

Fonction et réaction organiques II

Fall Semester 2025

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Assistants:

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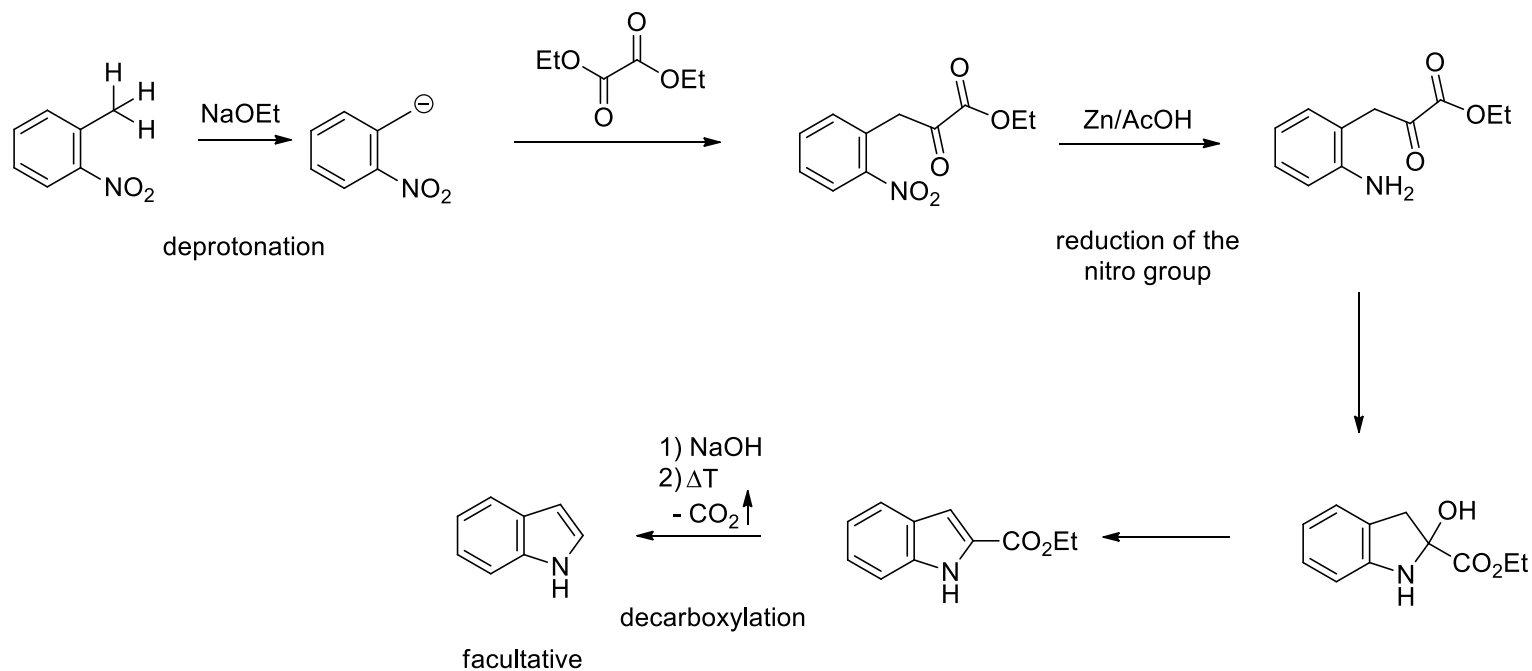
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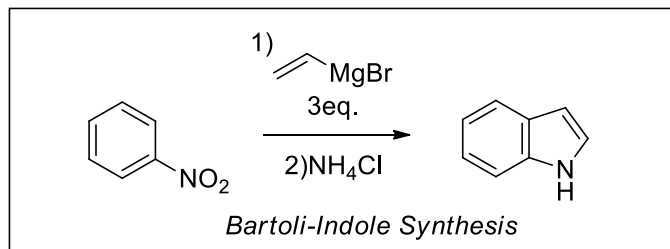
2.3.4. Indole syntheses

- Reissert synthesis:

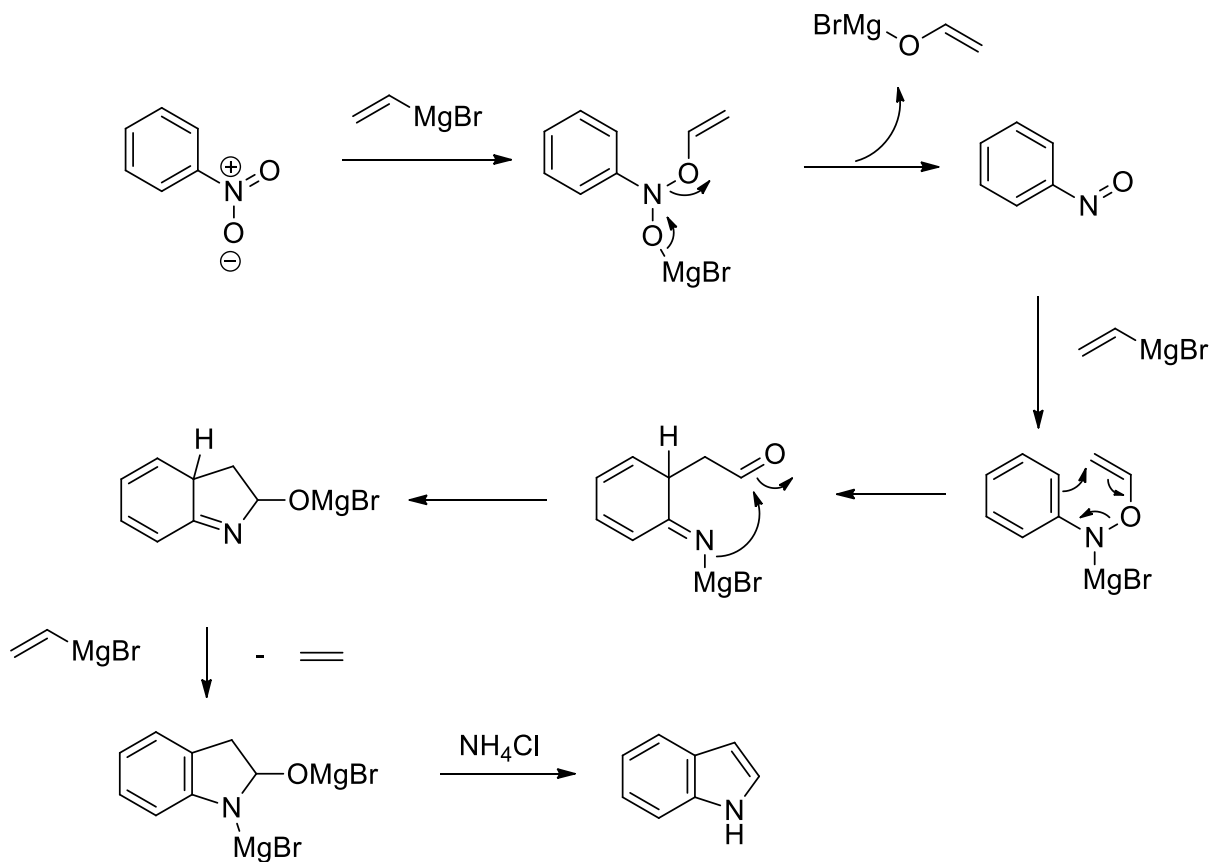


2.3.4. Indole syntheses

- Bartoli-Indole synthesis:

