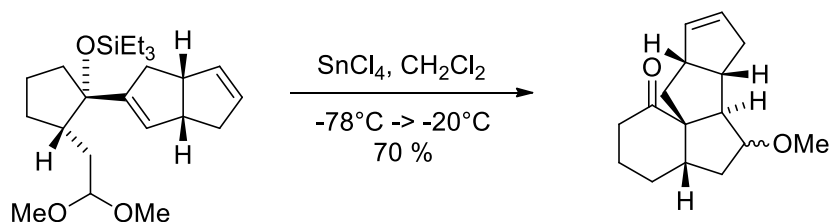
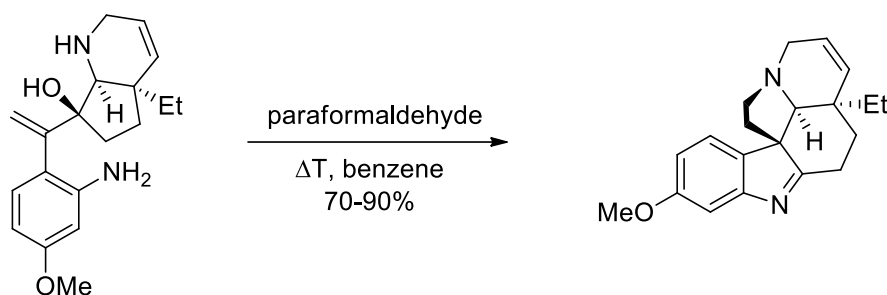


Exercise 1

Provide the reaction mechanism and draw relevant intermediates (use arrow pushing!) of this Lewis-acid promoted transformation.

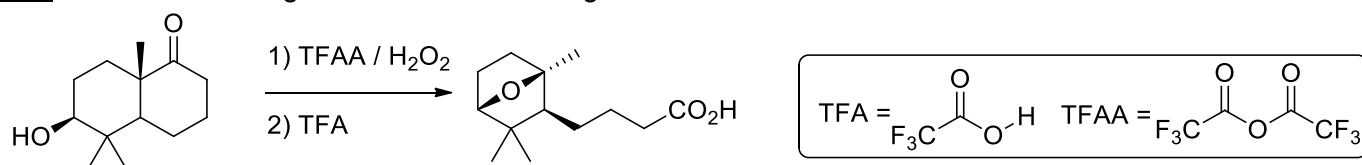
**Exercise 2**

Provide the reaction mechanism and draw relevant intermediates. What is the name of this reaction?

**Exercise 3**

Provide the mechanism and give a rationale for the observed selectivity of the first step.

Hint: You first need to generate the active reagent from TFAA and H_2O_2 .

**Exercise 4**

Provide a mechanism for the shown transformation.

