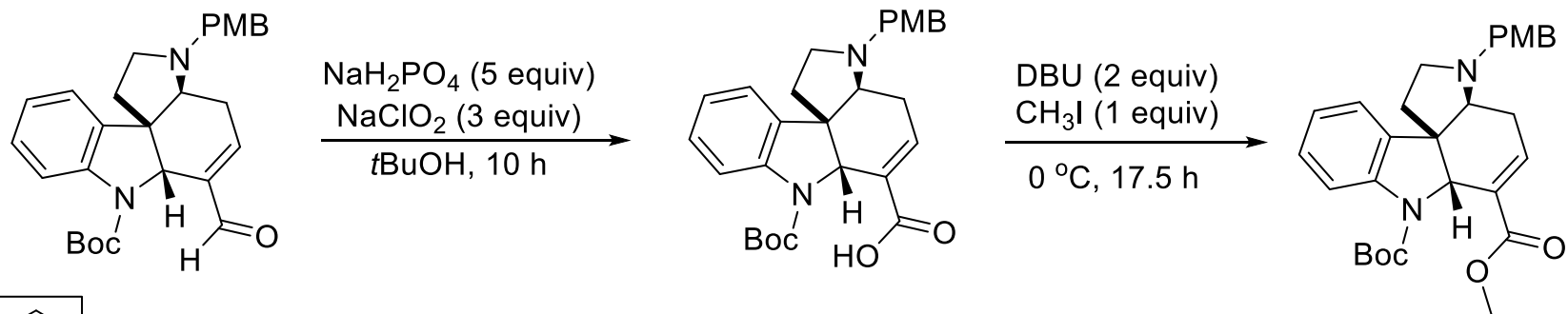
Scheme 1. Proposed Biogenesis of Alsmaphorazine B



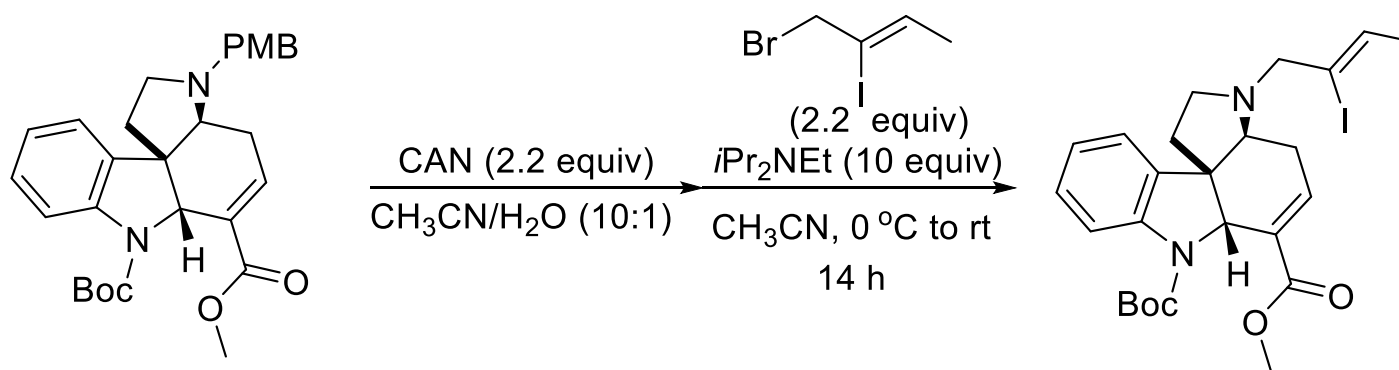
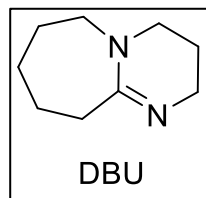
- Using previously synthesized akuammicine as the backbone
- C19 and N4 oxidations to 4
- B-elimination of N-oxide and oxidation
- Cycloaddition to form 1,2-oxazolidine



