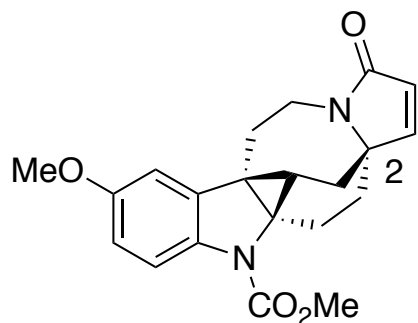


Development of the Vinylogous Pictet-Spengler Cyclization and Total Synthesis of (\pm)-Lundurine A

Nash, A.; Qi, X.; Maity, P.; Owens, K.; Tambar, U. K.*

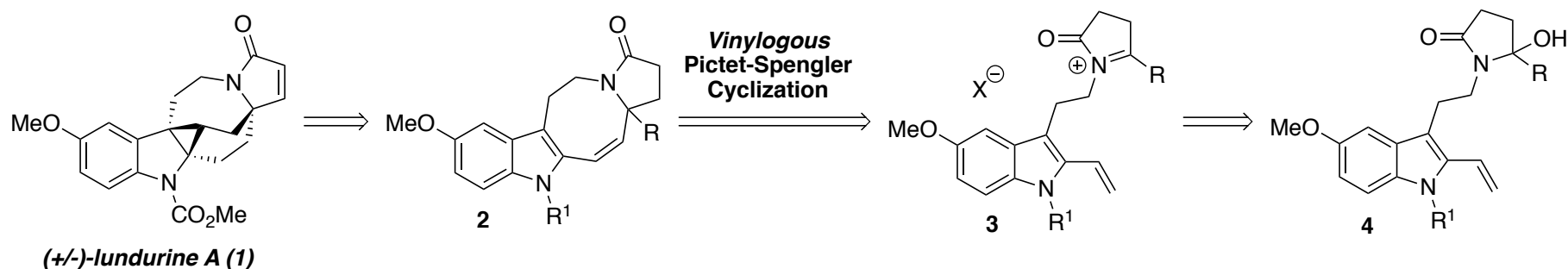
Angew. Chem. Int. Ed. **2018**, *57*, 6888–6891.



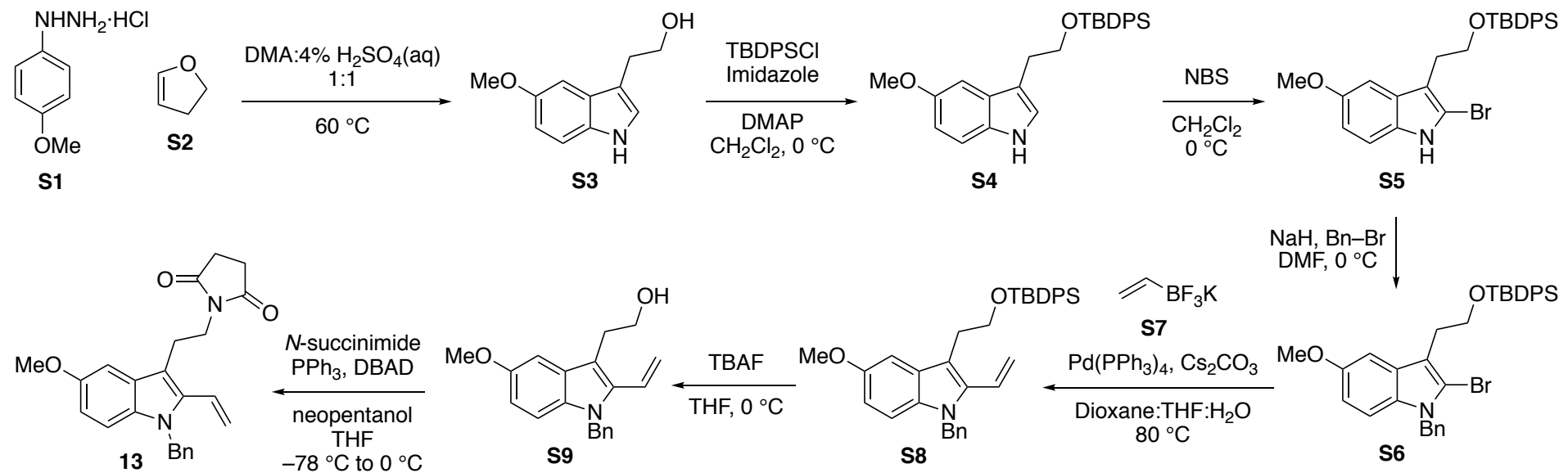
(\pm)-lundurine A (1)

- (\pm)-Lundurine A is an indole alkaloid that exhibits cytotoxicity in drug-resistant human oral epidermoid carcinoma cells.
- Nash et al. applied the vinylogous Pictet-Spengler reaction developed in this paper to the synthesis of (\pm)-Lundurine A.
- This method allows the installation of the eight-membered ring and quaternary carbon center in one step, which was previously unknown.

