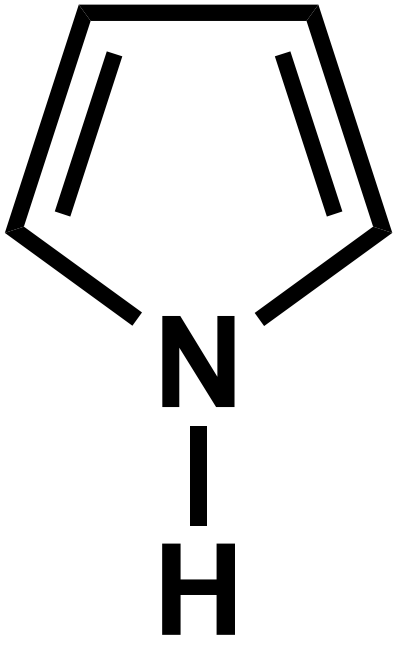
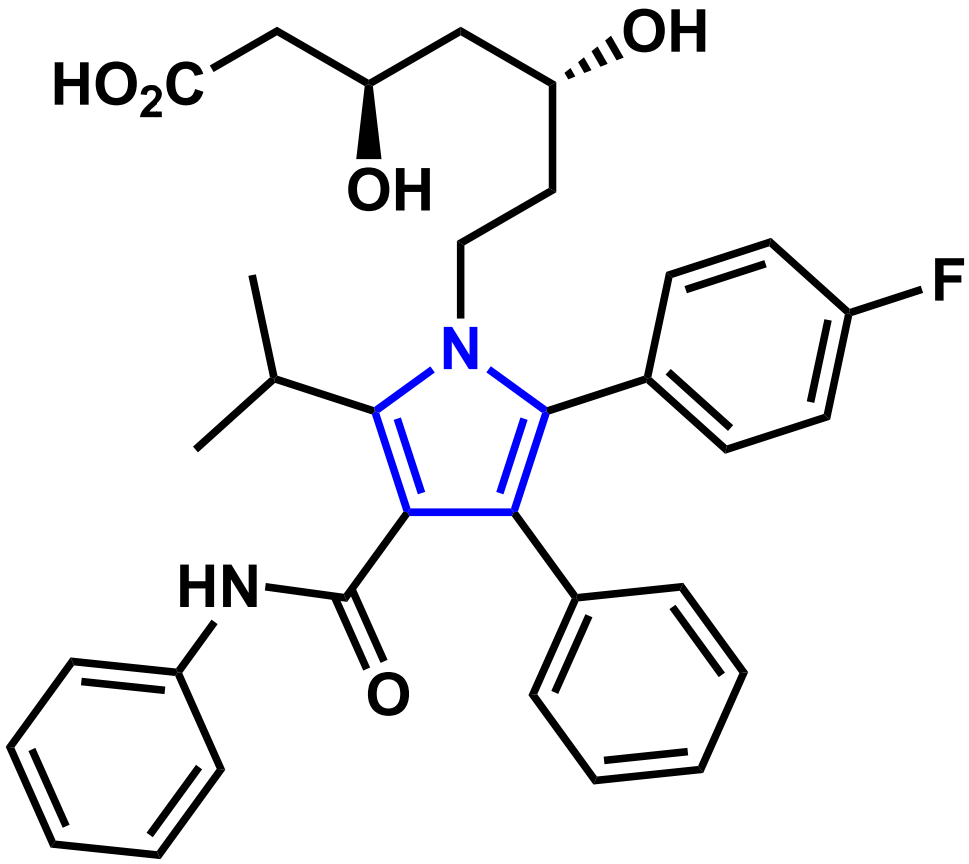
ピロール



