

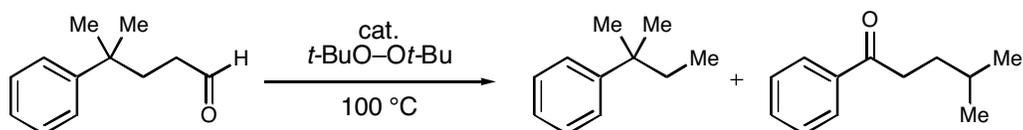
Massachusetts Institute of Technology

5.13: Organic Chemistry II

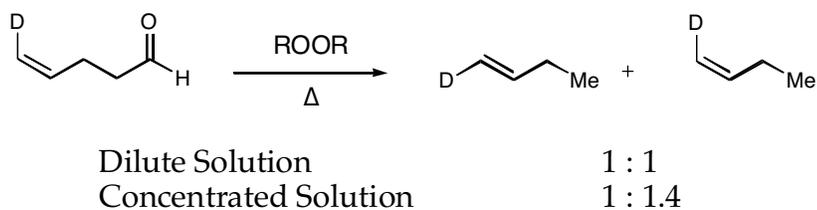
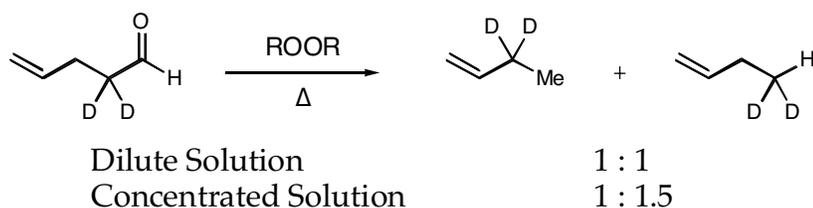
Fall 2003, S. Tabacco

Optional Problem Set 8: Radicals

1. Please provide a detailed mechanism for the formation of each of the illustrated products.



2. The decarbonylation of the two labeled pentenals shown below has been studied.

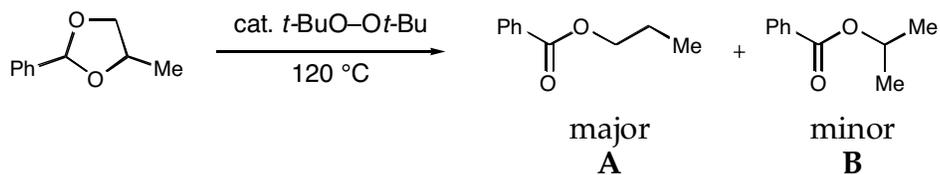


- a) Please provide a mechanism for the formation of each of the four products.
 b) For each reaction, explain the effect of the concentration on the product distribution.

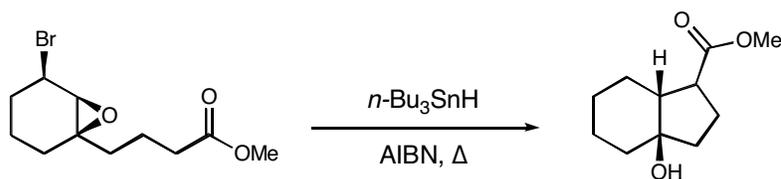
3. Please provide a mechanism for the illustrated reaction. Show the initiation and propagation steps.



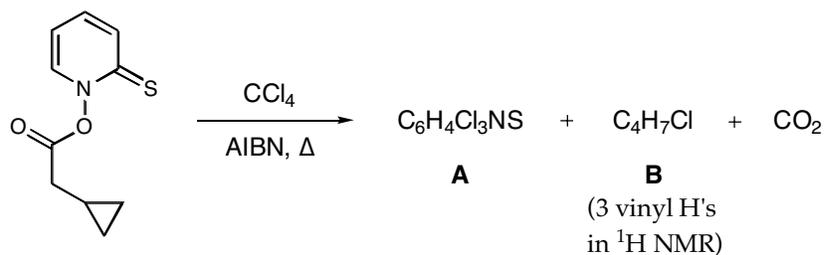
4. Please provide a mechanism for the formation of each product, and rationalize the predominant formation of **A**.



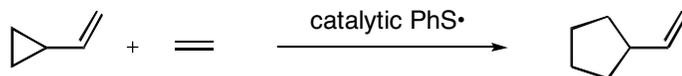
5. Please provide a mechanism for the illustrated transformation.



6. Identify **A** and **B**, and provide a mechanism for their formation.



7. Please provide a mechanism for the illustrated transformation.



8. Please provide a mechanism for the illustrated transformation.