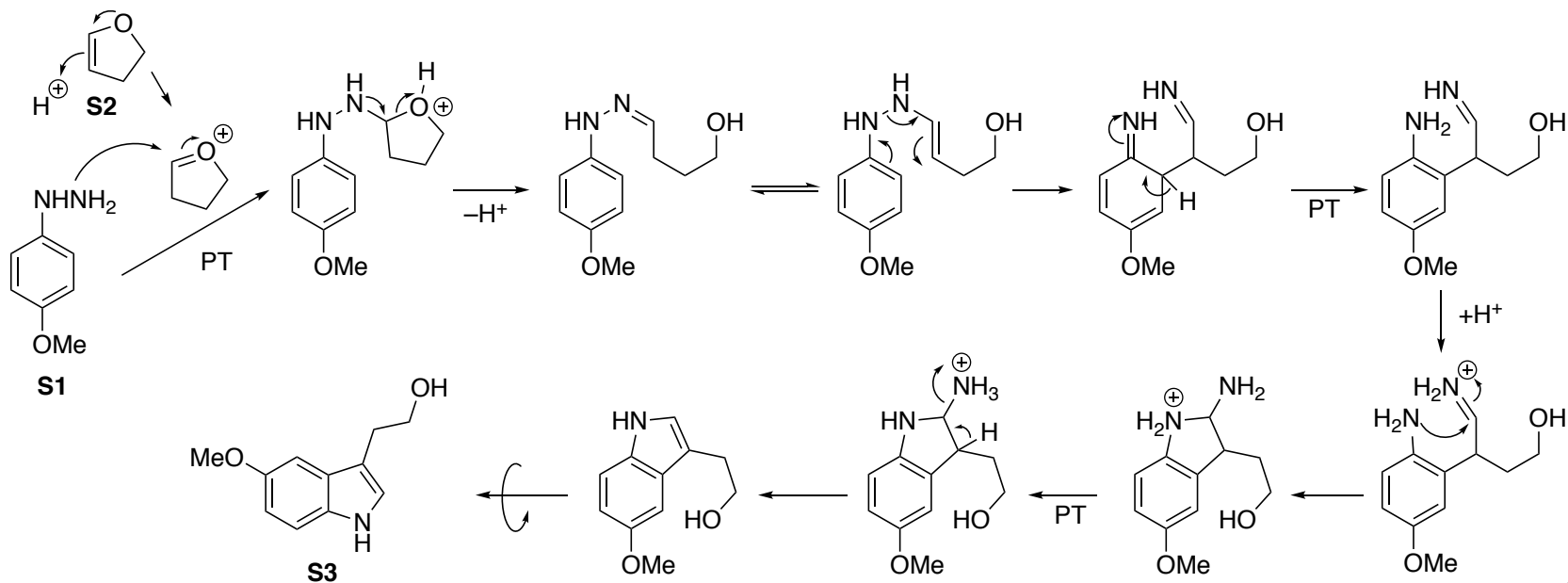
Retrosynthesis



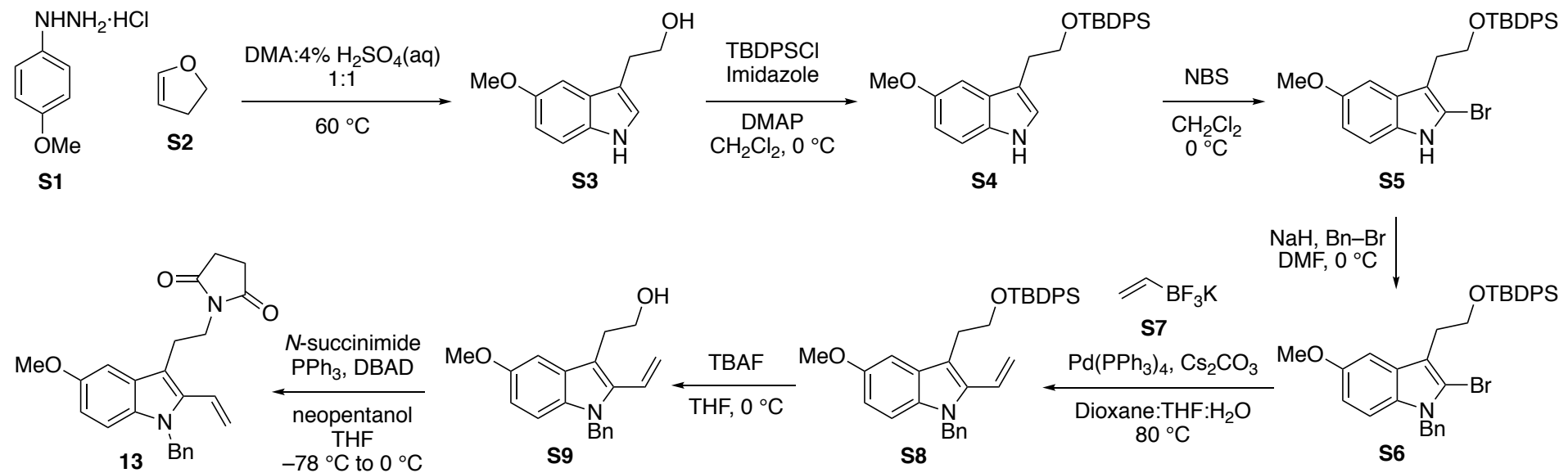