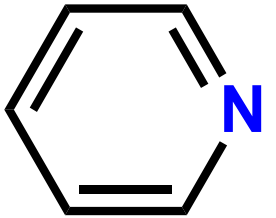


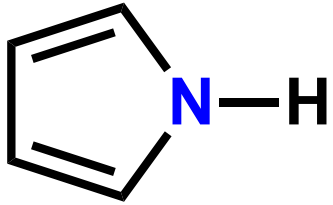
atorvastatin

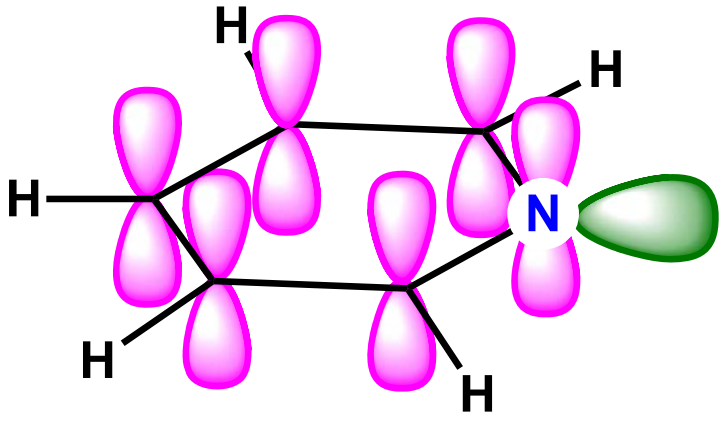
ピリジン　vs. ピロール

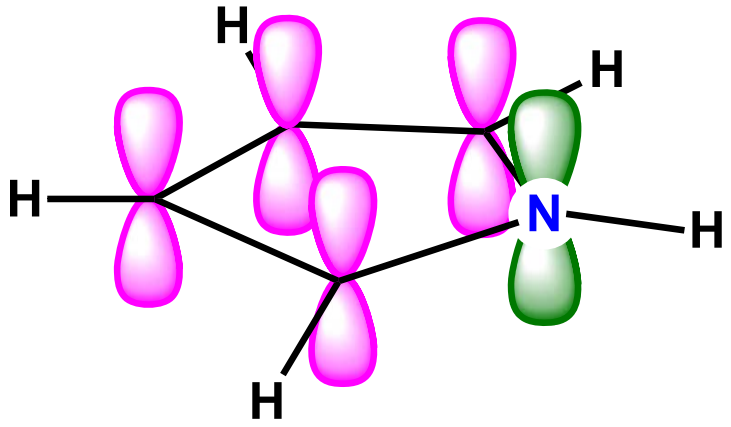