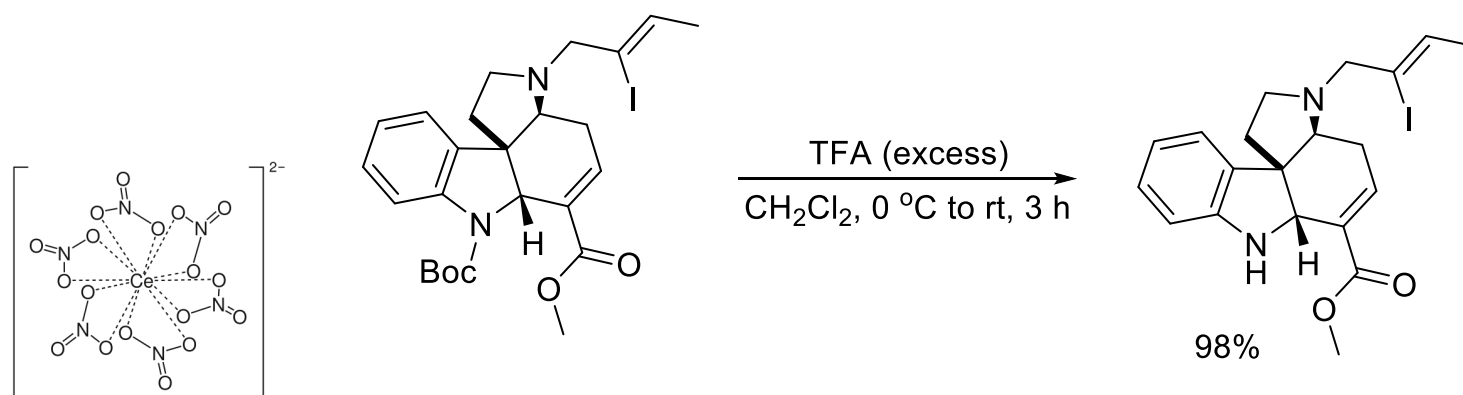




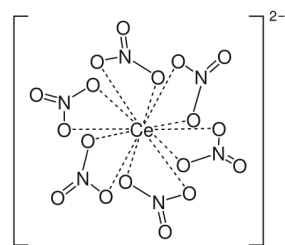
81% over 2 steps