Forward Synthesis



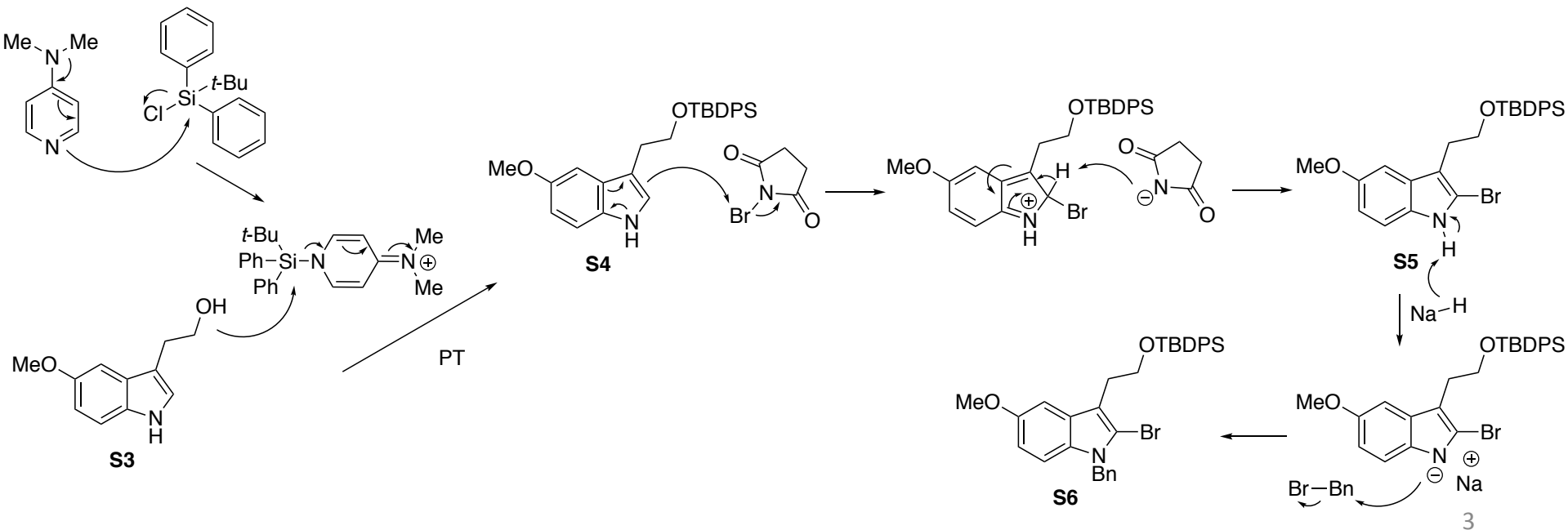
Fisher-Indole Synthesis



