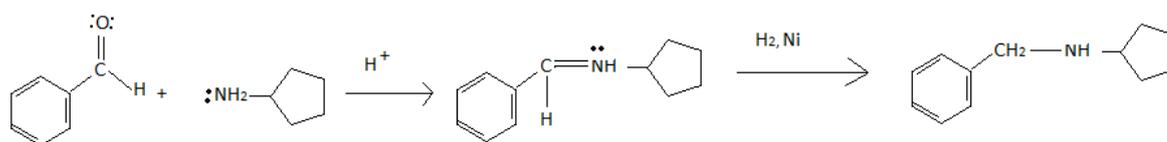


Answer on Question #83023, Chemistry/Organic Chemistry

Which is the major product of the reaction of cyclopentylamine and benzaldehyde followed by nickel and hydrogen? And how do you describe the mechanism?

Answer

Reaction

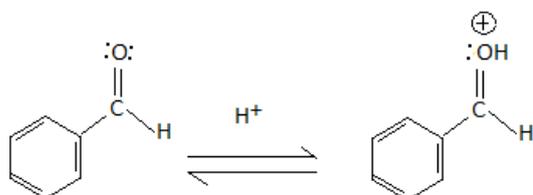


Benzaldehyde

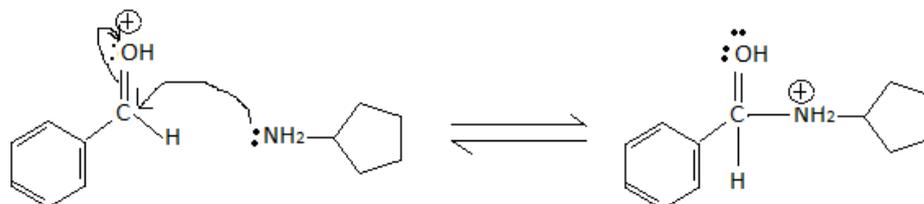
cyclopentylamine

benzylcyclopentylamine

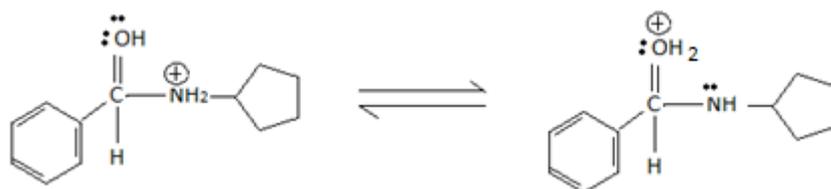
Step 1 Protonation of the carbonyl oxygen



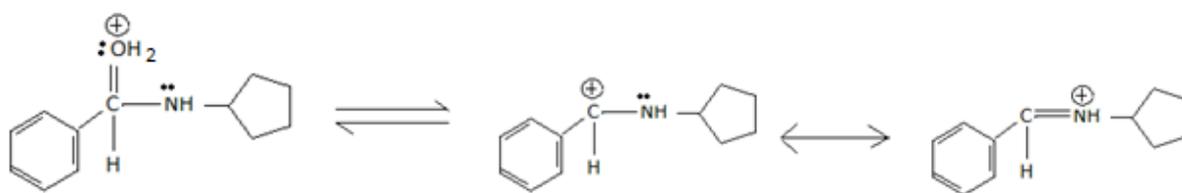
Step 2 Nucleophilic attack on the carbonyl carbon by cyclopentylamine



Step 3 Proton transfer from the nitrogen to the oxygen atom



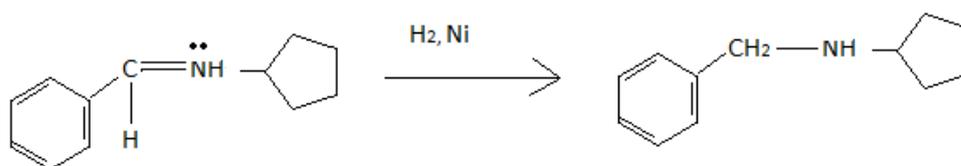
Step 4 Elimination of water, generation of the resonance stabilized cation



Step 5 Loss of proton, formation of imine



Step 6 Reductive amination



Answer provided by www.AssignmentExpert.com