芳香族

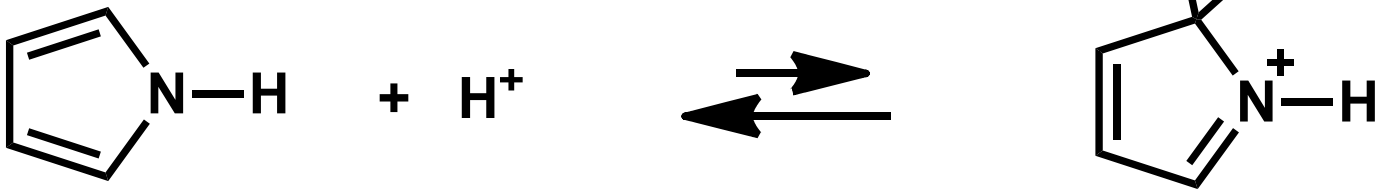
6 π 電子





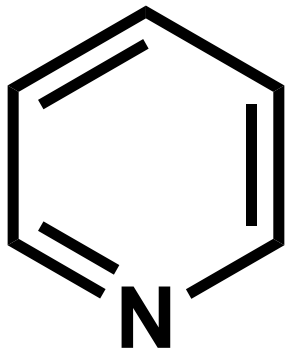


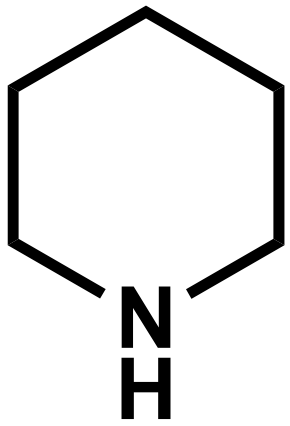


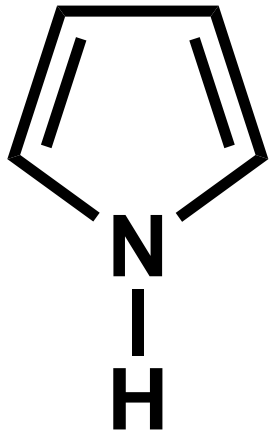


