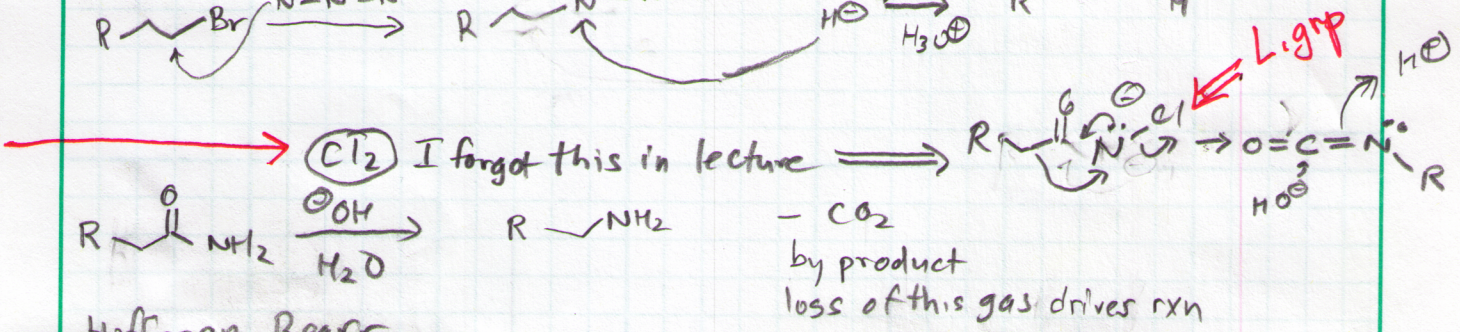
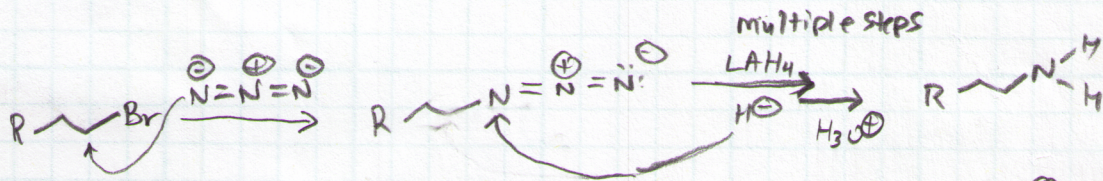
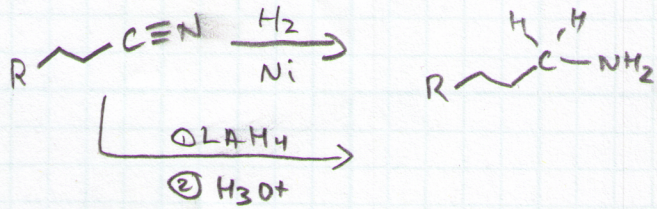
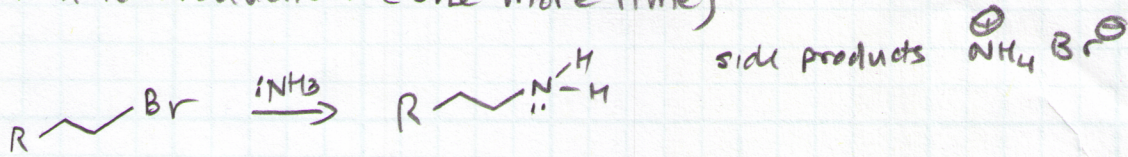
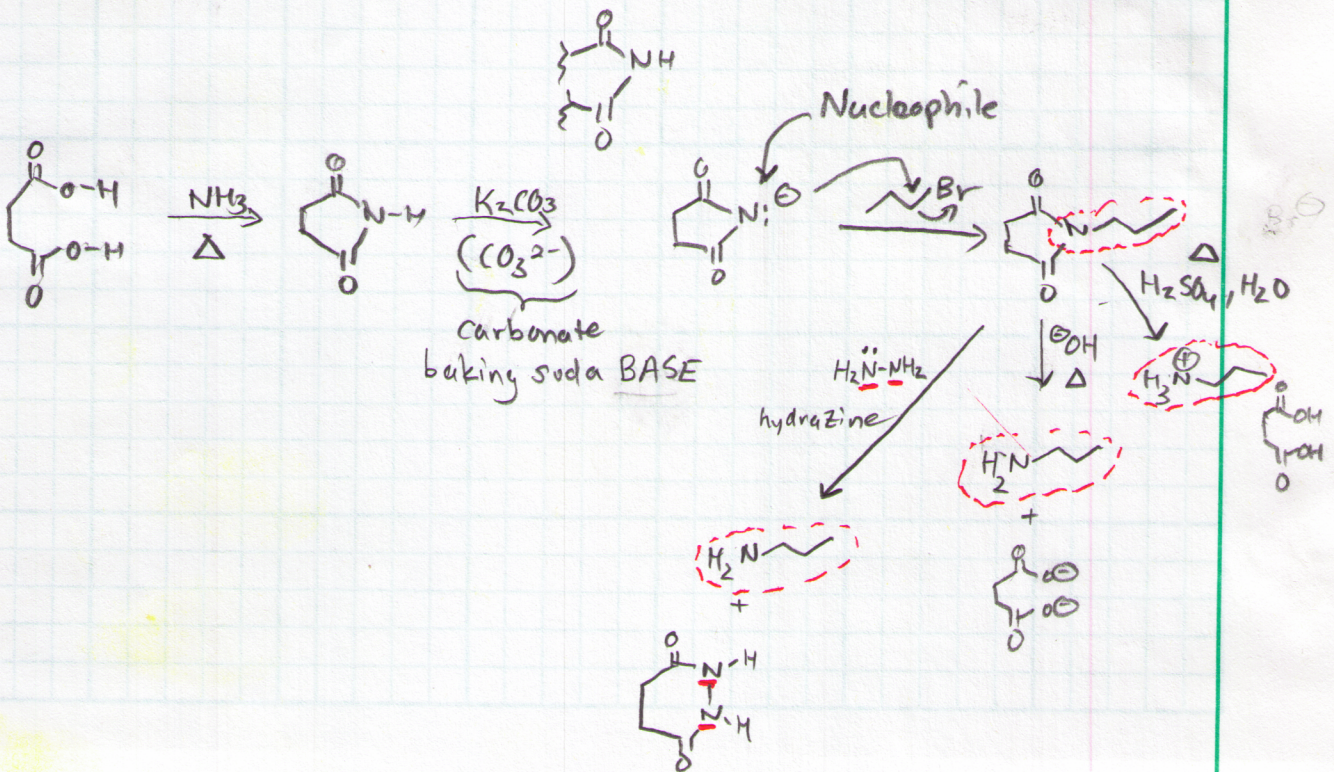


