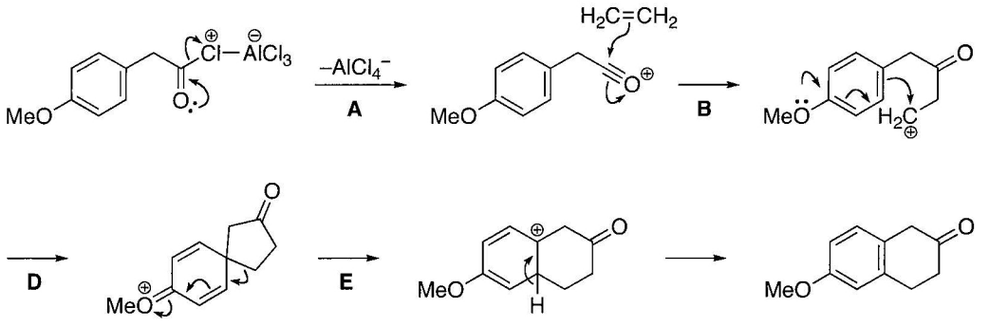
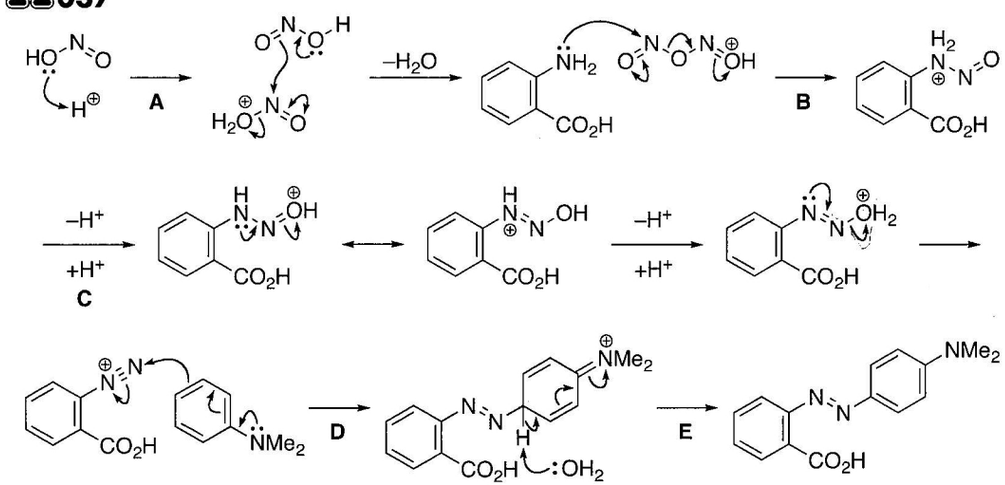


Sims, J. J.; Selman, L. H.; Cadogan, M. *Org. Synth., Coll. Vol. VI* **1988**, 744.

Intramolecular Friedel-Crafts acylation. **A**: Formation of an acylium ion. **B**: Addition of ethylene to the acylium ion. **C**: Attack of the aromatic ring to the resulting primary carbocation. **D**: Attack of the aromatic ring at the *para* position of the methoxy group to the primary carbocation. **E**: 1,2-Alkyl shift.

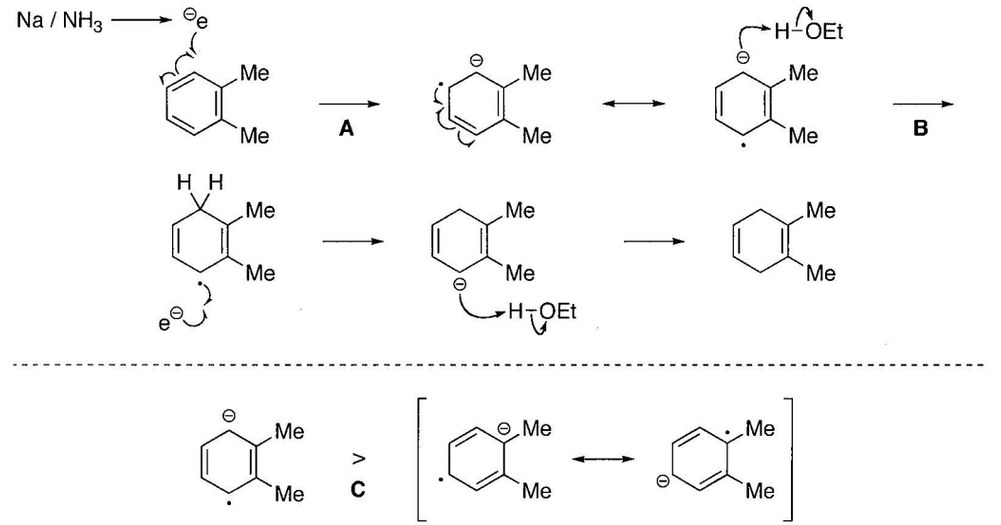
A037



Clarke, H. T.; Kirner, W. R. *Org. Synth., Coll. Vol. I* **1941**, 374.

