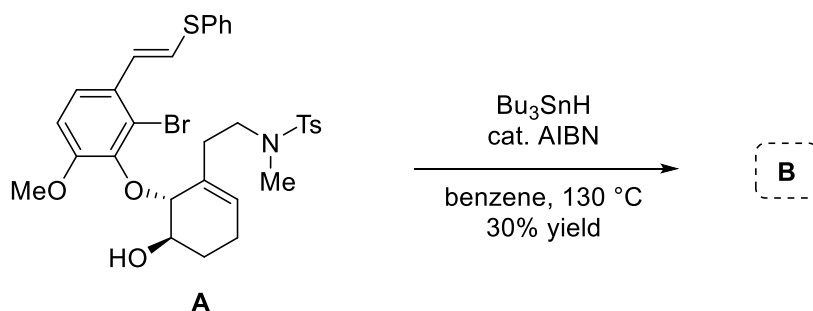
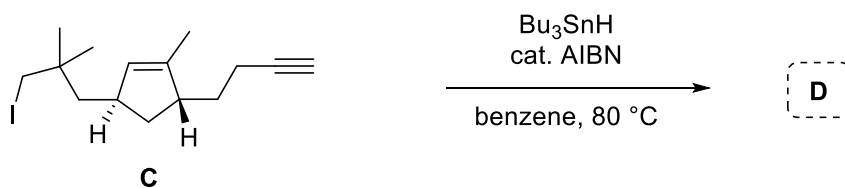


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- 1) A radical cascade reaction on **A** leads to **B**, which is an advanced intermediate in the total synthesis of morphine.
- What is the structure of **B**?
 - Draw all relevant steps and important intermediates for the cascade cyclization.



- 2) The outlined reaction of **C**, leading to hirsutene **D**, belongs to the classics in total synthesis.
- What is the structure of **D**?
 - Draw all relevant steps and important intermediates.



- 3) Following transformation is part of Nobel laureate E. J. Corey's total synthesis of perhydrohistrionicotoxin.
- What is the structure of **F**?
 - Draw all relevant steps and important intermediates.

