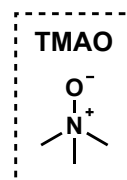
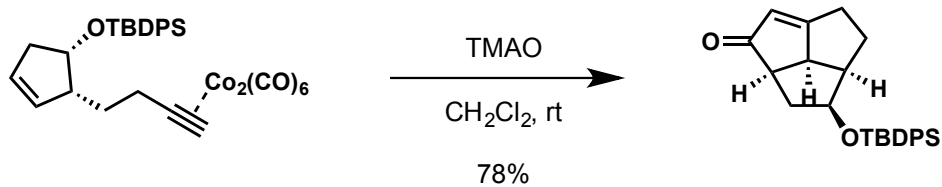
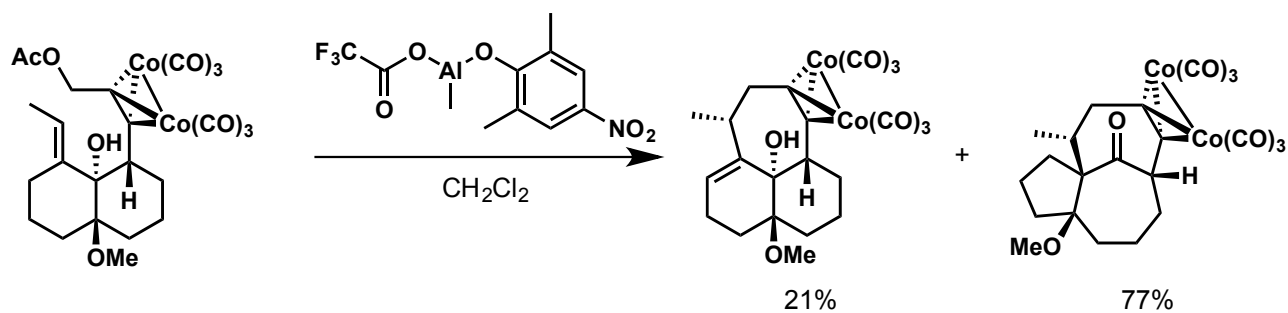


1. Provide the name and mechanism for the following transformation.



2. Provide the mechanisms for both products. Additionally, give the name of the reaction that yields the common intermediate.

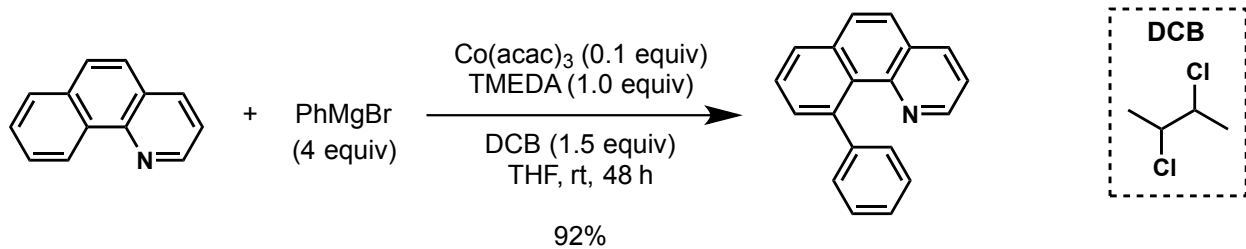


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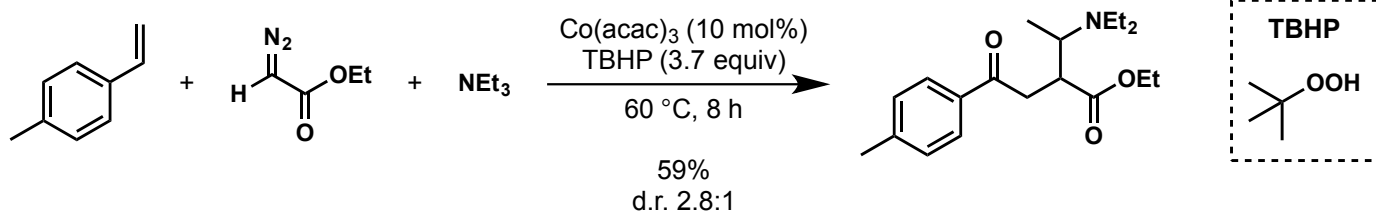
Tanino, K.; Onuki, K.; Asano, K.; Miyashita, M.; Nakamura, T.; Takahashi, Y.; Kuwajima, I. *J. Am. Chem. Soc.* **2003**, 125, 1498.

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3. Provide the mechanism for the reaction below.



4. Provide the mechanism for the reaction below.



5. Provide the mechanism for the reaction below.

