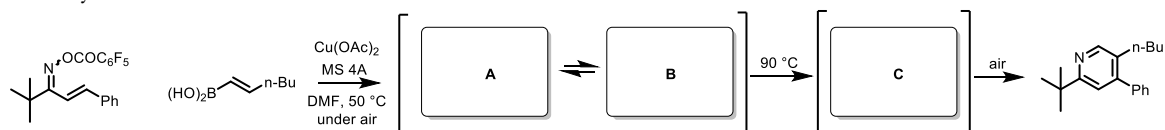
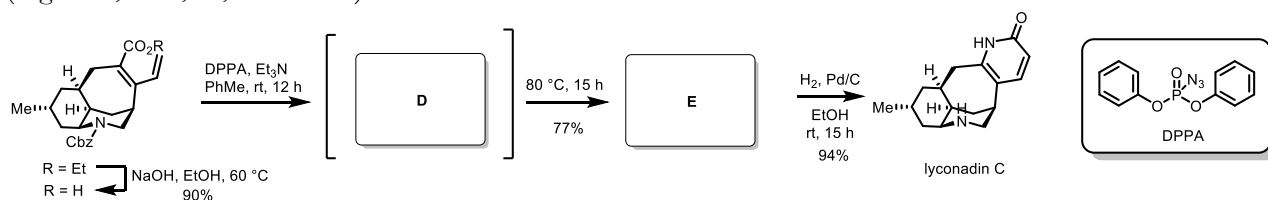


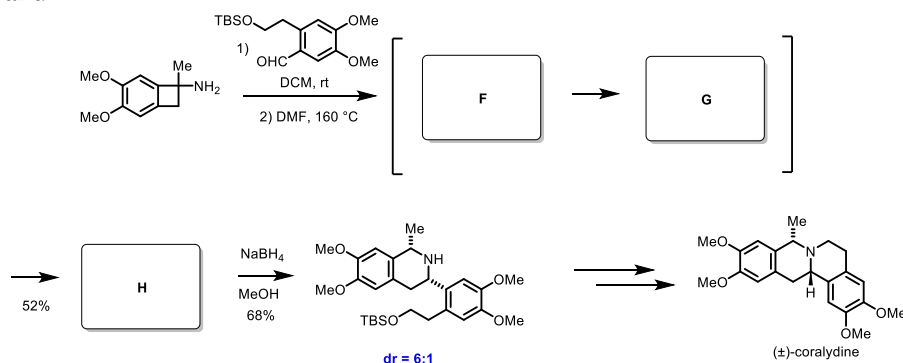
- Identify the product that S. Liu and L.S. Liebeskind obtained when treated α,β -unsaturated ketoxime with alkenylboronic acid and copper (II) acetate (*J. Am. Chem. Soc.*, **2008**, *130*, 6918-6919). Identify the two intermediates **A** and **B** formed during the reaction which are in equilibrium between each other. Additionally, rationalize the stereoselectivity outcome of intermediate **C**.



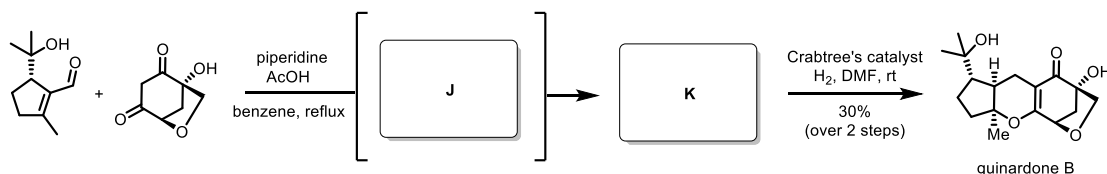
- Identify the intermediate **D** and the product **E** used in the total synthesis of lyconadin C by Cheng and Waters in 2013 (*Org. Lett.*, **2013**, *15*, 4226-4229)



- The group of Baudoin reported the synthesis of (\pm)-coralydine in 2008 (*ACIE*, **2008**, *48*, 179-182). Identify the intermediates **F**, **G** and **H**.



- Identify the intermediate **J** and the product **K** used in the synthesis of guinardone B. (*Org. Lett.*, **2020**, *22*, 1644-1647)



- Nitrile **K** was used in the total synthesis of phomarol in 2023 by Gui's group (*JACS*, **2023**, *145*, 9354-9363). In a retrosynthesis manner, identify the two intermediates **L** and **M** which involves a 6 π -electrocyclisation.