pK_a = –4.4

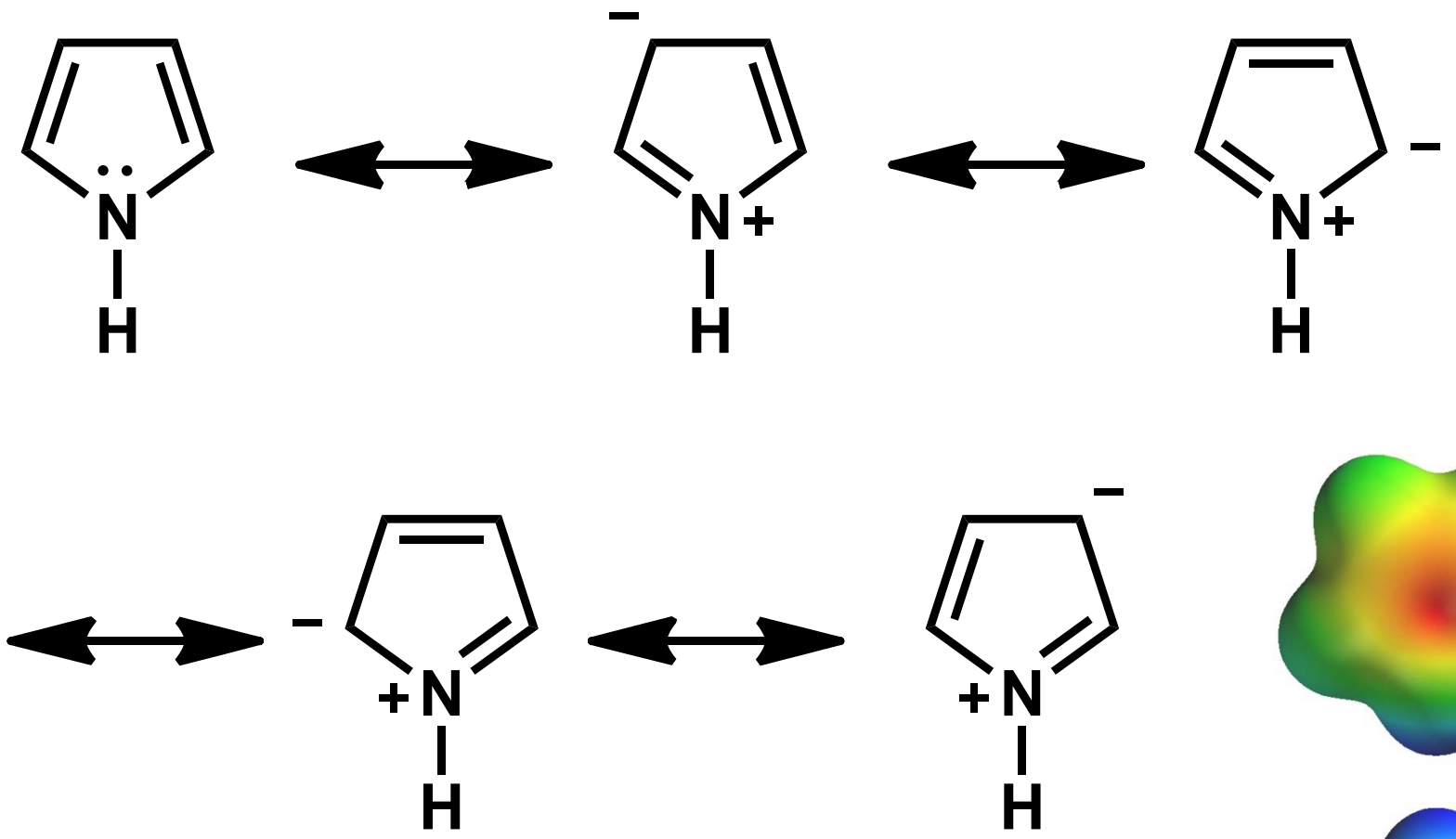
次の化合物を塩基性の強い順に並べ、その理由を答えよ。

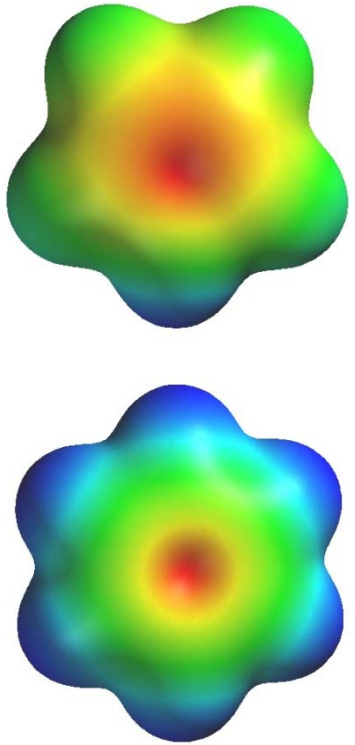




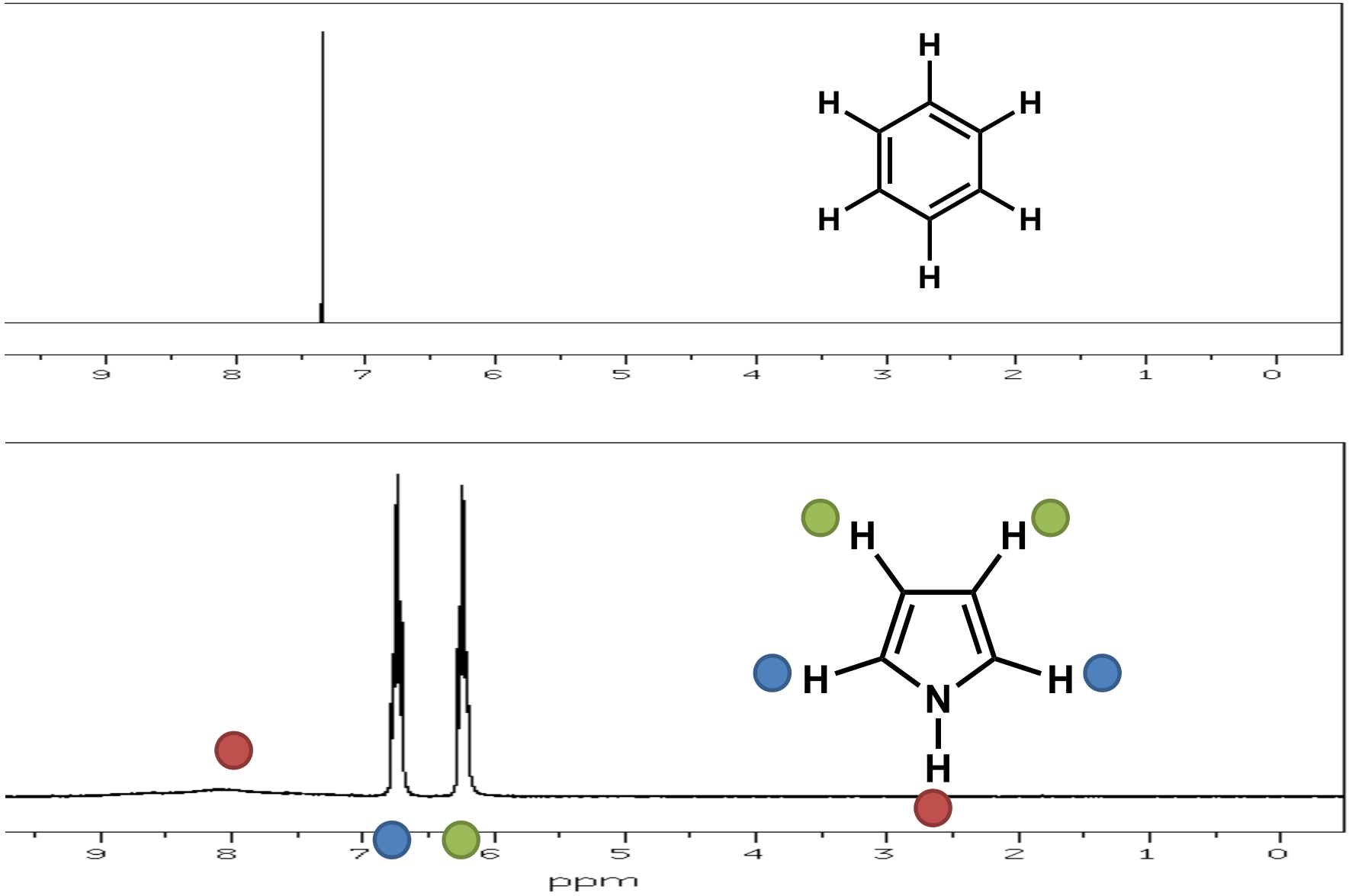


ピロールの共鳴構造

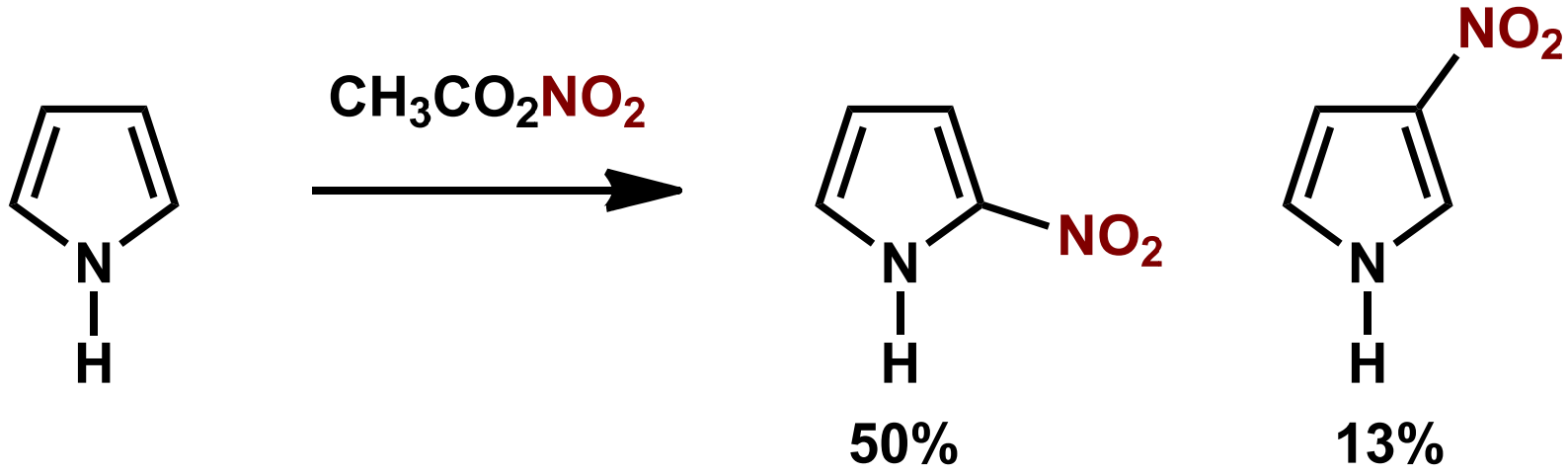


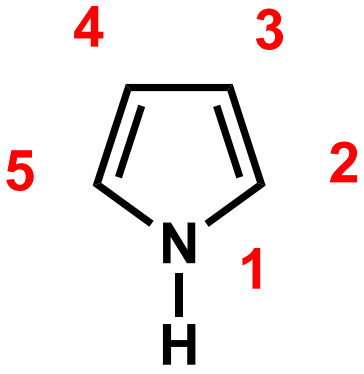


^{1}H NMR



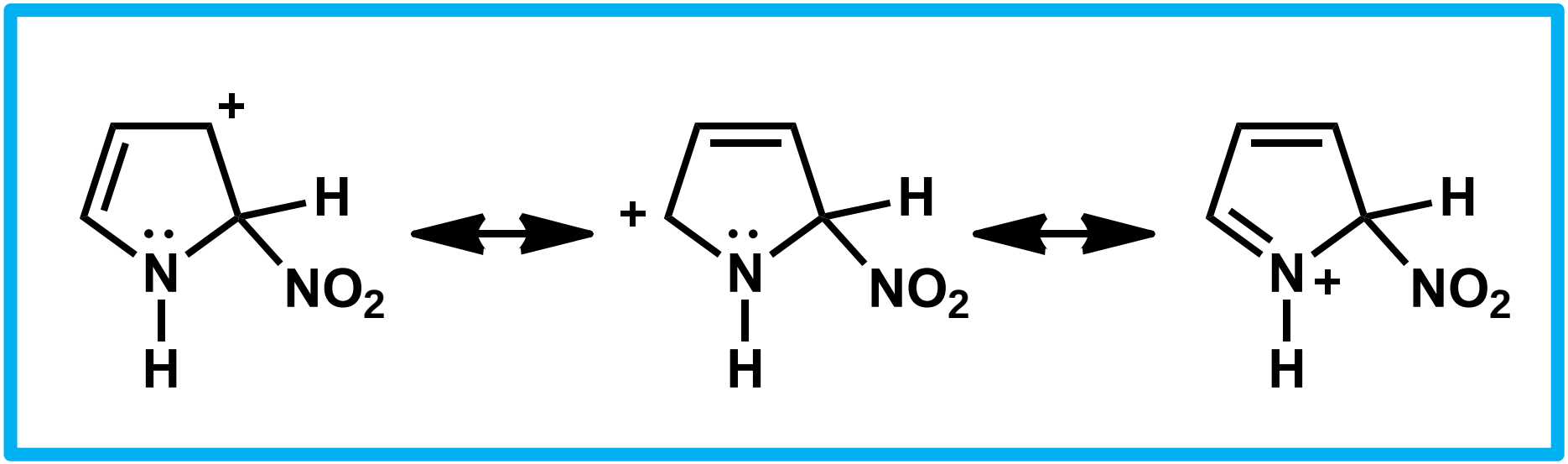
芳香族求電子置換反応