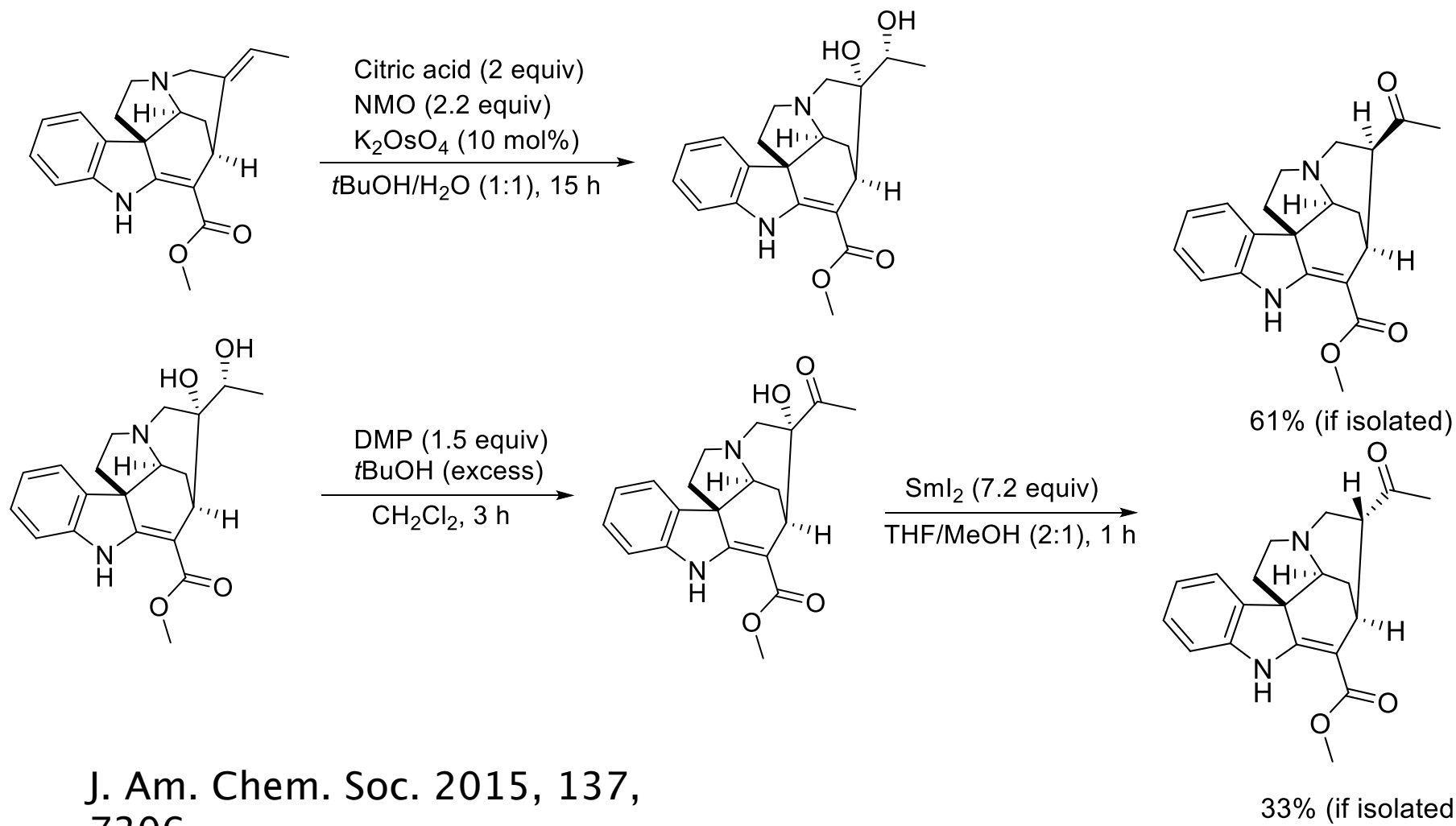
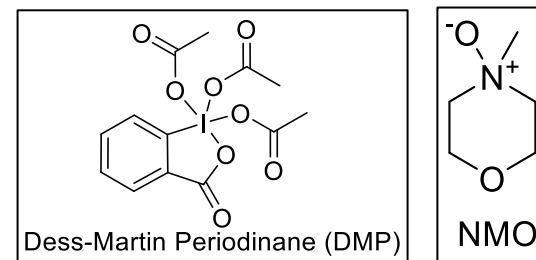
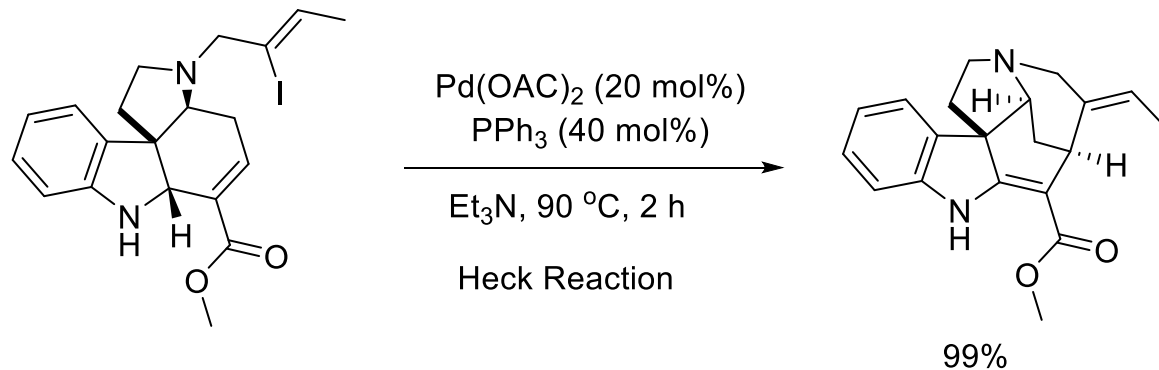
56-64% yield

