

**B.Sc. Semester-IV
Core Course-IX (CC-IX)
Organic Chemistry-III**



III. Heterocyclic Compounds

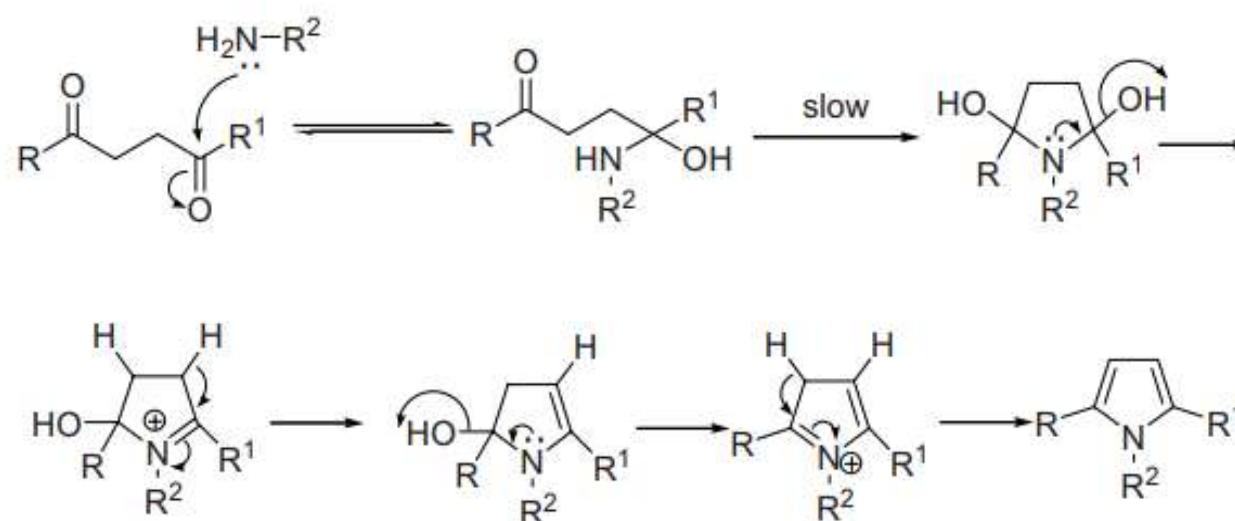
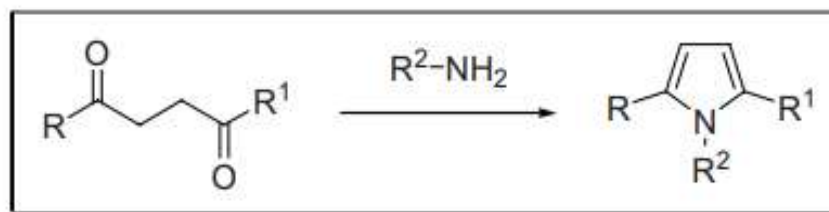
3. Paal-Knorr Pyrrole Synthesis



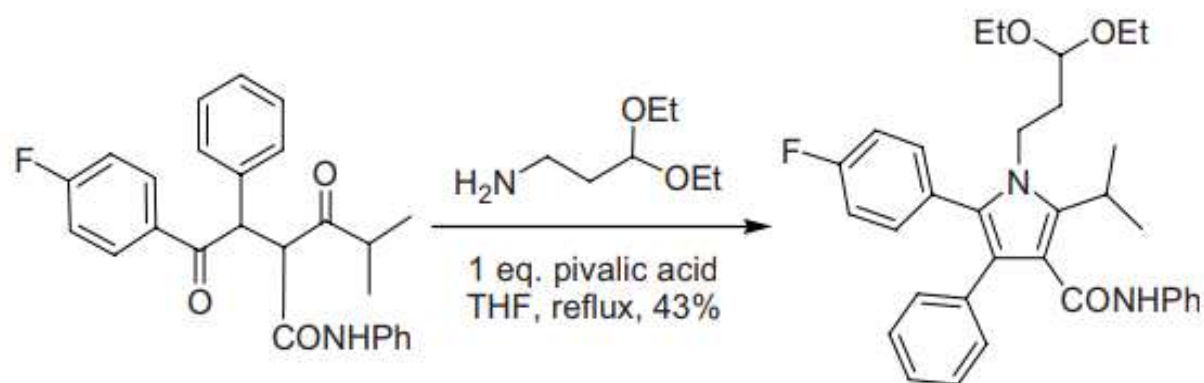
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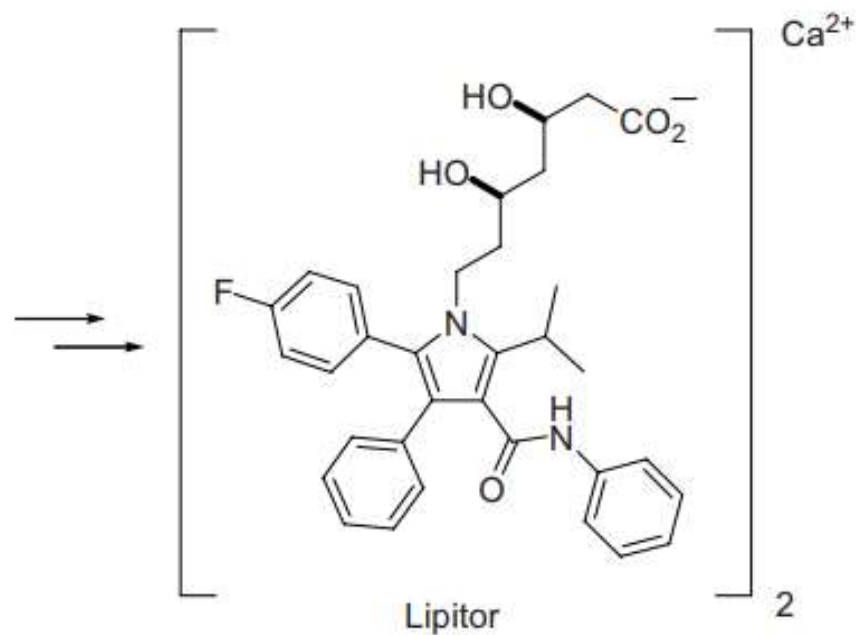
Paal-Knorr pyrrole synthesis