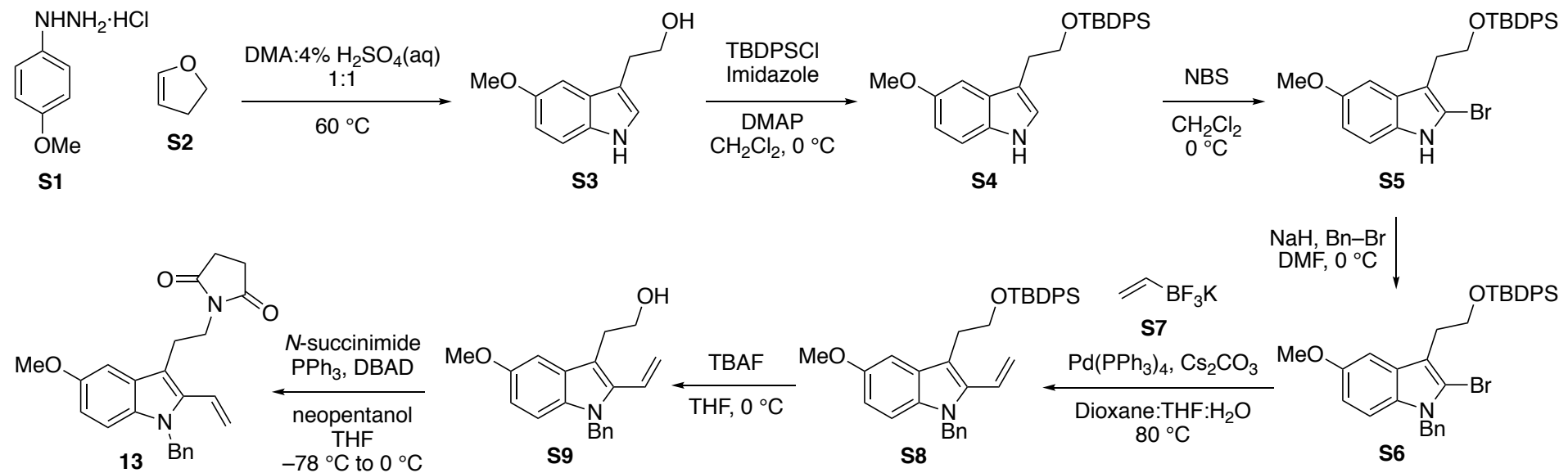
Forward Synthesis



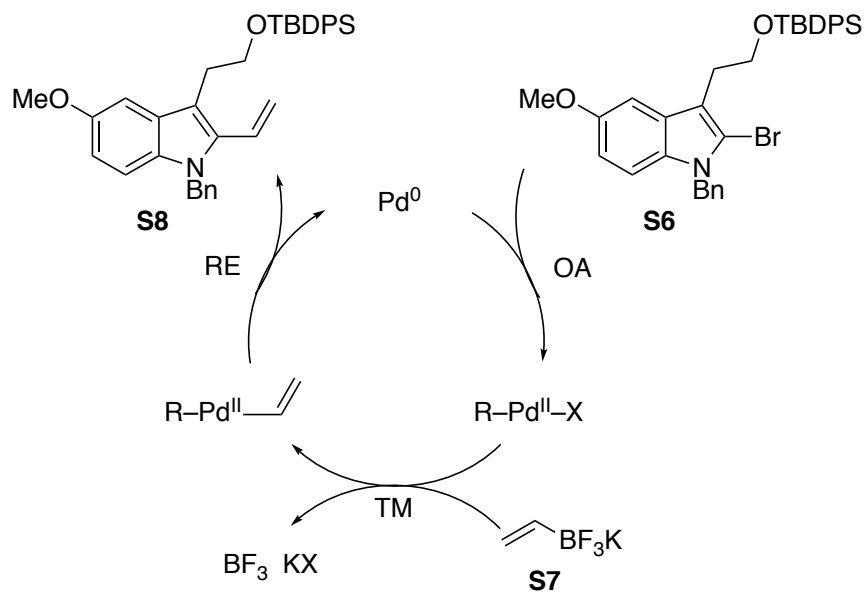
Mechanisms:



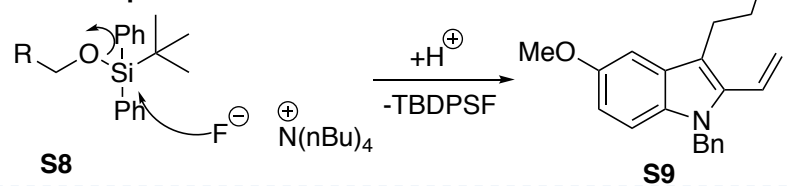
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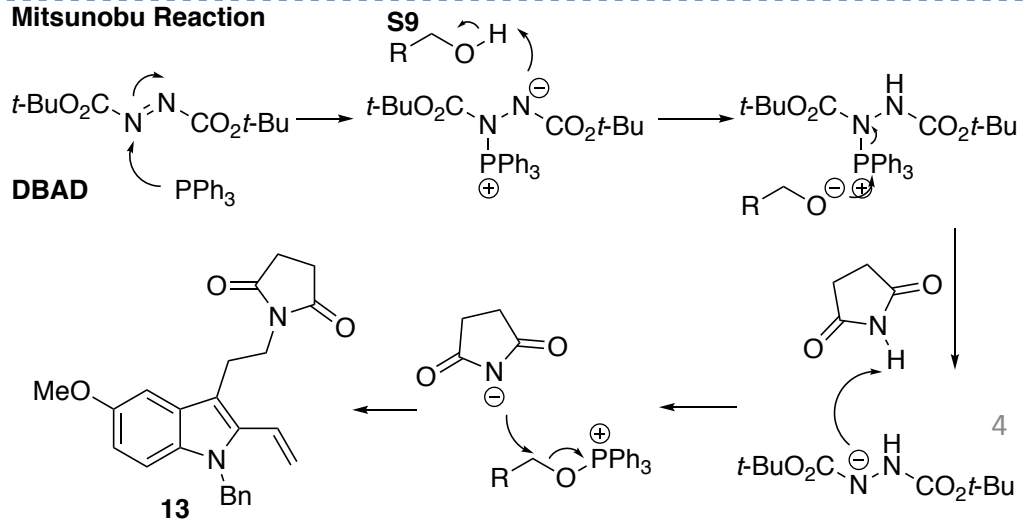
Suzuki Coupling