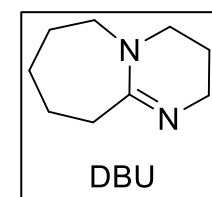
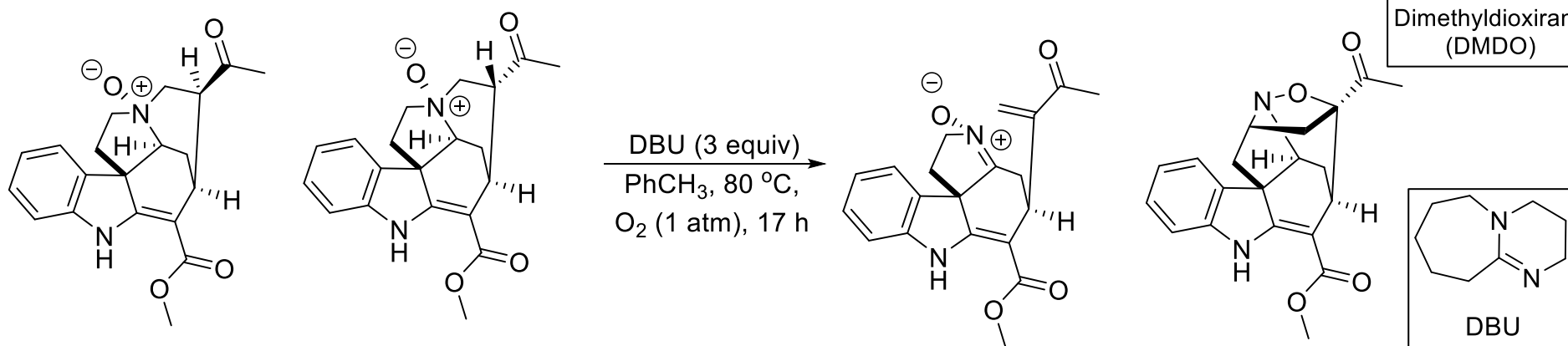
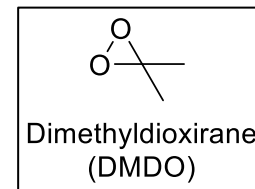
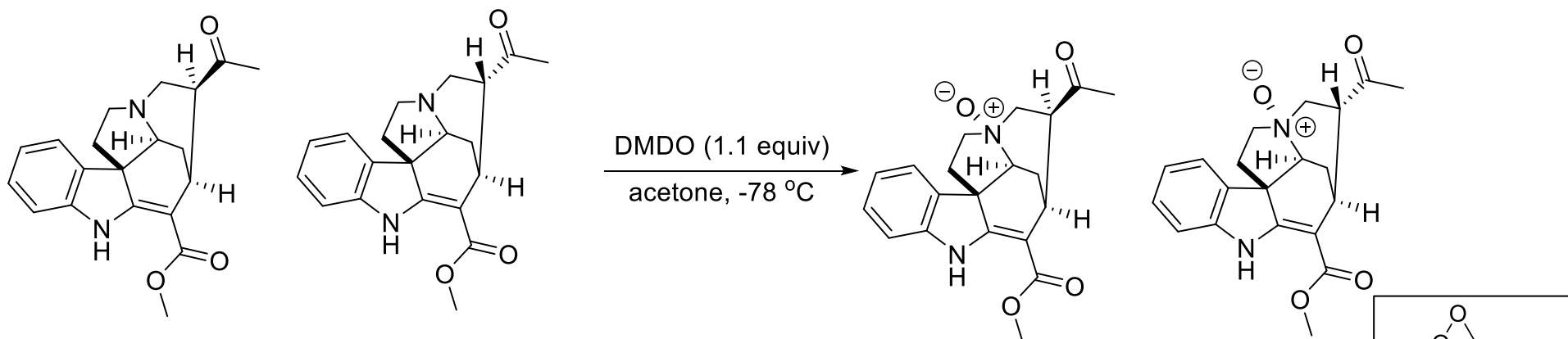


