CHEM 109, Lecture 2

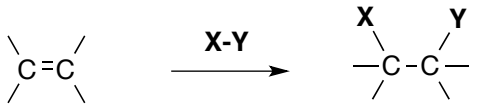
Mechanism Review

1. Electrophilic Addition (E-philic Add'n)
2. Nucleophilic Substitution (S_N1 & S_N2)

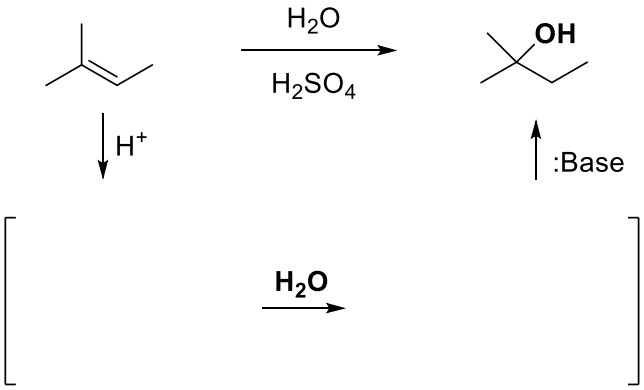
* Given starting materials and either product(s) or name of mechanism, you should be able to complete the mechanism and/or draw the product(s).

MECHANISM REVIEW

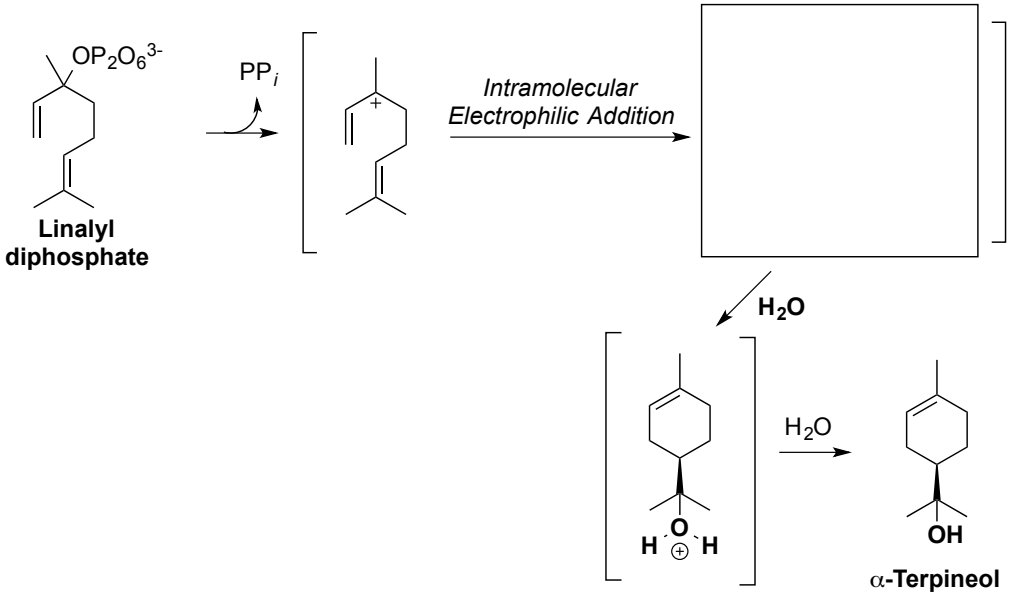
1. Electrophilic Addition to Alkenes



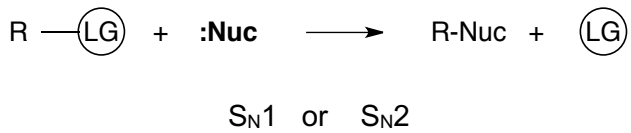
E-philic Add'n in Synthesis: Acid-Catalyzed Hydration of Alkenes



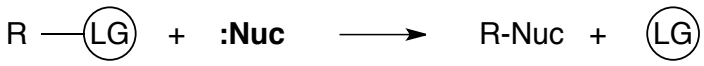
E-philic Add'n in Biology: Biosynthesis of **α-terpineol**, component of pine oil