Amine Production (one more time)

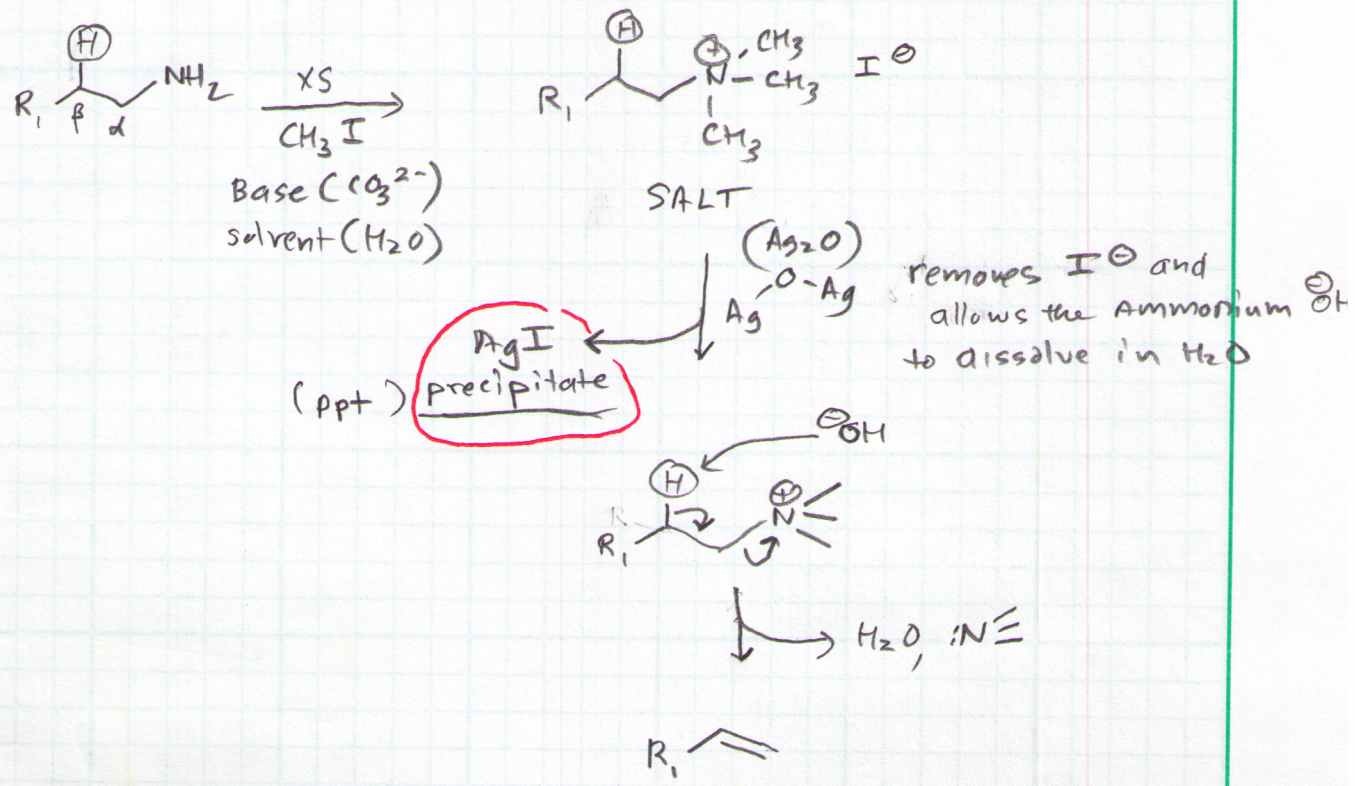


Gabriel Synthesis

Convert Succinic Acid to Succinimide



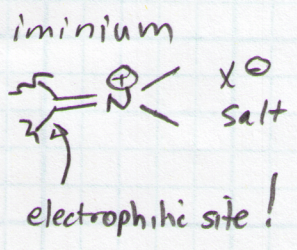
Alkyl Quaternary Ammonium (N^+) Salts contain a good Leaving Grp.



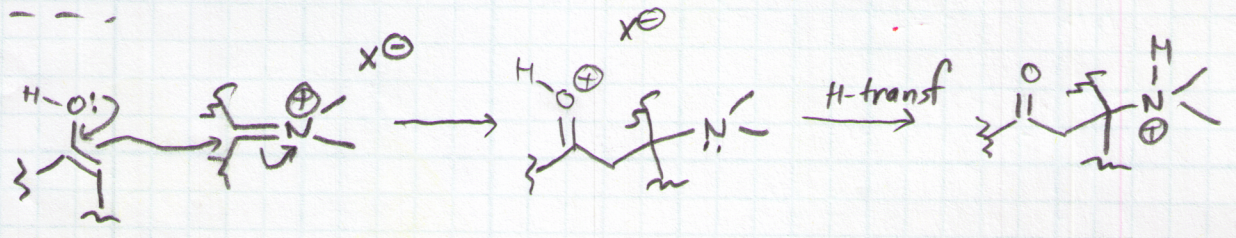
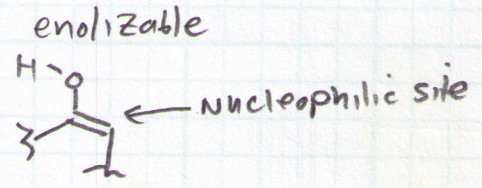
so, you see these $\{NR_3^+\}$ salts are an excellent method to access alkenes via an E_2 process

Mannich Rxn

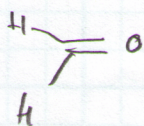