98%



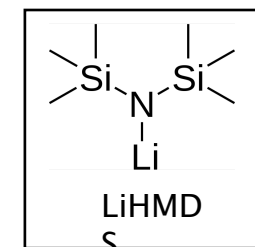
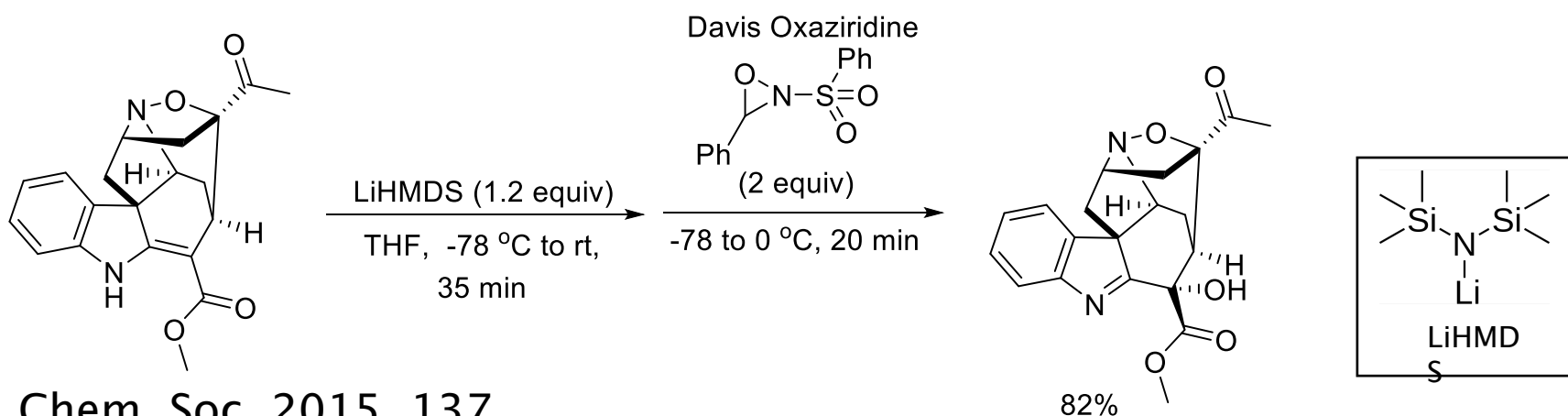
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33% over 3 steps

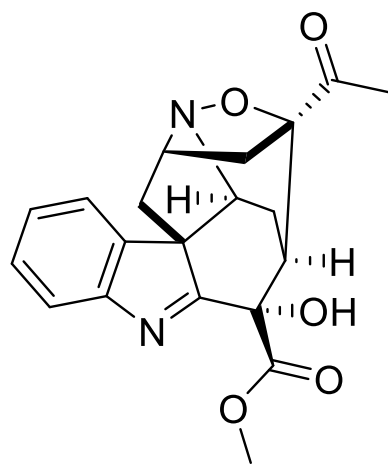
49% over 3 steps



82%

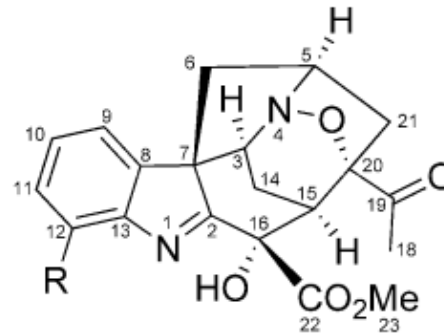
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10.6% overall  
yield

≡



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alsmaphorazine B (2) : R=H

Thank You