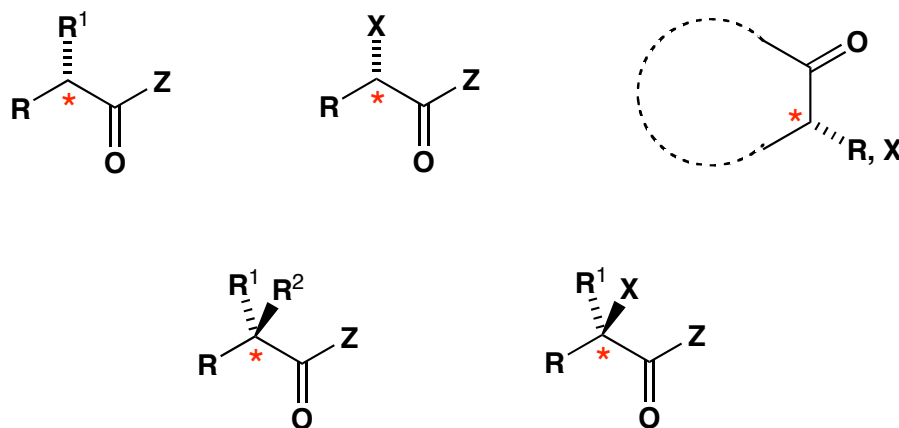


Massachusetts Institute of Technology
Organic Chemistry 5.512

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Unit 2
Stereocontrolled Alkylation
and Related Electrophilic Substitution Strategies

Key Retrons



- I. Intrinsic Stereochemistry*
- II. Substrate Control: Asymmetric Induction by Molecular Framework*
- III. Substrate Control: Asymmetric Induction by Chiral Auxiliaries*
- IV. Reagent Control Strategies: Chiral Electrophiles*
- V. Catalytic Methods*

Background Topics for Review: Conditions for generating enolates, "azaenolates", and related species; pK_A of relevant substrates and bases, kinetic vs. thermodynamic conditions for enolate generation, enolate stereochemistry, relative reactivity of alkylating agents, conditions for imine and hydrazone formation and cleavage, synthetically useful transformations of carbonyl compounds.