

CHEM 6210 Format for Library Project Results

REACTION: REACTION NAME

Text Reference: Reference to Carroll's text or others

GENERAL SCHEME:

A general reaction scheme

MECHANISM:

A generally accepted mechanism

NOTES:

Where needed, notes represented by Note A, B, etc.

REFERENCES:

References to reaction examples from recent primary literature. Represented by Ref. 1, 2, etc.

NEW PAGE

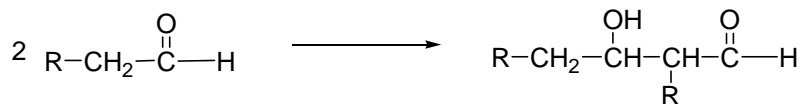
EXAMPLES:

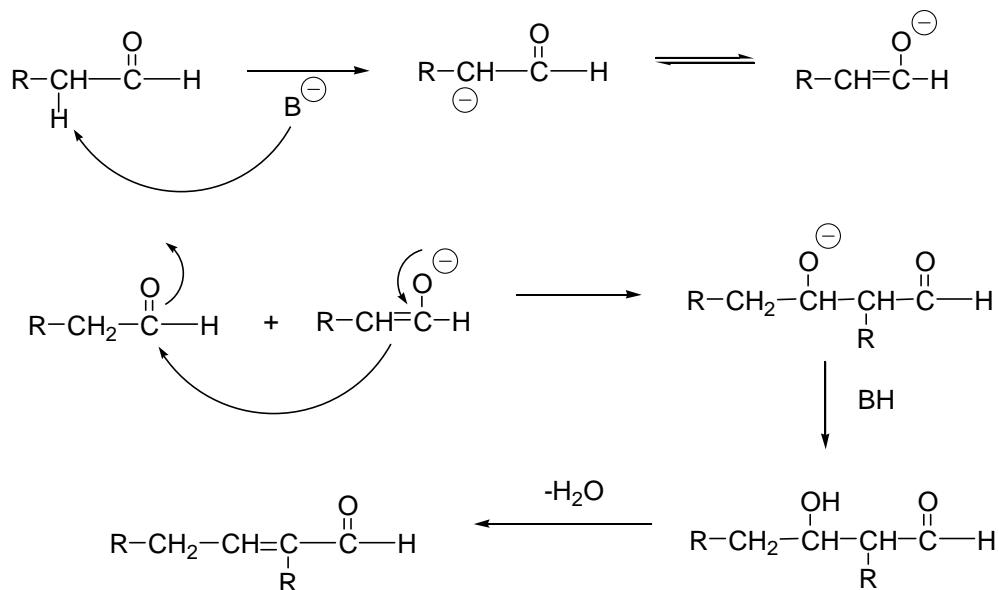
Equations for examples found in the primary literature.

See example on next two pages:

REACTION: ALDOL CONDENSATION

Text Reference: Carroll, Structure and Mechanism: 430-1

GENERAL SCHEME:Note A

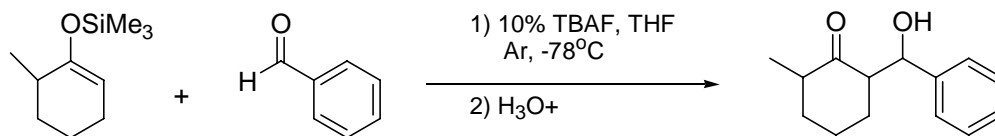
MECHANISM:**NOTES:**

- Although both acid (via the enol) and base (via the enolate) conditions can be used, base-catalyzed reactions are more common.
- This is an example of a "mixed aldol" condensation. In order for this to be a useful reaction, the second carbonyl should not have acidic hydrogens next to the carbonyl. Both formaldehyde and benzaldehyde are useful for this condensation.
- This is an example of an "intramolecular aldol condensation".
- The preformed silyl enol ether is a disguised enolate that is released by reaction with fluoride ion.

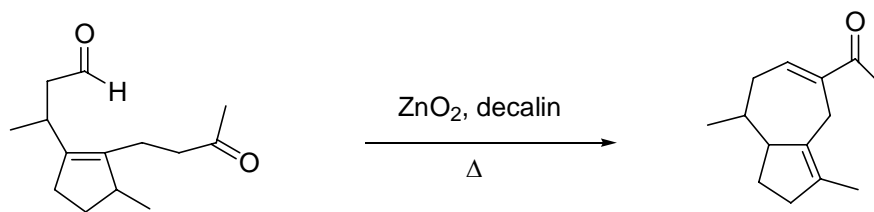
REFERENCES:

- R. Noyori, K. Yokohama, J. Sakata, I. Kuwajima, E. Nakamura and S. Shimizu, *J. Am. Chem. Soc.*, (1977), 99, 1265.
- W. Hoffman and H. Siegel, *Tetrahedron Lett.*, (1975), 533.
- B.M. Trost, C.D. Shuey, F. Dininno, Jr., and S.S. McElvain, *J. Am. Chem. Soc.*, (1979), 101, 1284.
- S.C. Welch, J.-M. Assercq, and J.-P. Loh, *Tetrahedron Lett.*, (1986), 1115.
- S.D. Burke, C.W. Murtiashaw, J.O. Saunders, and M.S. Dike, *J. Am. Chem. Soc.*, (1982), 104, 872.

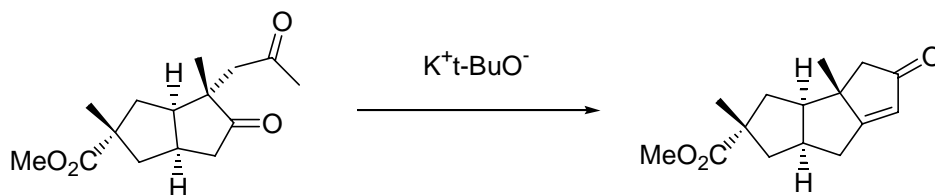
EXAMPLES :



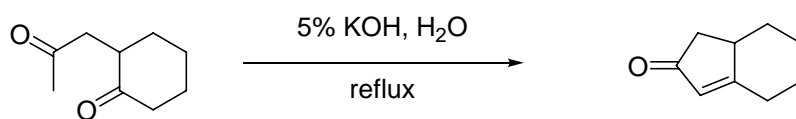
Ref. 1, Notes B,D



Ref. 2, Note C



Ref. 3, Note C



Ref. 4, Note C



Ref. 5, Note C