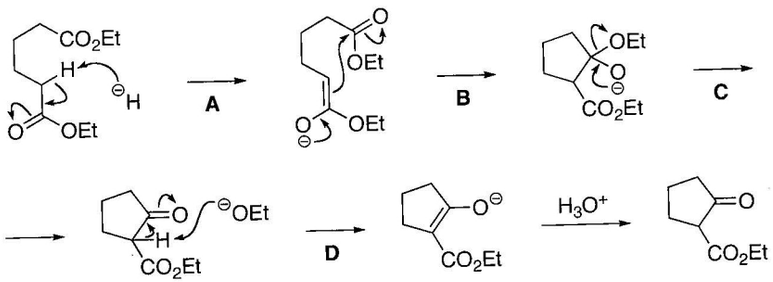
projection.

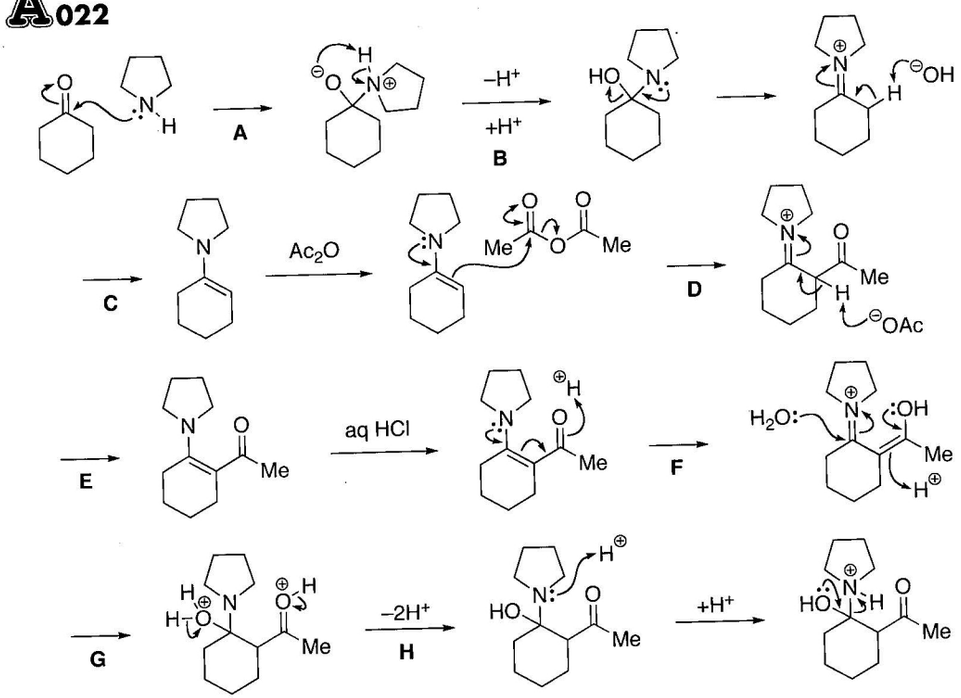
A021

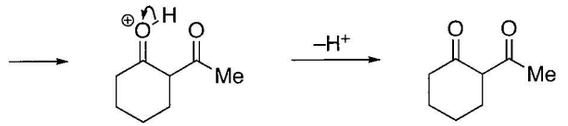


Schaefer, J. P.; Bloomfield, J. J. *Org. React.* **1967**, *15*, 1.

Dieckmann condensation. **A**: Deprotonation of the ester to form an enolate. **B**: Intramolecular addition of the enolate to the other ester. **C**: Elimination of ethoxide ion. **D**: pK$_a$ $RCOCH_2CO_2R$ = 10.7, EtOH = 16.

A022

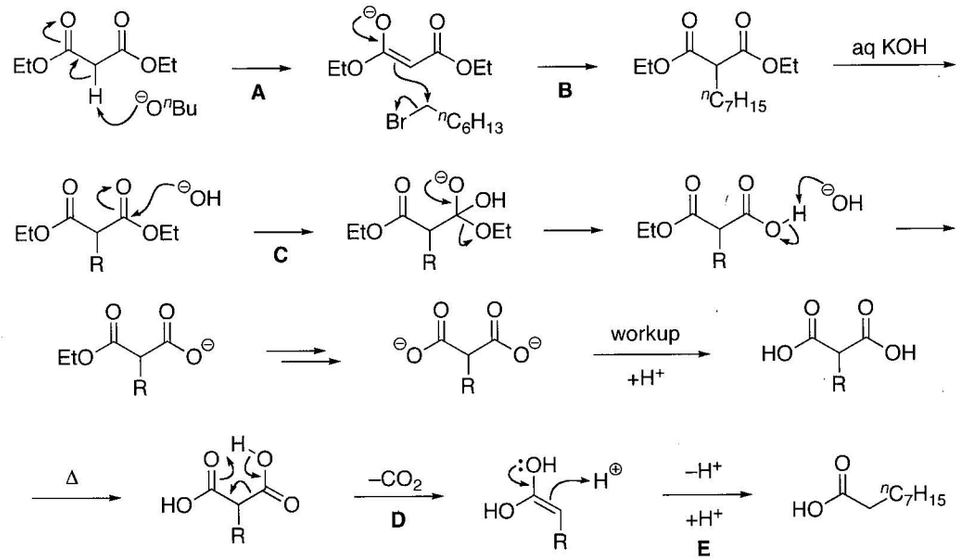




Stork, G.; Brizzolara, A.; Landesman, H.; Szmuszkovicz, J.; Terrell, R. *J. Am. Chem. Soc.* **1963**, *85*, 207.

Stork enamine reaction. **A**: Addition of pyrrolidine to the ketone. **B**: Proton transfer followed by elimination of hydroxide ion. **C**: Deprotonation to form an enamine. **D**: Attack of the enamine to acetic anhydride. **E**: Deprotonation to form a vinylogous amide. **F**: Protonation of the vinylogous amide. **G**: Addition of water to the resulting iminium ion. **H**: Proton transfer followed by elimination of pyrrolidine.

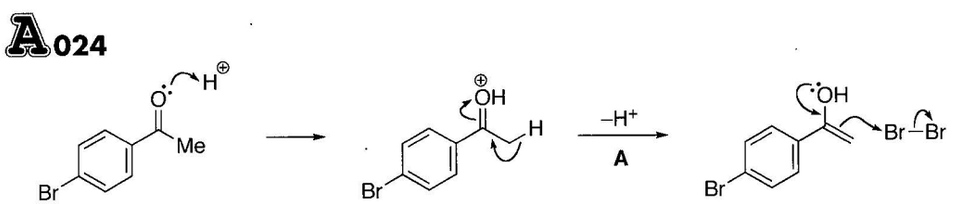
A023

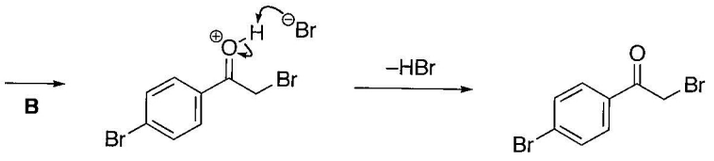


Reid, E. E.; Ruhoff, J. R. *Org. Synth., Coll. Vol. II* **1943**, 474.

A: Deprotonation of the malonate to form an enolate (pK$_a$ ROH = 16, $RO_2CCH_2CO_2R$ = 13). **B**: Attack of the enolate to an alkyl bromide. **C**: Hydrolysis of the esters. **D**: Decarboxylation through a six-membered transition state. **E**: Tautomerization.

A024

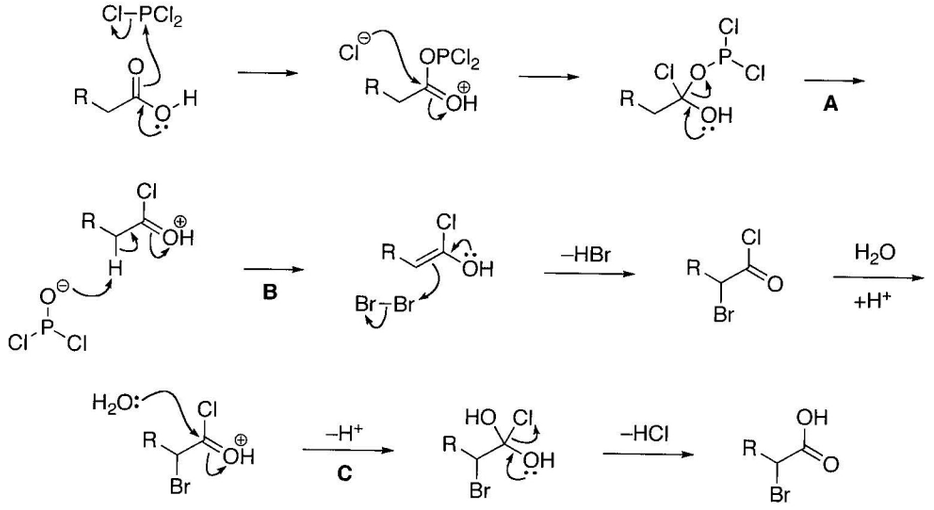




Langley, W. D. *Org. Synth., Coll. Vol. I* **1941**, 127.