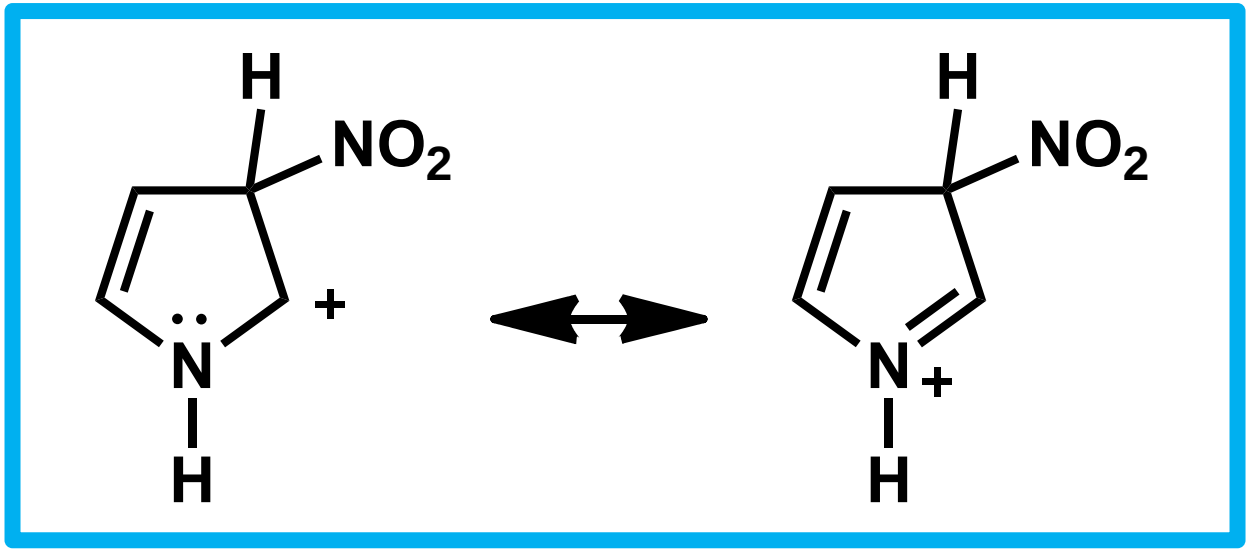




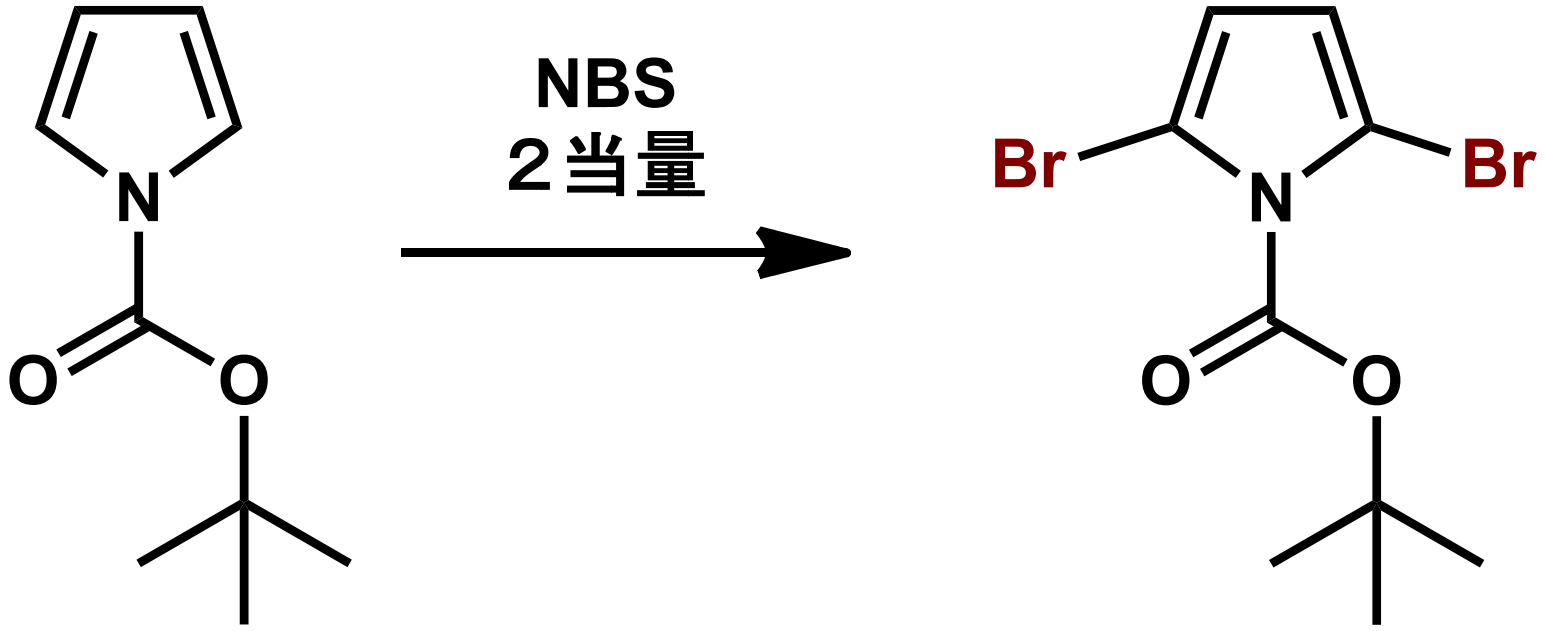
ピロールの反応は
2位 で優先的に起こる。

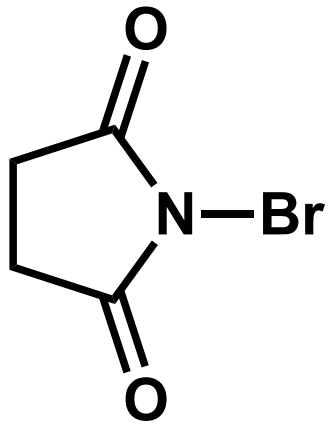
中間体の共鳴構造





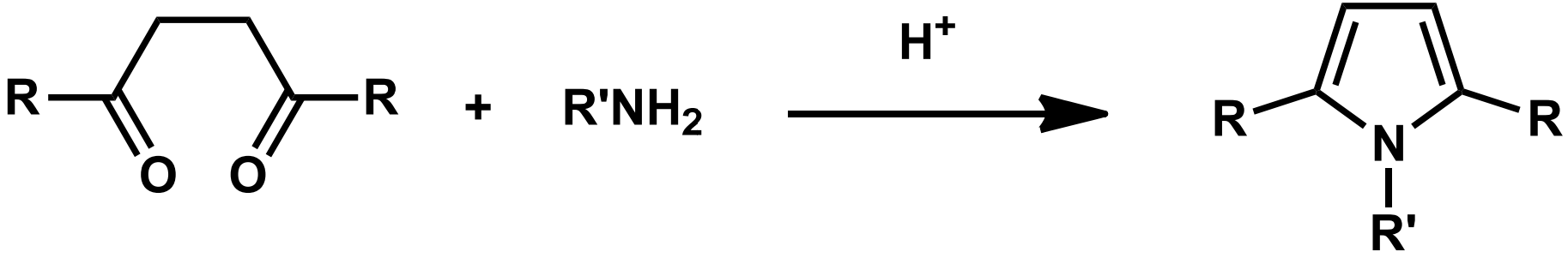
