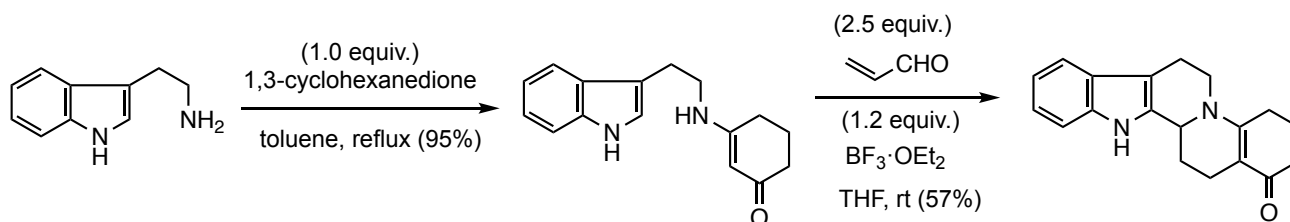


Q1: Explain a reasonable mechanism of the transformation to give **X** from the starting material.

Q2: Propose a synthetic route from **X** to (-)-deoxoapodine.

X.-S. Peng *et al.*
J. Org. Chem. ASAP
(10.1021/acs.joc.9b02918)

Q: Propose reasonable intermediates and mechanisms of the following transformations. (For B3)



S. Luo, J. Zhao, and H. Zhai

J. Org. Chem. **2004**, *69*, 4548.