

ORGANIC CHEMISTRY 2 LECTURE GUIDE 2019

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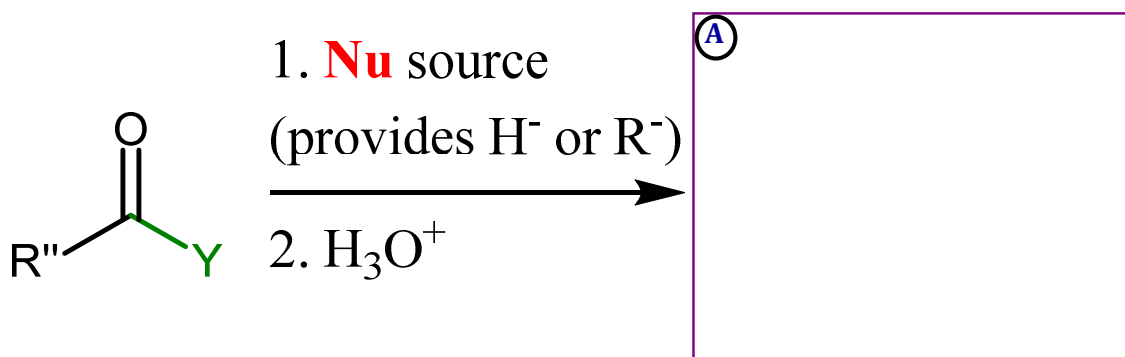
Lesson VI.3. Classifying Reactions of Carbonyls

Type A is Addition then Protonation

Type A: Single Nucleophilic Addition

The net result is:

1. Add a nucleophile (Nu) to the carbonyl C to replace the pi bond
2. Protonate the carbonyl O.



Notes

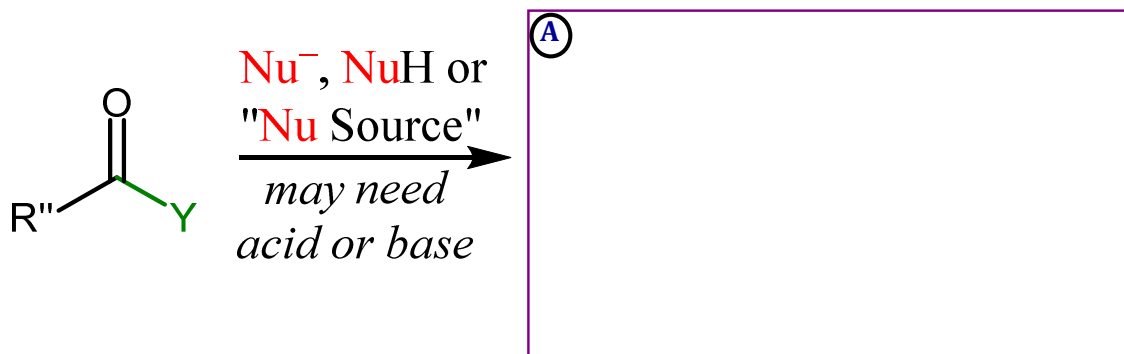
Lesson VI.3. Classifying Reactions of Carbonyls

Type B Replaces LG (Y) for a Nucleophile

Type B: Nucleophilic Acyl Substitution (S_NAc)

The net result is:

1. Substitute one nucleophile (Nu) for one leaving group (Y) attached to the carbonyl carbon

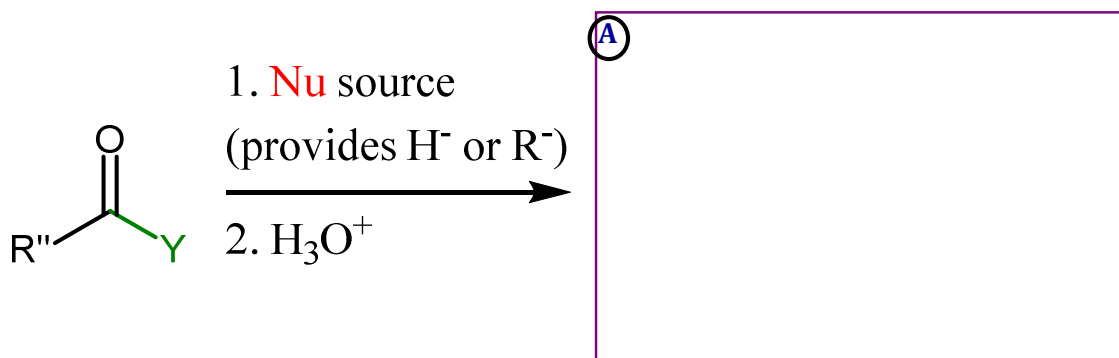


Notes

Lesson VI.3. Classifying Reactions of Carbonyls*Type C is Type B then Type A***Type C: S_NAc then Nucleophilic Addition****(Type C = B then A!)**

The net result is:

1. Replace the pi bond to O and the leaving group with two bonds to nucleophiles.

Notes

Lesson VI.3. Classifying Reactions of Carbonyls

Type D Replaces BOTH Bonds to Carbonyl O

Type D: Replace both Bonds to the Carbonyl O

The net result is:

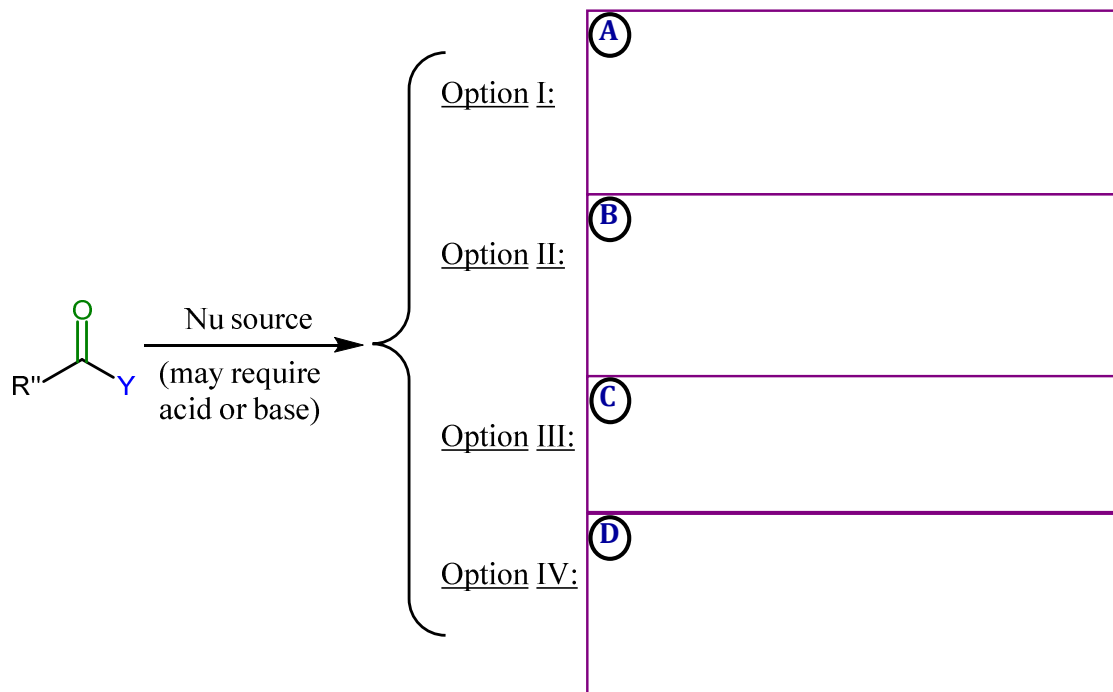
1. Remove the carbonyl O.
2. Replace the two bonds to carbonyl C. There are four options to replace the two bonds ...

Notes

Lesson VI.3. Classifying Reactions of Carbonyls

Four Options for Type D Reactions

Type D: Replace both Bonds to the Carbonyl O



Notes