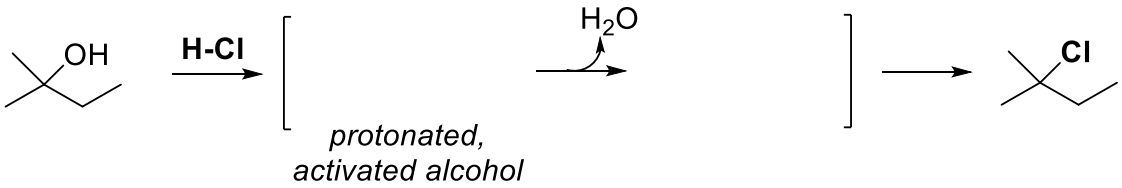
2. Nucleophilic Substitution



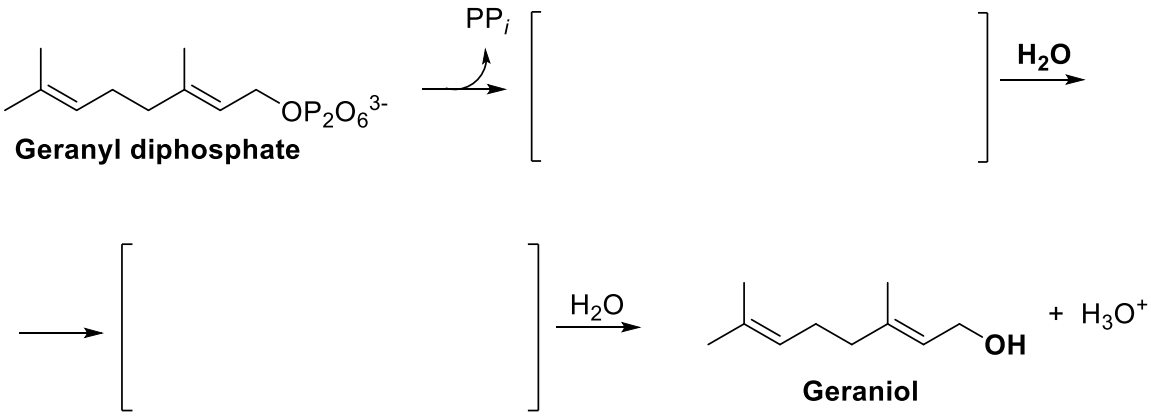
2A. Unimolecular Nucleophilic Substitution (S_N1) Mechanism



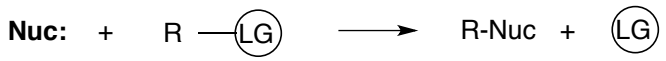
S_N1 *in Synthesis (8L Lab Practical):*



S_N1 *in Biology*: Biosynthesis of geraniol, rose oil component



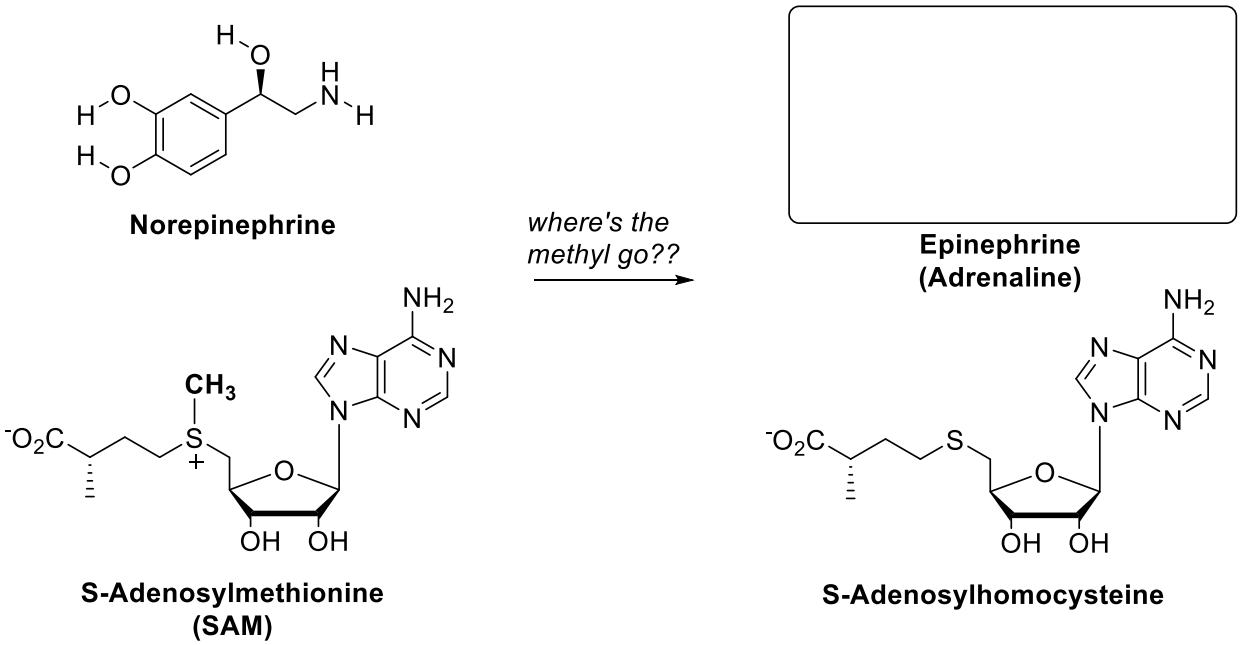
2B. Bimolecular Nucleophilic Substitution (S_N2) Mechanism



S_N2 in Williamson ether synthesis

S_N2 in Biology: **Synthesis of Adrenaline**

Hint: the most basic atom is also the best nucleophile!



Next time…

- Carbonyl Mechanisms: McMurry & Begley (M&B) Chapter 1.5-1.7

Next week in discussion…

- **Open notebook quiz directly from lectures 1 & 2 HW (syllabus)**
  - *Take a few days or at least sleep on it before checking the solutions online!*