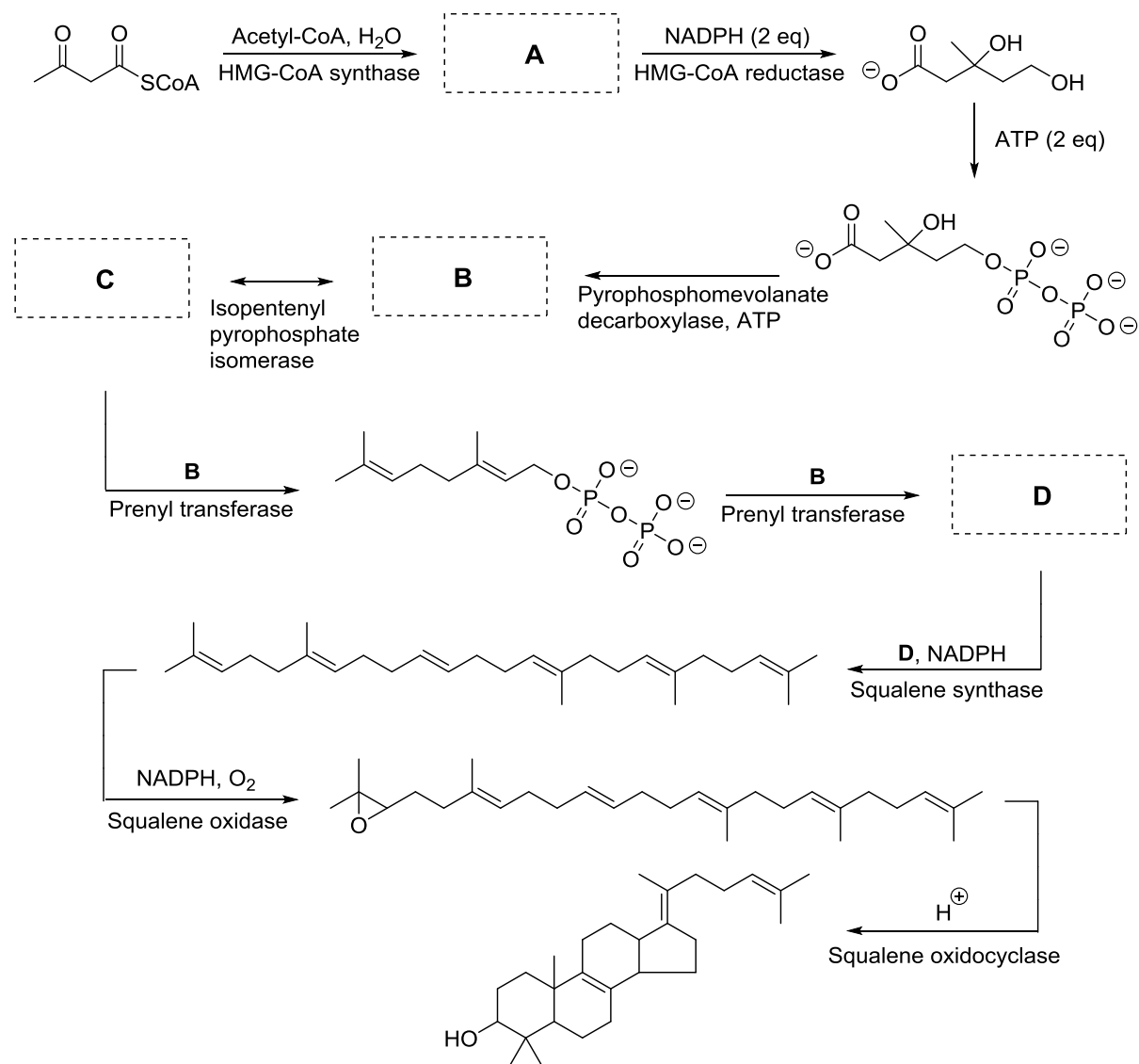
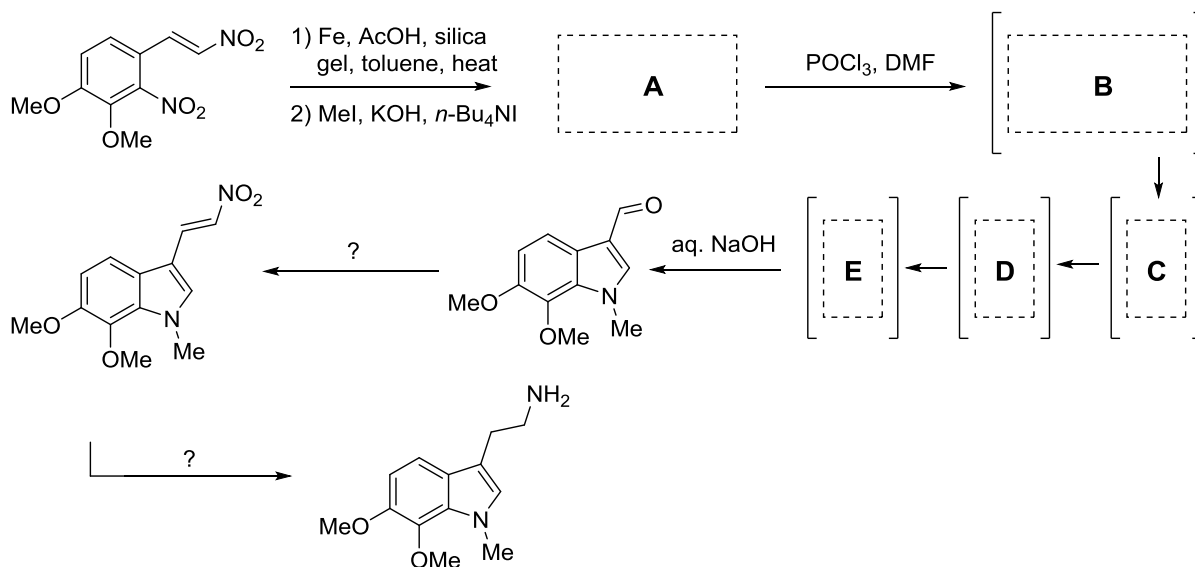