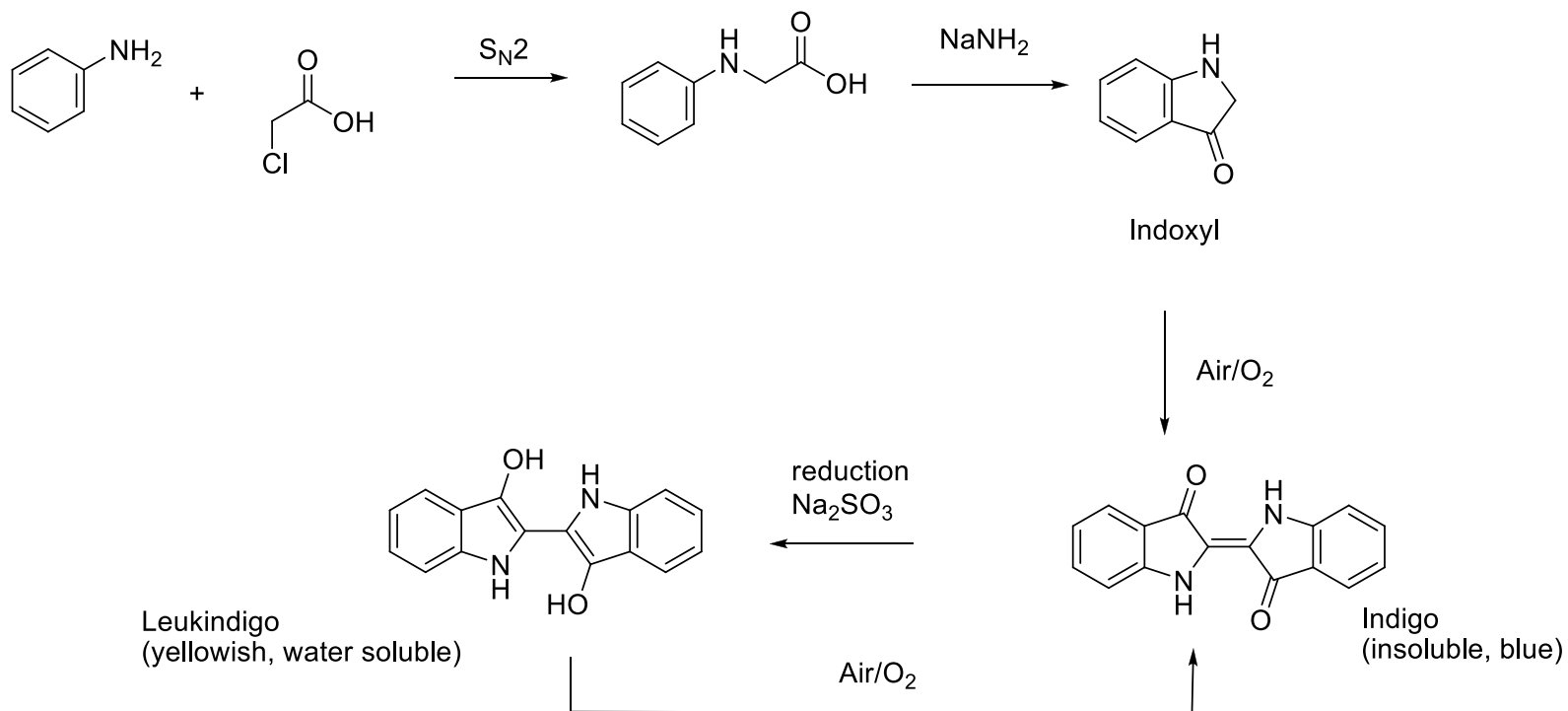


Mechanism:



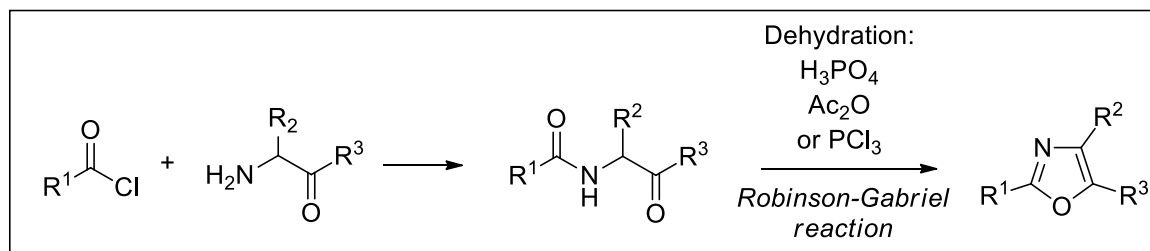
2.3.4. Indole syntheses

- Example: technical synthesis of Indigo (dye for blue jeans)