A: Formation of nitrous anhydride. **B**: Addition of the aniline to nitrous anhydride. **C**: Proton transfer followed by elimination of water to form a diazonium salt. **D**: Addition of electron-rich dimethylaniline to the diazonium salt. **E**: Aromatization.

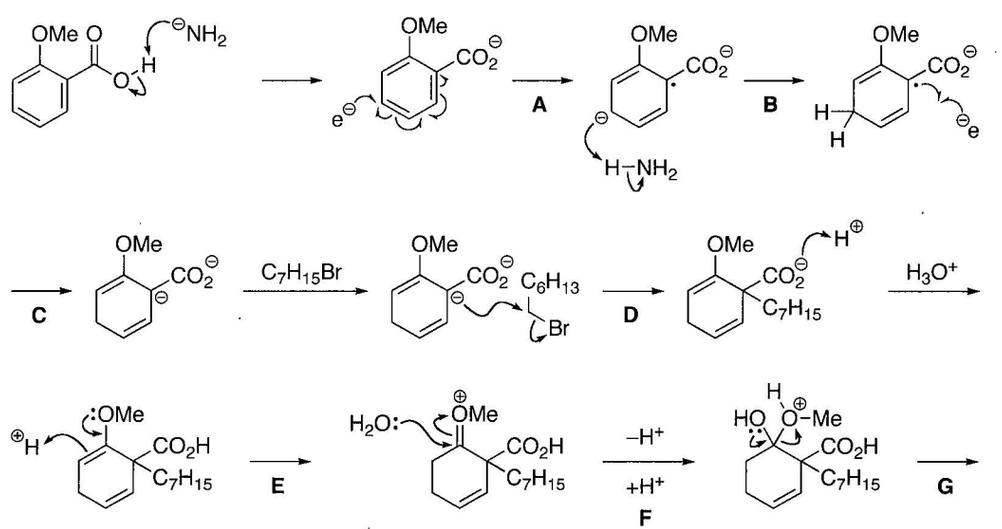
A038

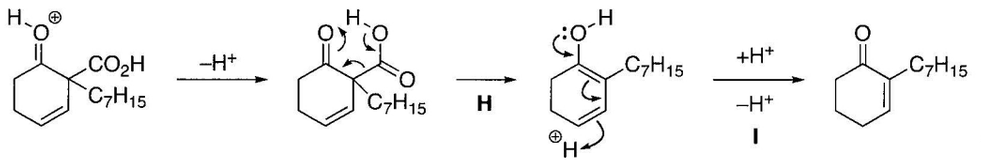


Paquette, L. A.; Barrett, J. H. *Org. Synth., Coll. Vol. V* **1973**, 467.

Birch reduction. **A**: Single electron transfer (SET) from Na to the aromatic ring to form a radical anion. **B**: Protonation. **C**: More substituted olefins are formed because alkyl groups destabilize a carbanion.

A039

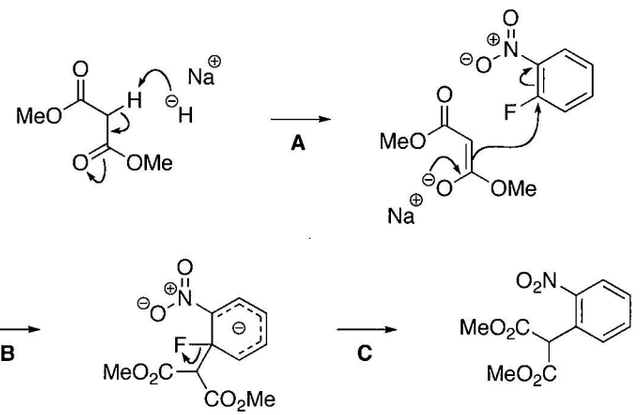




Taber, D. F.; Gunn, B. P.; Chiu, I.-C. *Org. Synth., Coll. Vol. VII* **1983**, 249.

Birch reduction. **A**: Single electron transfer (SET) to form a radical stabilized by the carboxylate. **B**: Protonation of the radical anion. **C**: SET to form a dianion species. **D**: Alkylation of the dianionic species. **E**: Protonation of the electron-rich enol ether. **F**: Addition of water followed by proton transfer. **G**: Elimination of MeOH. **H**: Decarboxylation through a six-membered transition state. **I**: Tautomerization.

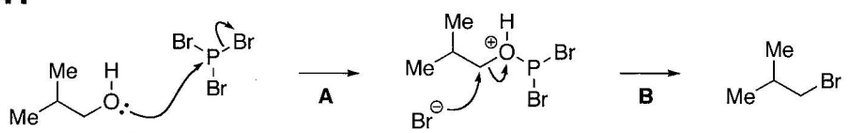
A040



Selvakumar, N.; Reddy, B. Y.; Azhagan, A. M.; Khera, M. K.; Babu, J. M.; Iqbal, J. *Tetrahedron Lett.* **2003**, *44*, 7065.

A: Deprotonation of the malonate to form an enolate (pKa $RO_2CCH_2CO_2R$ = 13, H_2 = 35). **B**: Nucleophilic addition of the enolate to the electron-deficient aromatic ring. **C**: Elimination of fluoride ion.

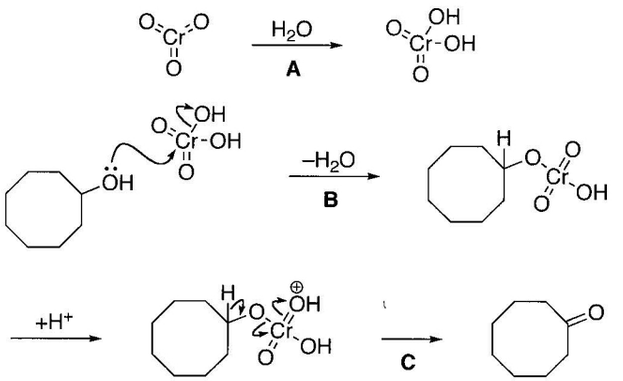
A041



Noller, C. R.; Dinsmore, R. *Org. Synth., Coll. Vol. II* **1943**, 358.

A: Attack of the alcohol to PBr_3. **B**: S_N2 reaction.

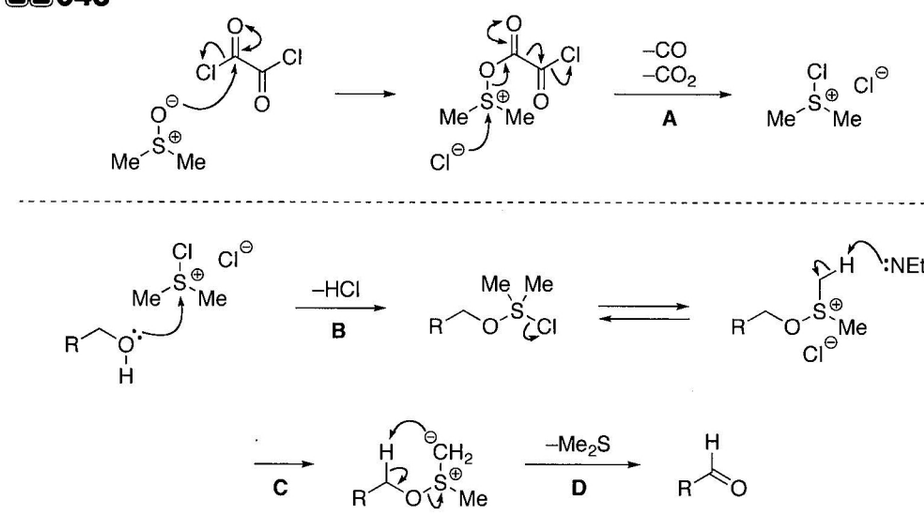
A042



Eisenbraun, E. J. *Org. Synth., Coll. Vol. V* **1973**, 310.

Jones oxidation. **A**: Hydration of CrO_3. **B**: Attack of the alcohol to H_2CrO_4. **C**: Elimination of H_2CrO_3.

A043



Leopold, E. J. *Org. Synth., Coll. Vol. VII* **1990**, 258.

Swern Oxidation. **A**: Attack of DMSO to $(COCl)_2$ to form a chlorosulfonium ion with generation of CO and CO_2. **B**: Attack of an alcohol to the chlorosulfonium ion. **C**: Formation of a sulfur ylide. **D**: β-Elimination of Me_2S.