Q1: Please identify structures A-D and provide a mechanism for each transformation.

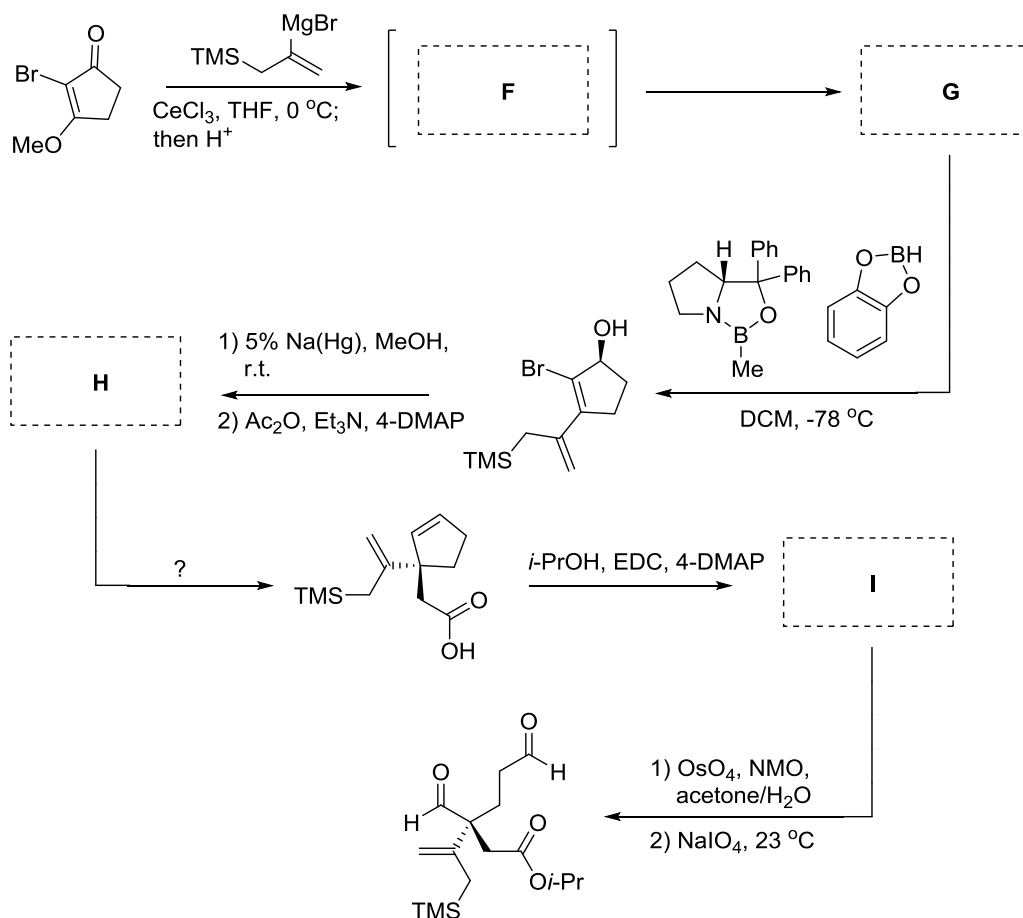


Q2: Please identify any missing structures (A-O) and propose reagents if necessary. Provide mechanisms for all steps.

Synthesis of precursor I:



Synthesis of precursor II:



Cascade sequence and final stages:

