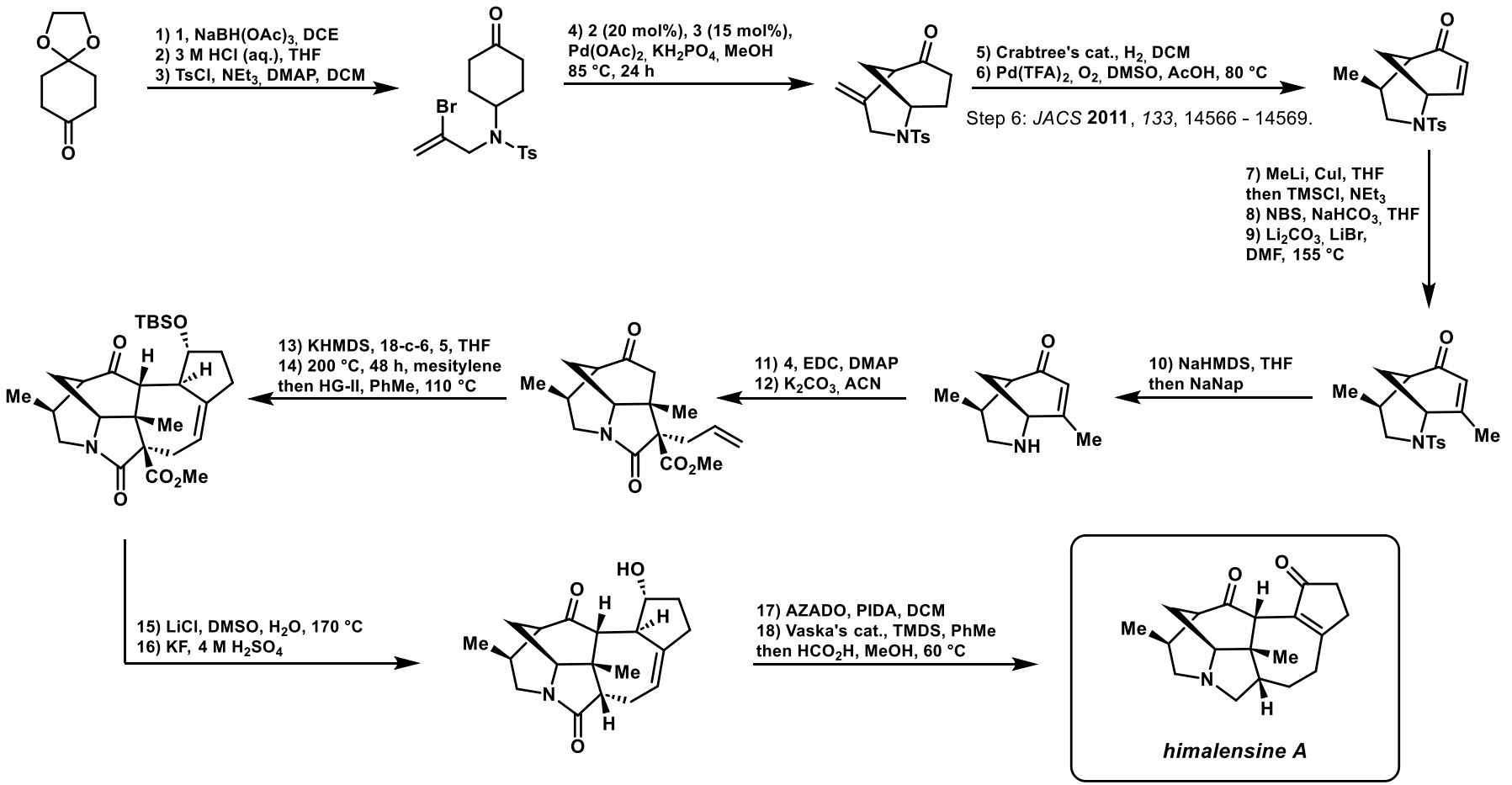
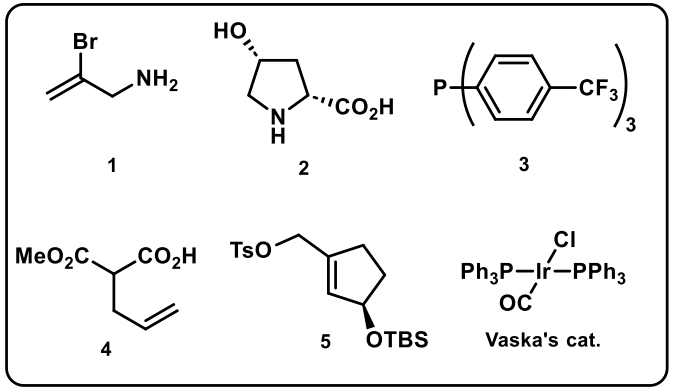
Enantioselective Total Synthesis of (-)-Himalensine A via a Palladium and 4-Hydroxyproline Co-catalyzed Desymmetrization of Vinyl-bromide-tethered Cyclohexanones

R. Kučera, S. R. Ellis, K. Yamazaki, J. H. Cooke, N. Chekshin, K. E. Christensen, T. A. Hamlin, D. J. Dixon, *J. Am. Chem Soc.* **2023**, *145*, 5422–5430.





Please give a reasonable mechanism for step 4. Think about the process - why is this step so elegant and ,,efficient"?
Why is NaHMDS used in step 10?