A: Acid-catalyzed formation of an enol. **B**: Bromination of the electron-rich enol.

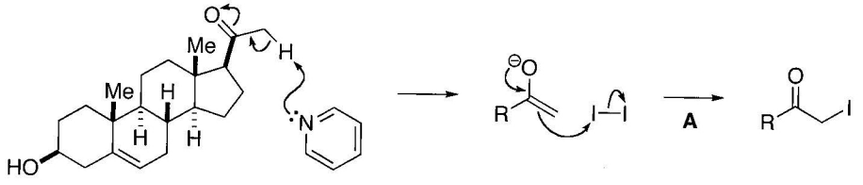
A025

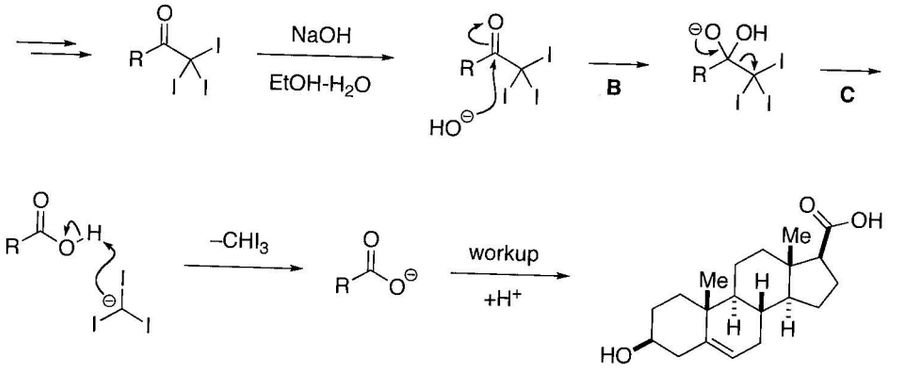


Clarke, H. T.; Taylor, E. R. *Org. Synth., Coll. Vol. I* **1941**, 115.

Hell-Volhard-Zelinsky reaction. **A**: Formation of an acid chloride. **B**: pK$_a$ CH_3COCl = 16, CH_3CO_2R = 24. Formation of an electron-rich enol followed by bromination. **C**: Hydrolysis of the acid chloride.

A026

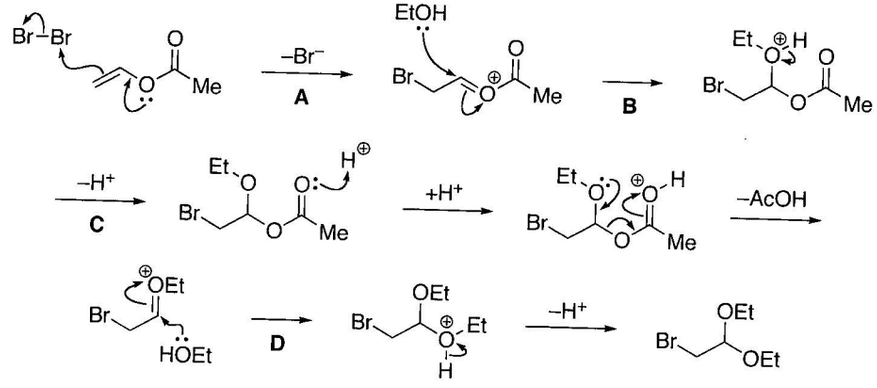




Bergmann, E. D.; Rabinovitz, M.; Levinson, Z. H. *J. Am. Chem. Soc.* **1959**, *81*, 1239.

Iodoform reaction. **A**: Iodination of the α-position of the ketone. **B**: Addition of hydroxide ion. **C**: Elimination of an iodoform anion.

A027



McElvain, S. M.; Kundiger, D. *Org. Synth., Coll. Vol. III* **1955**, 123.

A: Bromination of the electron-rich enol ester. **B**: Addition of EtOH. **C**: Proton transfer followed by elimination of AcOH. **D**: Addition of EtOH.

A028