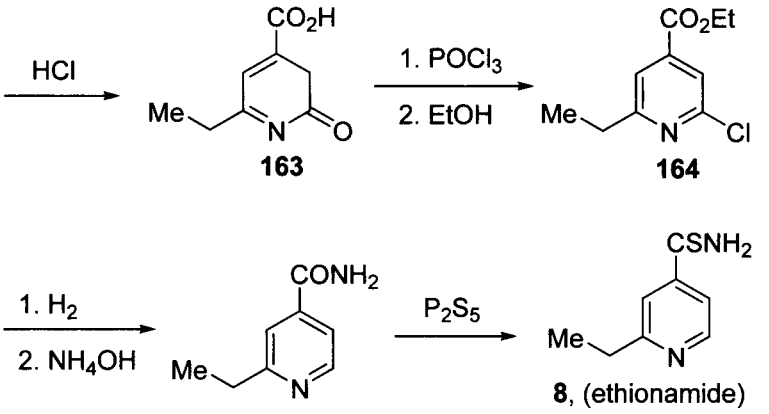
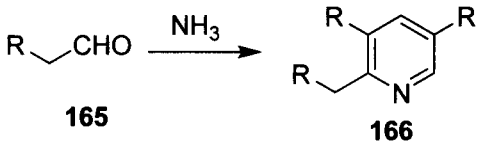


Chichibabin (Tschitschibabin) pyridine synthesis[113]

The classic Chichibabin reaction was carried out by passing vapors of aliphatic aldehyde **165** and ammonia over alumina at 300–400 °C to produce the corresponding 2,3,5-trisubstituted pyridine **166**. Ammonia serves as not only a base to catalyze an aldol reaction between two molecules of **165** but also as the source of nitrogen for the resultant pyridyl ring through the formation of an enamine with a third molecule of **165**.[114] AcOH/NH_4OAc was used to replace ammonia as the solvent/nitrogen source to improve the yield of this reaction dramatically and make the reaction easy to handle.[115]



165 **166**

Snider reported synthesis of ficuseptine (**169**) and juliprosine (**172**) containing 2,3-dihydro-1*H*-indolizinium alkaloids *via* biomimetic intramolecular Chihibabin pyridine synthesis.[116] Two molecules of aldehyde **167** and one molecule of 4-aminobutanal dimethyl acetal **168** in acetic acid at 95 °C gave **169** in 52% yield. Meanwhile, two molecules of aldehyde **170** and one molecule of 1-pyrroline **171** in acetic acid at room temperature gave **172** in 72% yield.