Substrate (A)



Substrate (B)

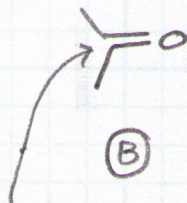


Which rxns faster with $\text{:N(CH}_3\text{)}_2\text{H}$?



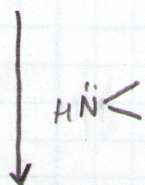
(A)

OR

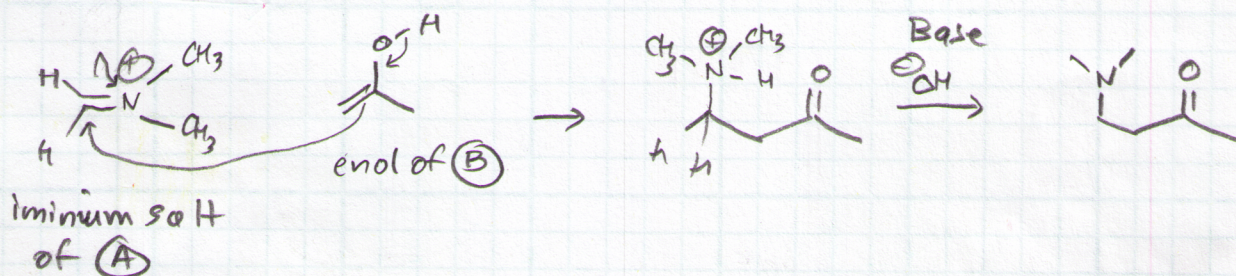


(B)

Smaller δ^+ charge \therefore less rxn than (A)



preferentially (A) formaldehyde is preferred for Mannich Rxn because it forms iminium salt.



Draw the iminium salt and enol that would form before the Mannich condensation happened