主生成物は何か？

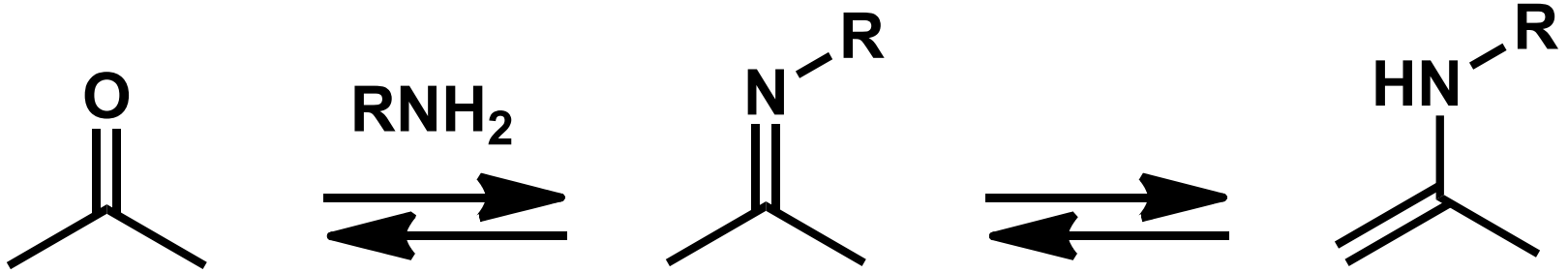


NBS = 

Br^+供給源として機能する。

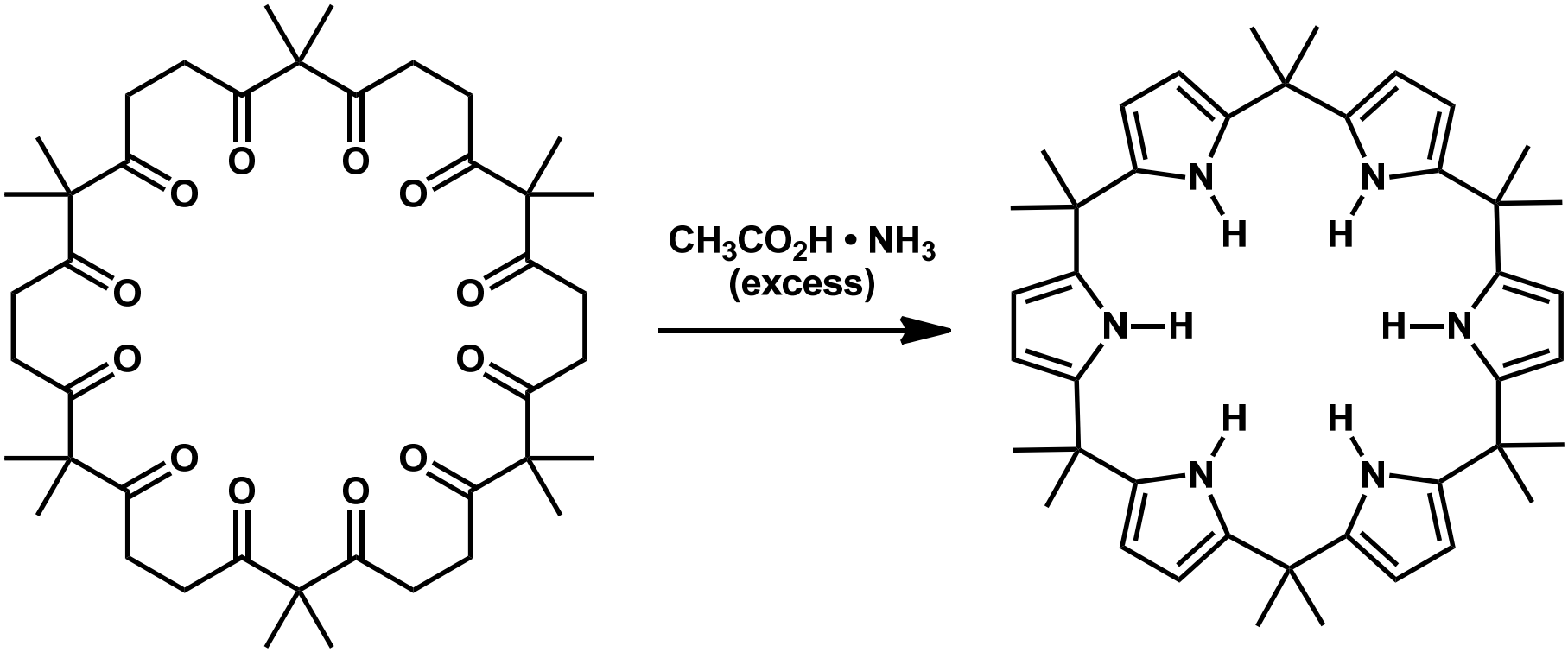
Paal－Knorr合成法

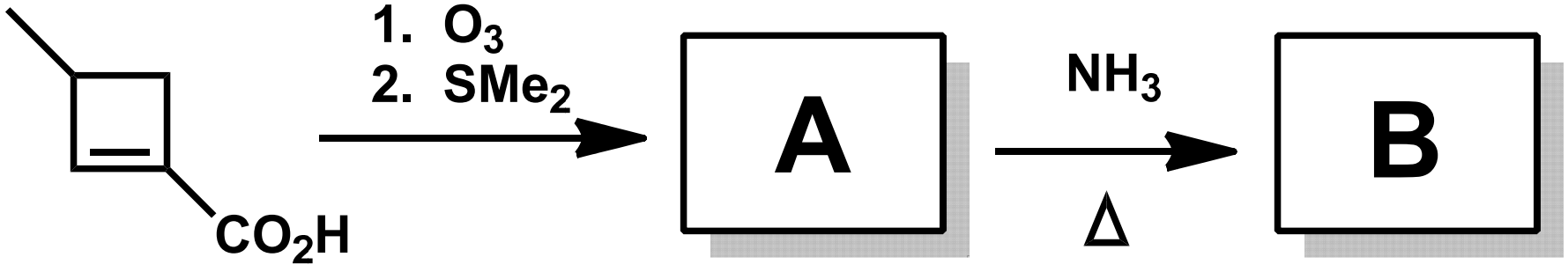


