

PRINCIPLES OF ORGANIC CHEMISTRY FOR REVIEW FOR MEDICINAL CHEMISTRY

- I. Recognition of basic structural groups in organic compounds (e.g., alcohols, ketones, aldehydes, esters, amides, amines, carboxylic acids, anilines, pyridines, phenols, etc.)
- II. Concepts of pKa and pH as they relate to organic compounds
- III. Isomers (positional, geometric and configurational isomerism)
- IV. Reaction Chemistry

Arrow pushing mechanisms for:

1. Nucleophilic Substitution
 - a. At saturated carbon (S_N-1 , S_N-2)
 - b. At unsaturated carbon (e.g., general base-catalyzed hydrolysis of ester and amides)
2. Nucleophilic addition to unsaturated carbon (e.g., to α,β -unsaturated carbonyl compounds such as a Michael addition)
3. Elimination reactions (e.g., dehydrations)
4. Tautomerization (e.g., keto-enol tautomerization)