Reaction between 1,4-diketones and primary amines (or ammonia) to give pyrroles. A variation of the Knorr pyrazole synthesis (page 317).

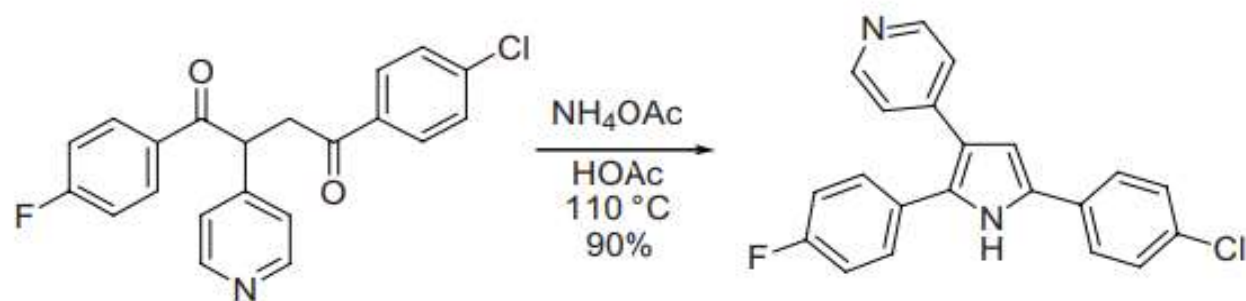


Example 1⁴

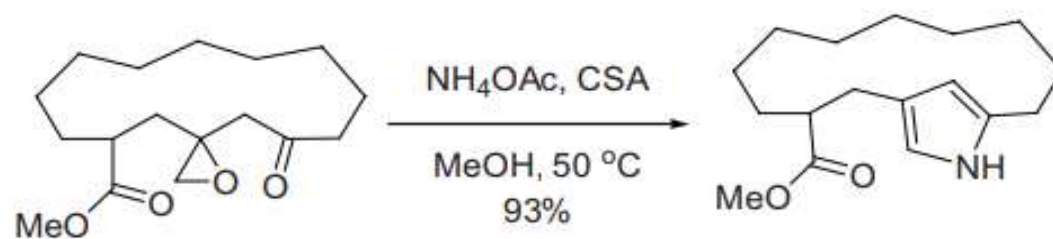




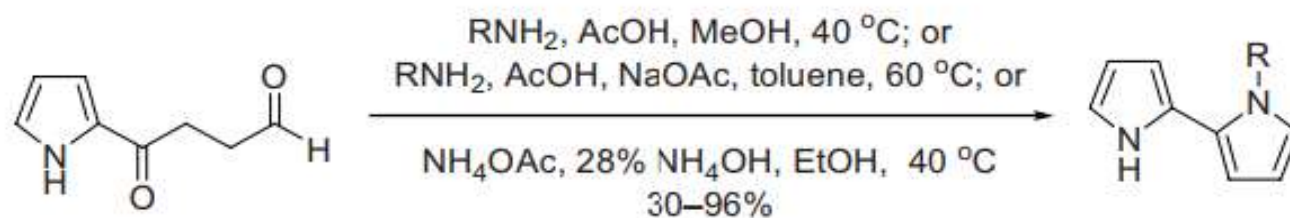
Example 2⁵



Example 3⁹



Example 4¹⁰



References

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