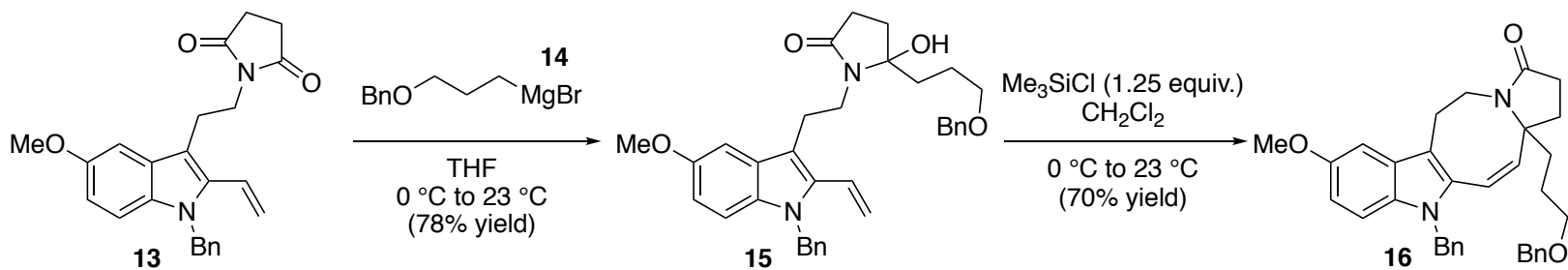
TBDPS Deprotection



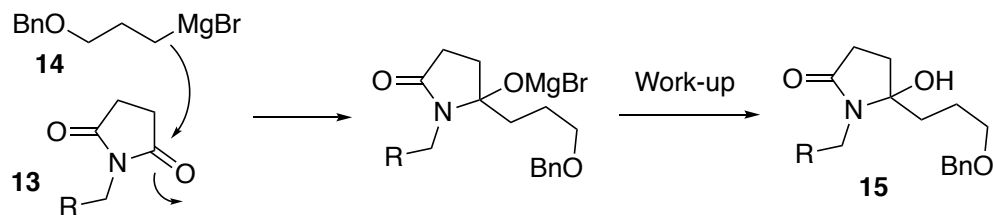
Mitsunobu Reaction