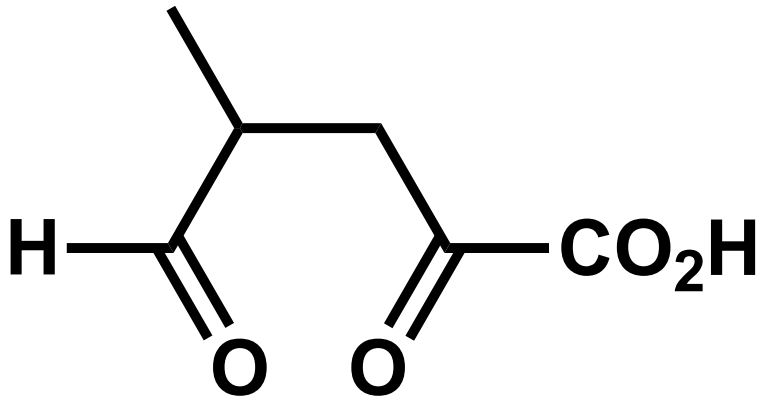


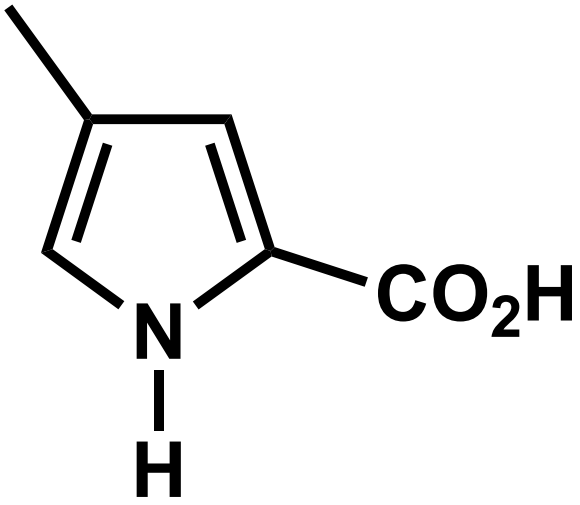
ケトン　　イミン　　エナミン

Paal－Knorr合成法の応用例




1. O_3
2. SMe_2
CO_2H
A
NH_3
Δ
B


H
O
O
CO_2H


N
H
CO_2H