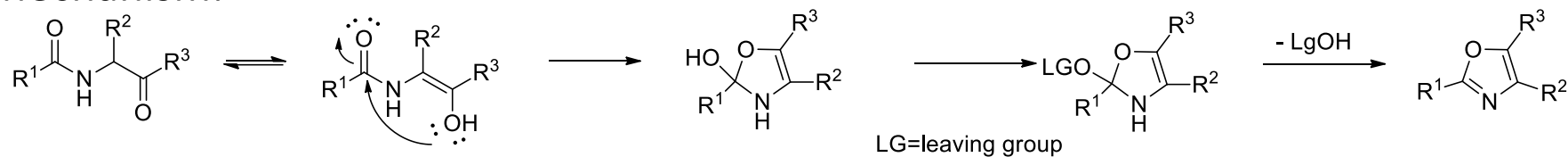


2.3.5. Oxazole syntheses

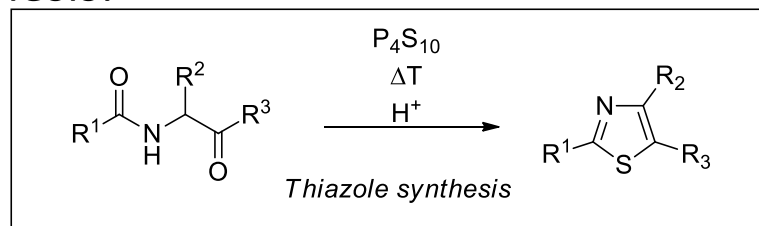
- Robinson-Gabriel reaction:



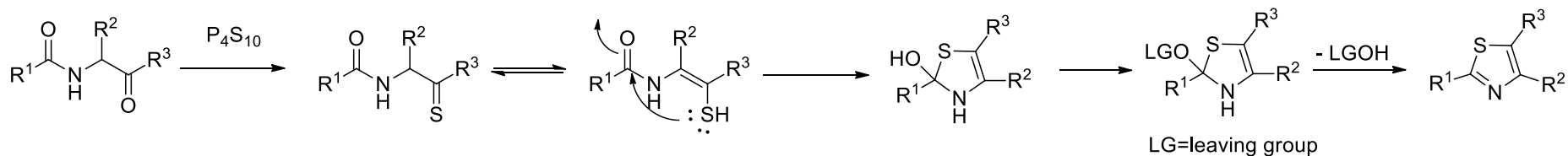
Mechanism:



- Analog for thiazole synthesis:

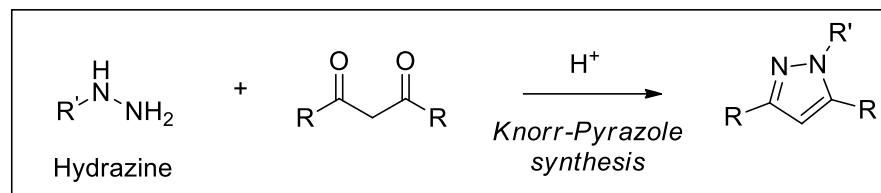


Mechanism:

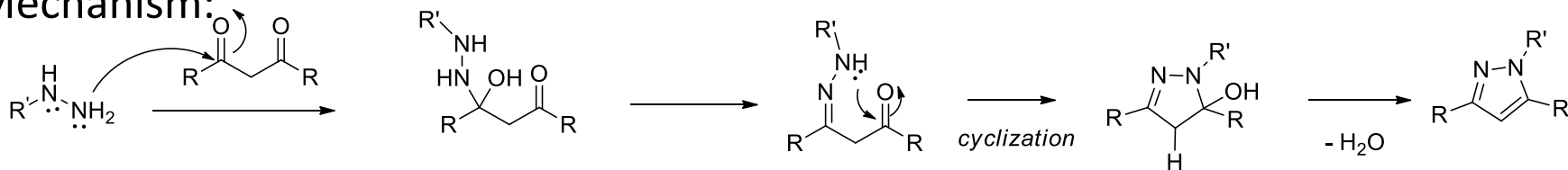


2.3.6. Pyrazole and Isoxazole syntheses

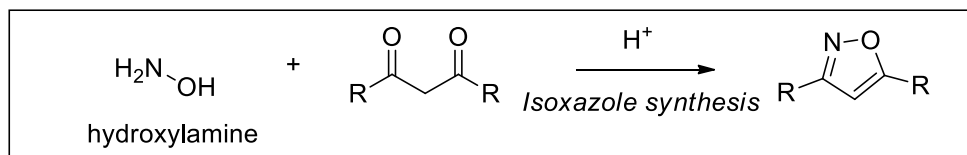
- Knorr-Pyrazole synthesis:



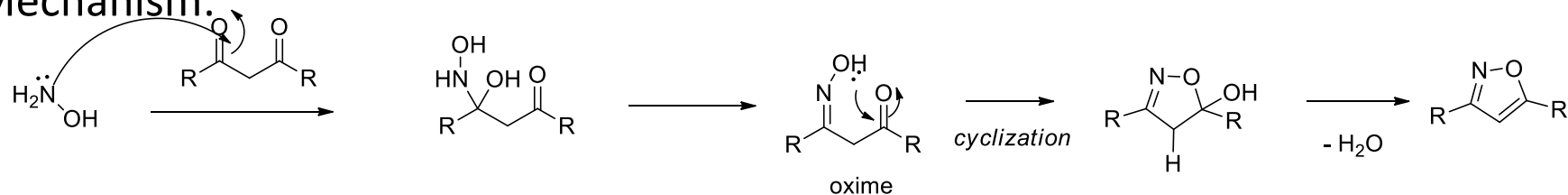
Mechanism:



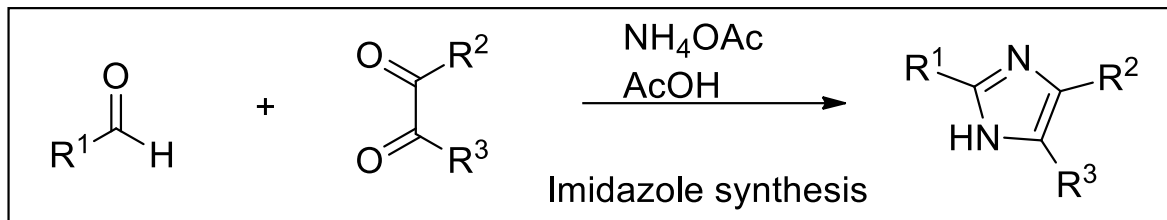
- Similar for isoxazole synthesis:



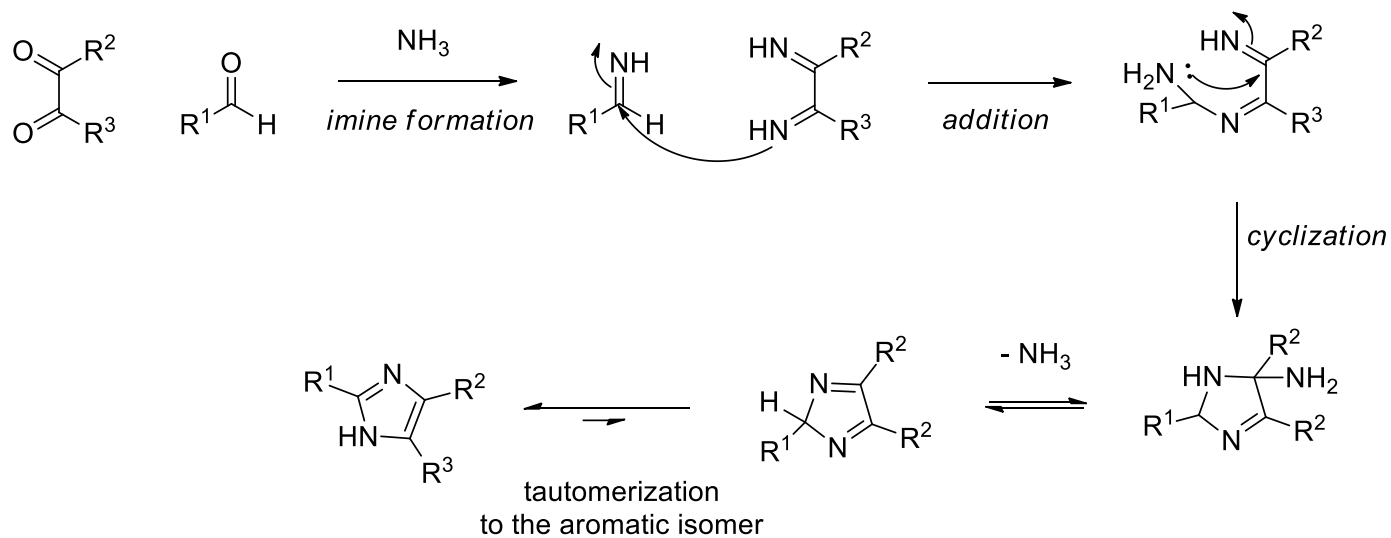
Mechanism:



2.3.7. Imidazole syntheses



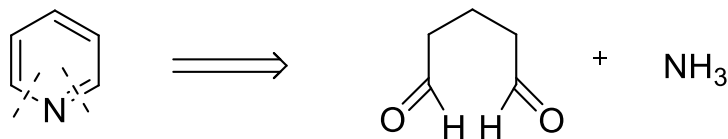
Mechanism:



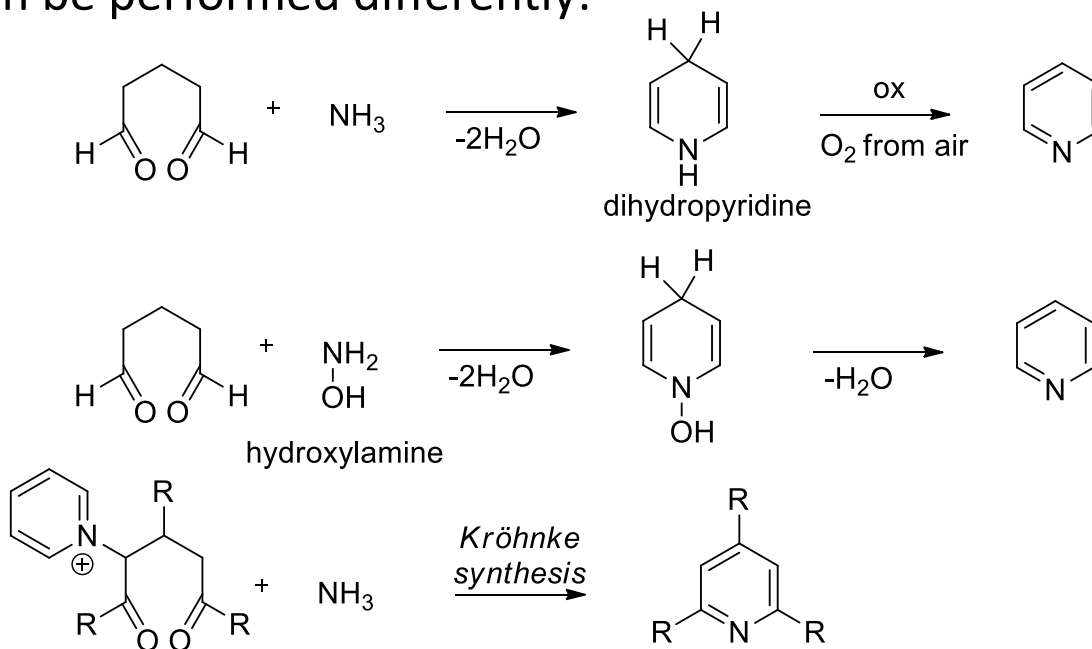
2.4.1. Pyridine syntheses

- Retrosynthesis:

Common strategy: cuts around the heteroatom



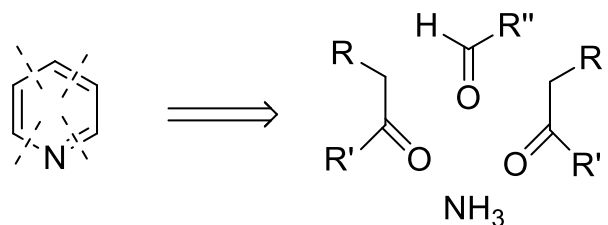
Reaction can be performed differently:



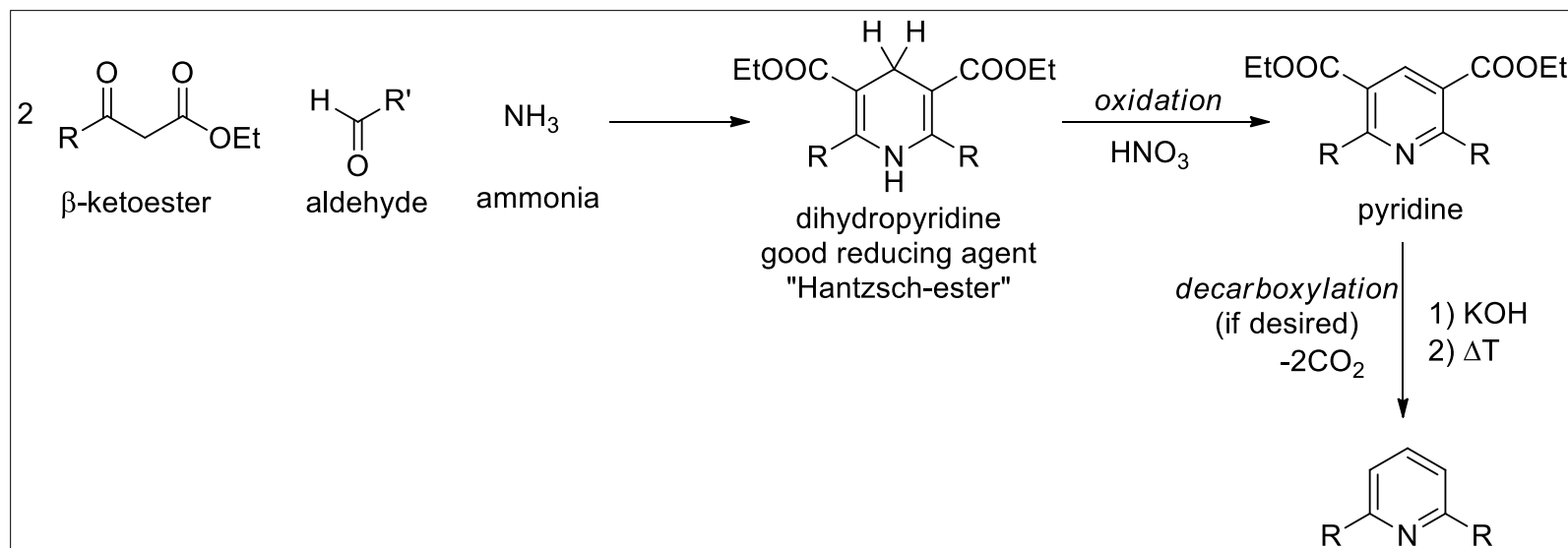
2.4.1. Pyridine syntheses

- Hantzsch (dihydro)pyridine synthesis:

- Strategic disconnections:

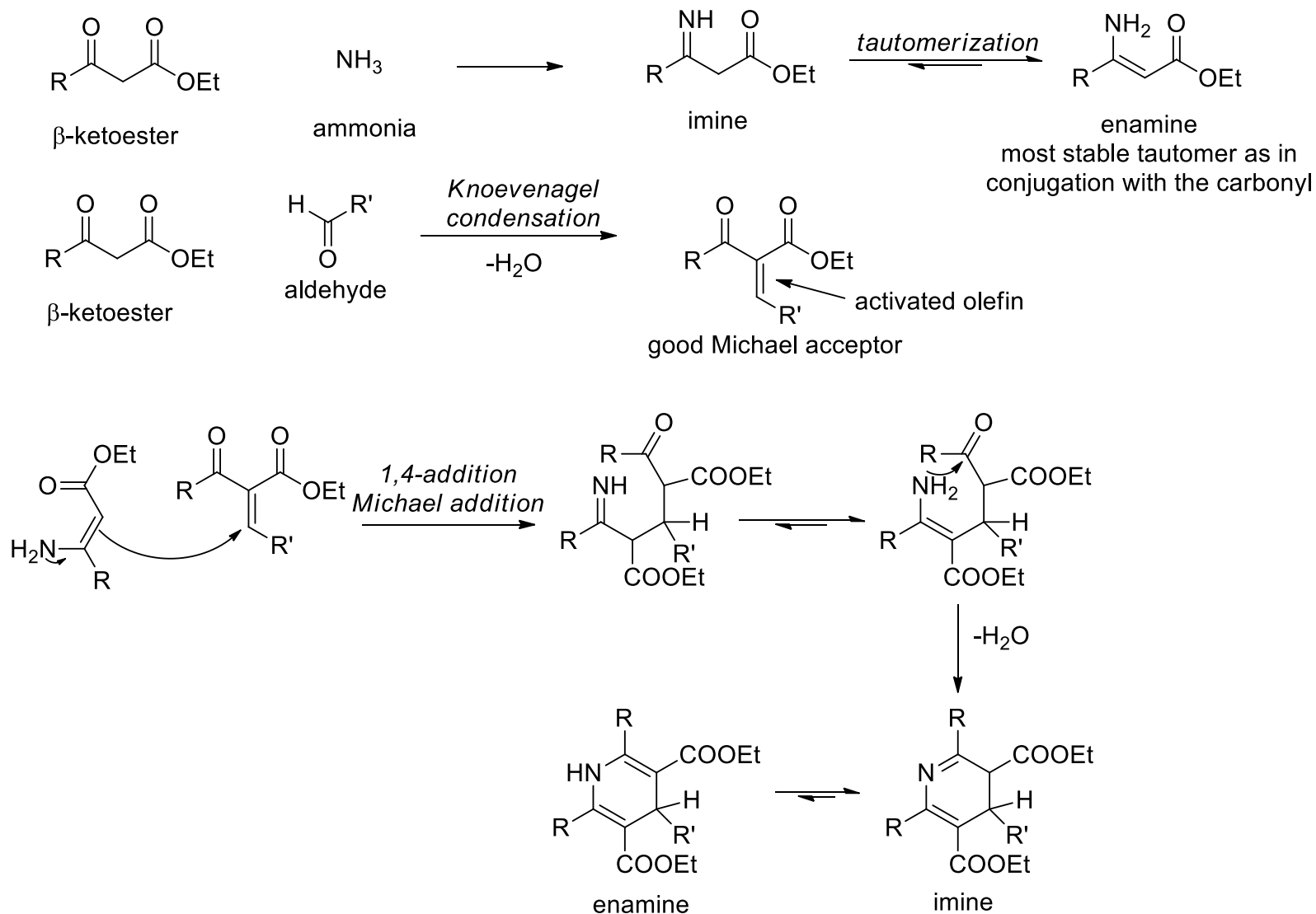


- Synthesis



2.4.1. Pyridine syntheses

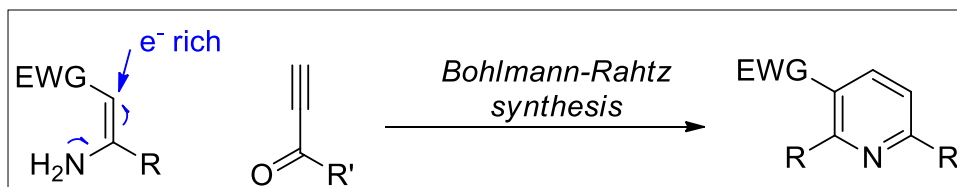
- Mechanism:



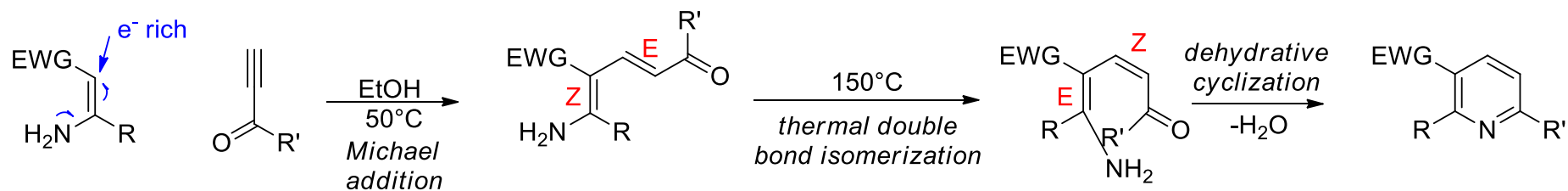
2.4.1. Pyridine syntheses

- Bohlmann-Rahtz pyridine synthesis:

- Synthesis:

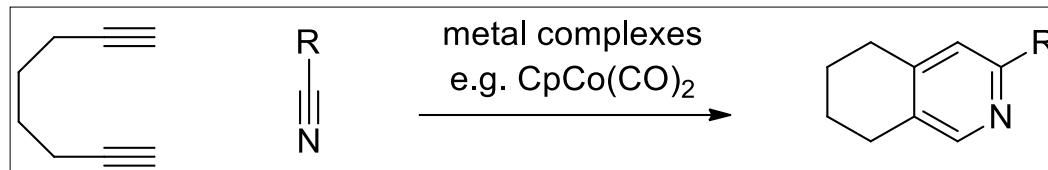


- Mechanism:

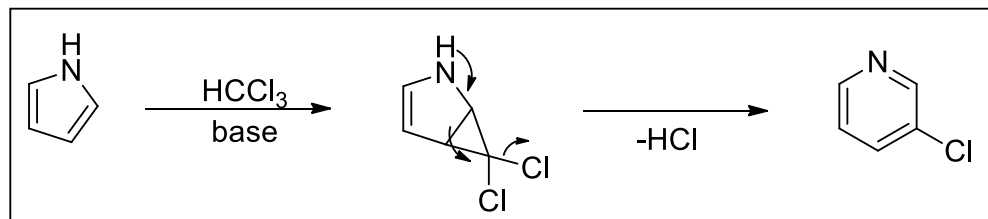


2.4.1. Pyridine syntheses

- [2+2+2] cyclootrimerization for pyridine synthesis



- The Ciamician Dennstedt reaction: pyridines by ring enlargement of a pyrrole



proceeds via a carbene intermediate