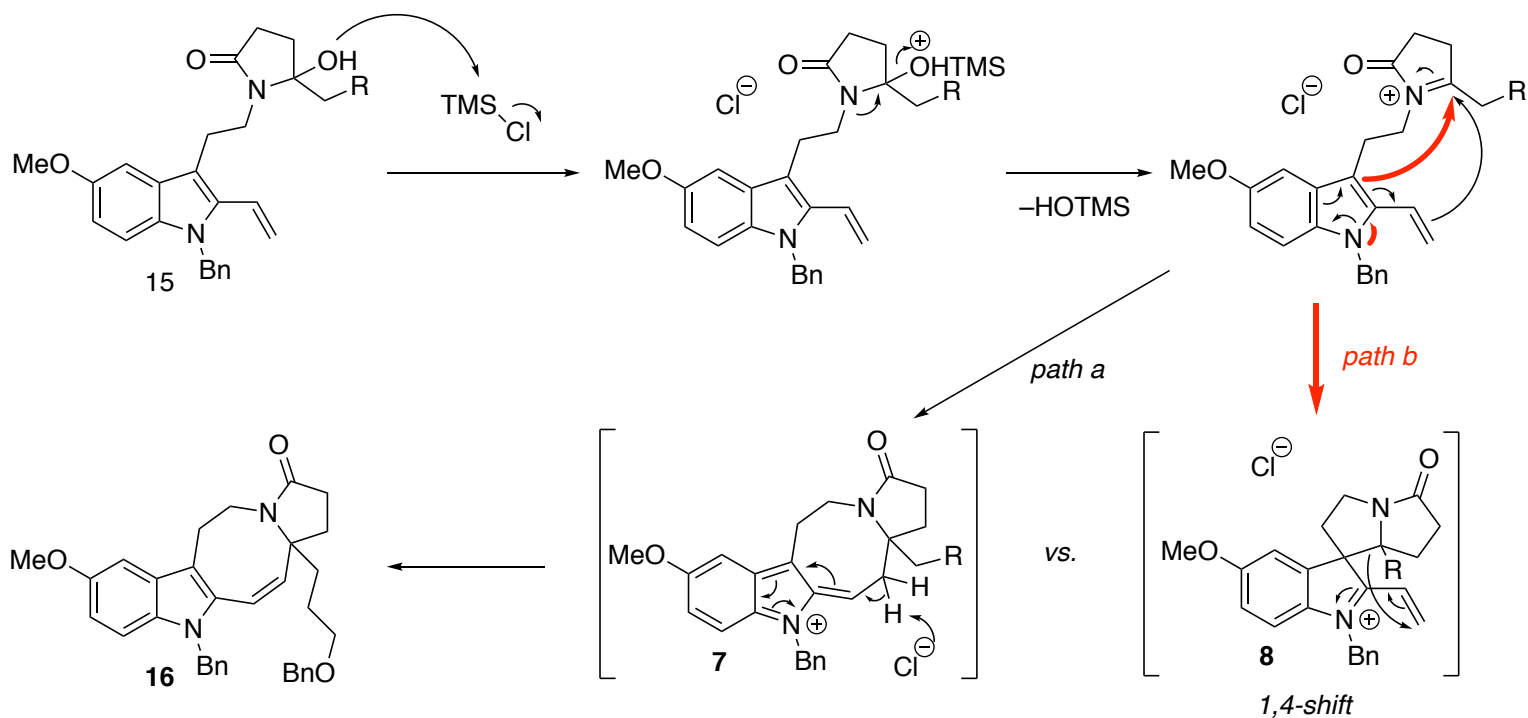
Forward Synthesis



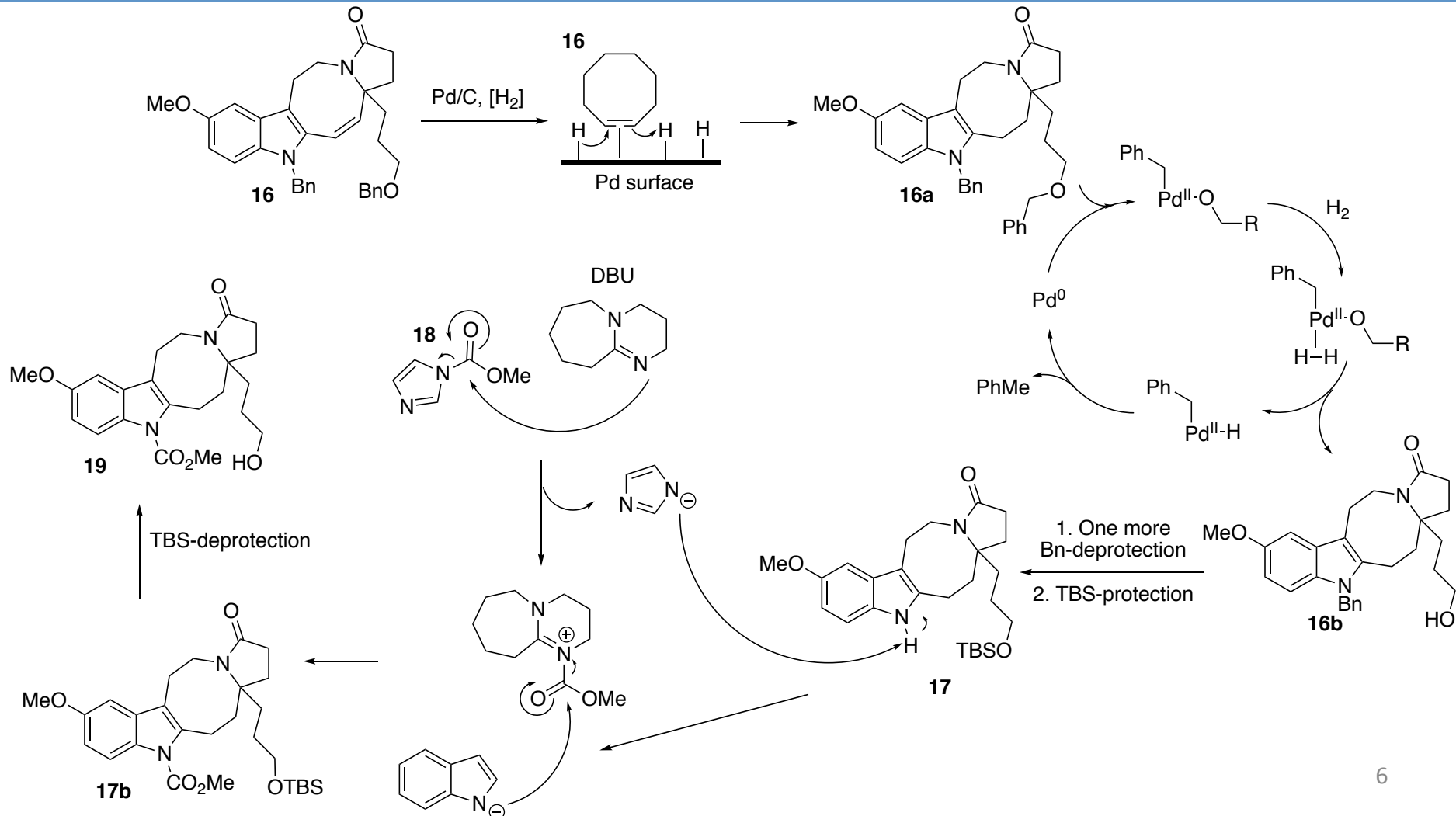
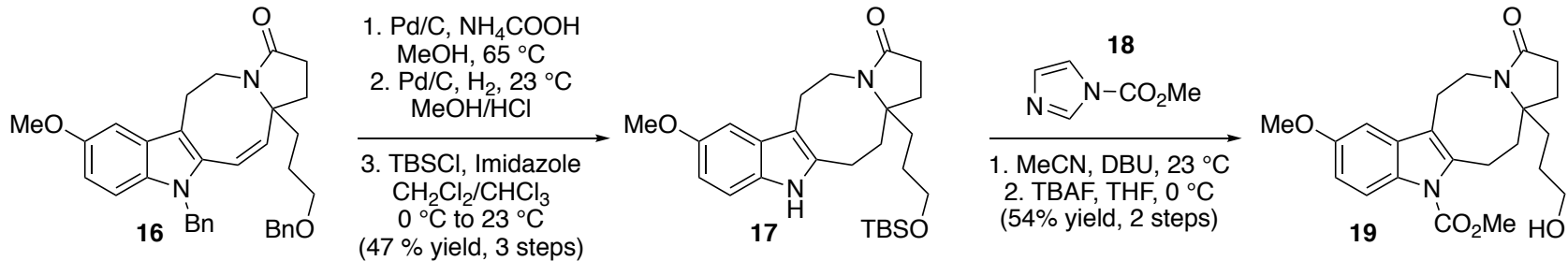
Grignard Addition



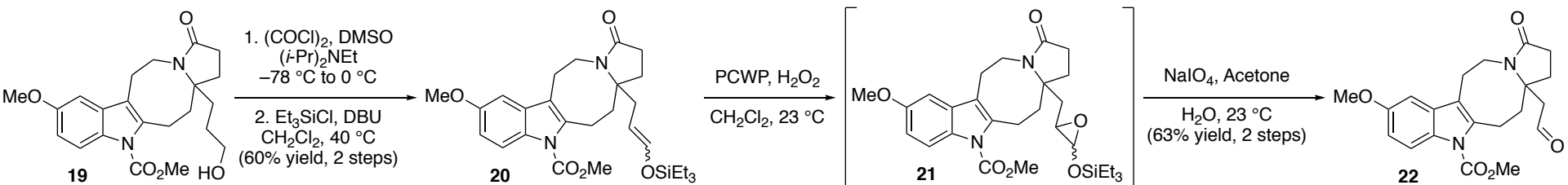
Vinylogous Pictet-Spengler Cyclization



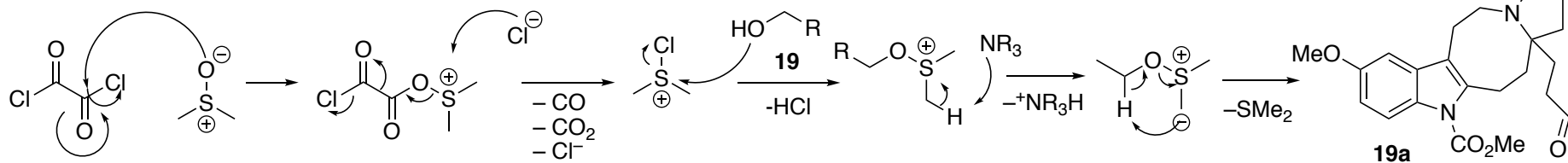
Forward Synthesis



Forward Synthesis

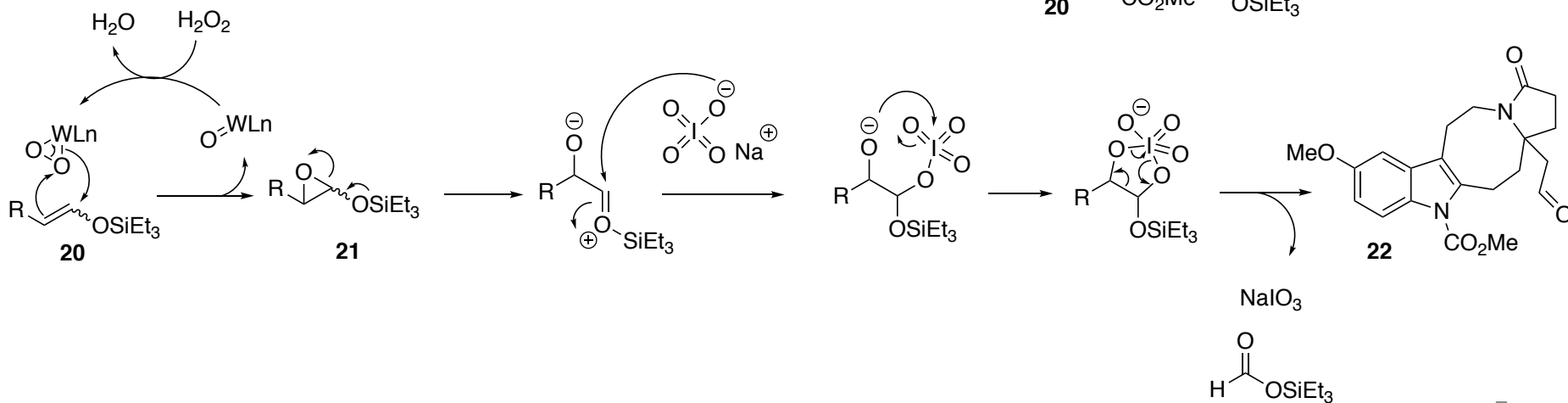


Swern Oxidation



2-step tungsten-catalyzed dehomologation reaction

PCWP = Peroxotungstophosphate



Forward Synthesis

