

# Fonction et réaction organiques II

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BCH 4305

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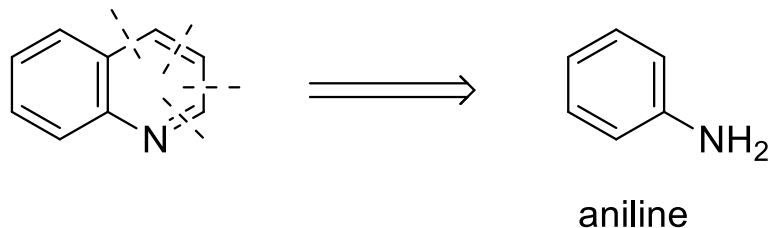
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## 2.4.2. Quinoline syntheses

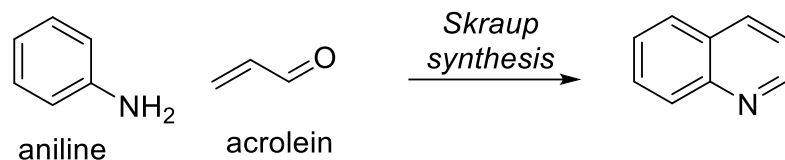
- General strategies:



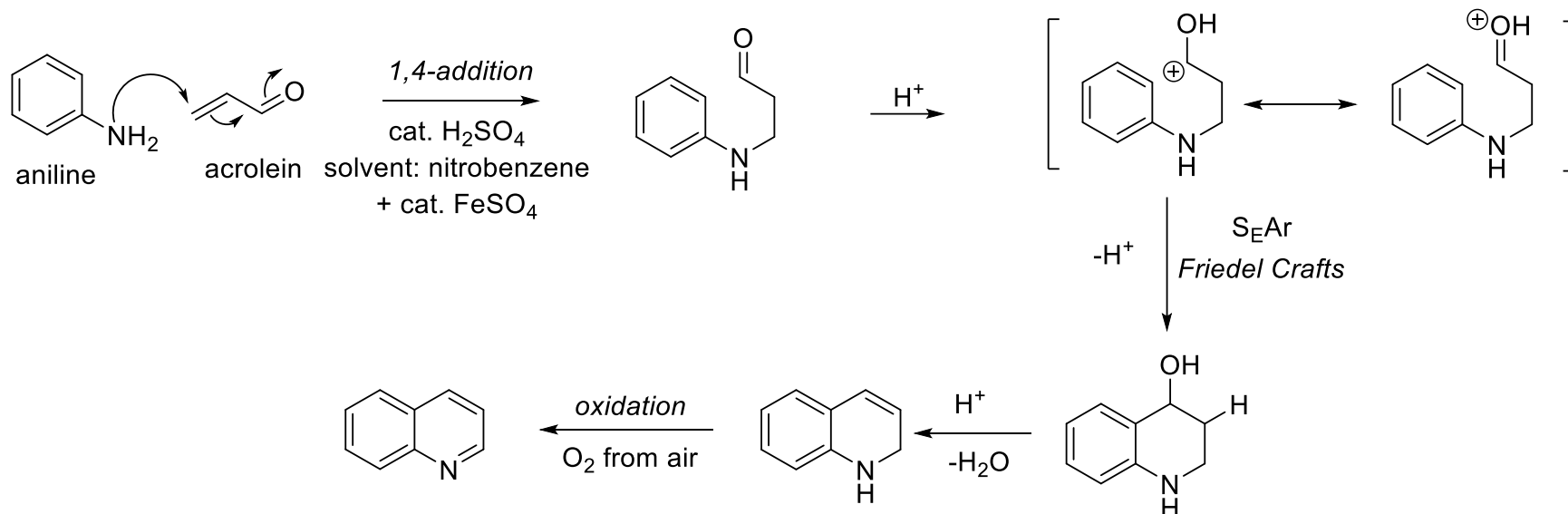
- The ring containing the heteroatom is the one which is constructed
- There are several possibilities to perform it always starting with an aniline

## 2.4.2. Quinoline syntheses

- Skraup quinoline synthesis:

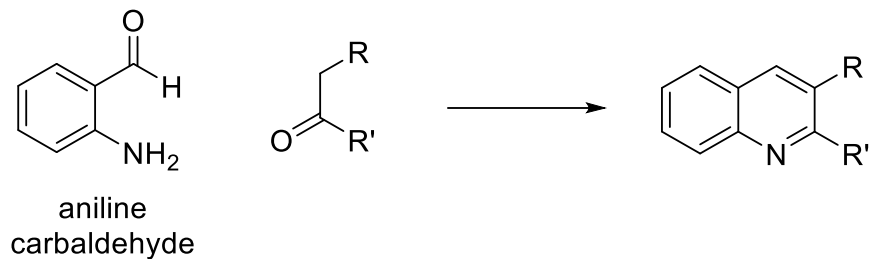


- Mechanism



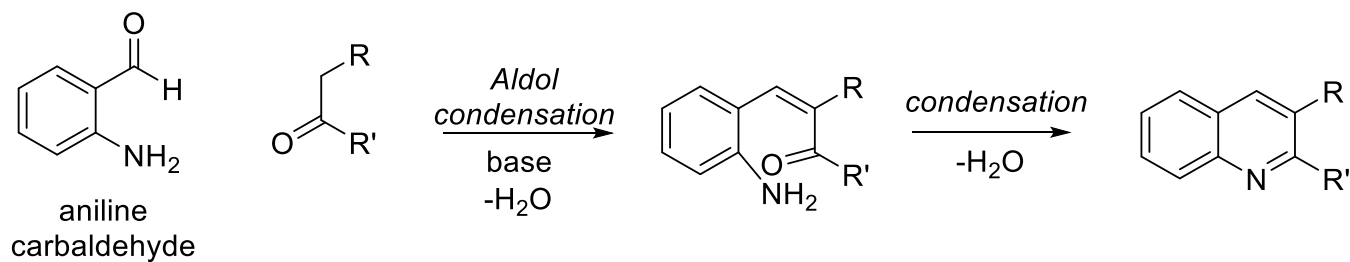
## 2.4.2. Quinoline syntheses

- Friedländer quinoline synthesis



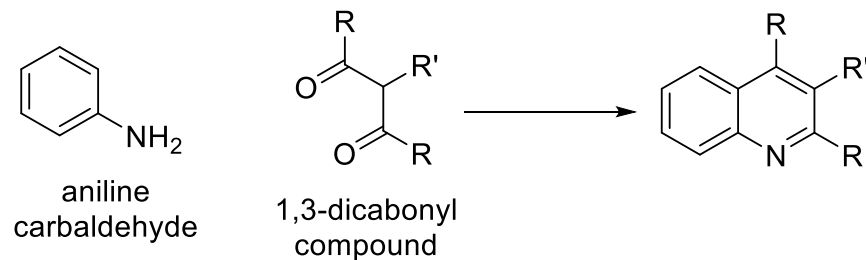
- Advantage: flexibility in the substitution pattern

- Mechanism:

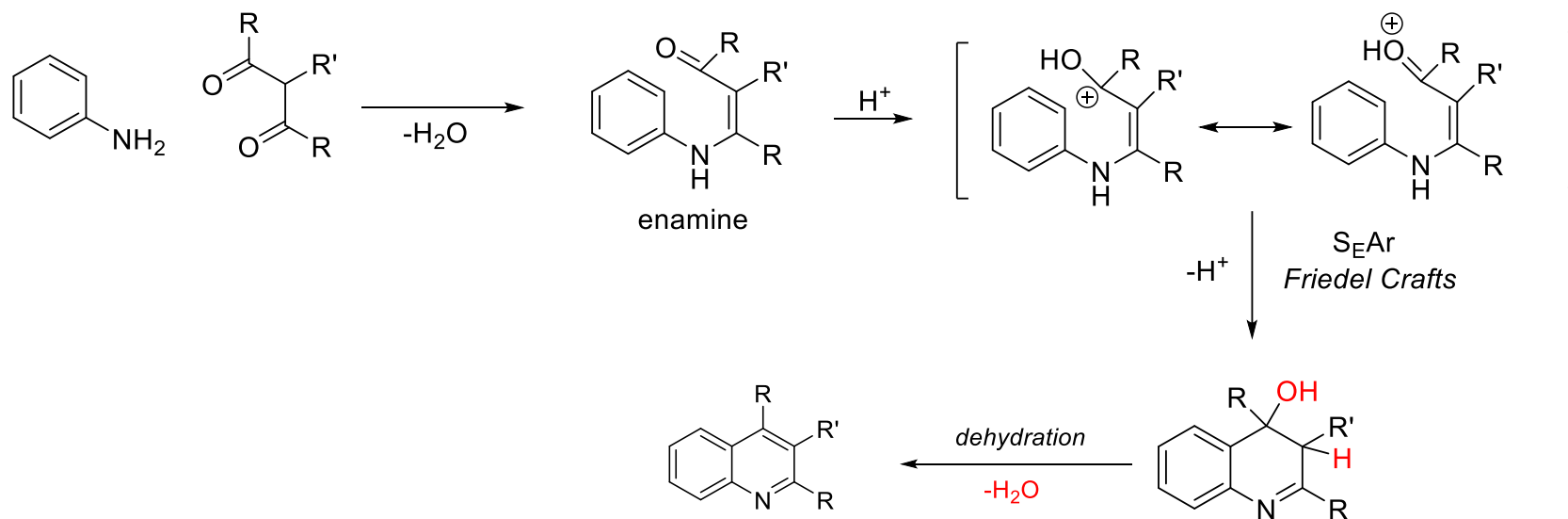


## 2.4.2. Quinoline syntheses

### ■ Combes quinoline synthesis:

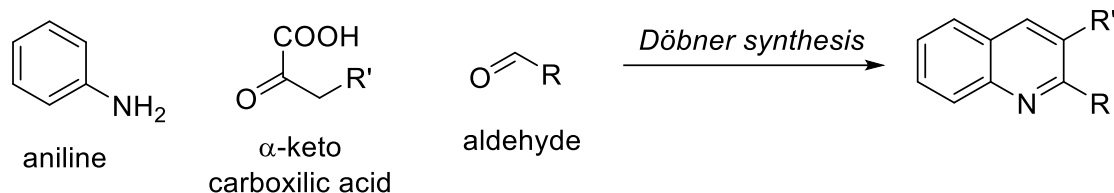


### • Mechanism:

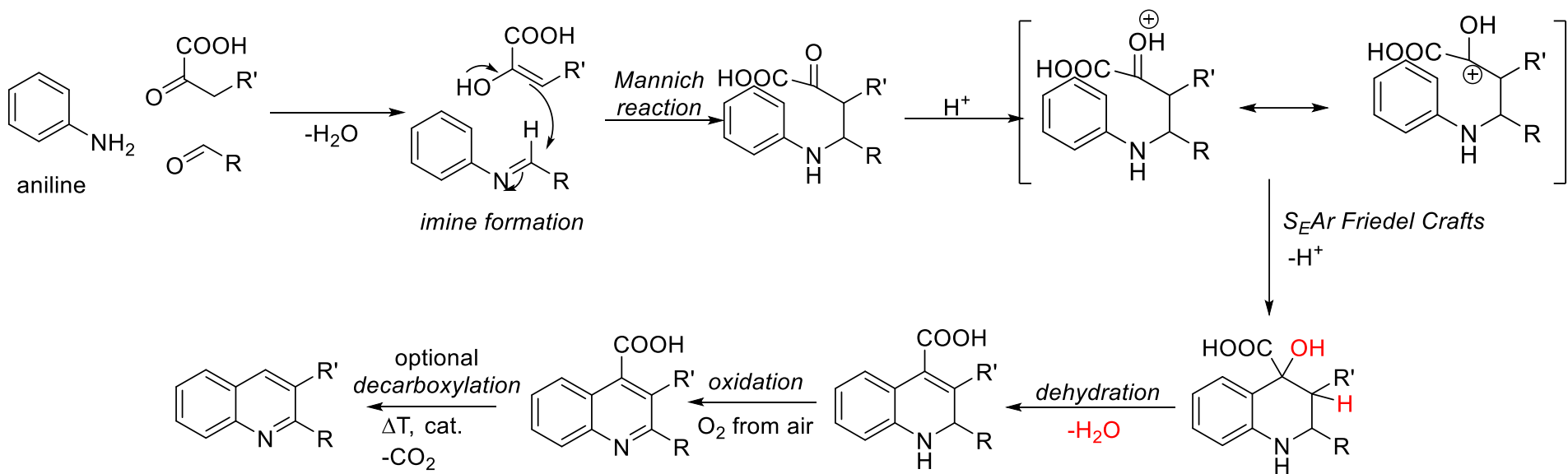


## 2.4.2. Quinoline syntheses

### ■ Döbner quinoline synthesis:

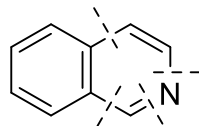


### • Mechanism:

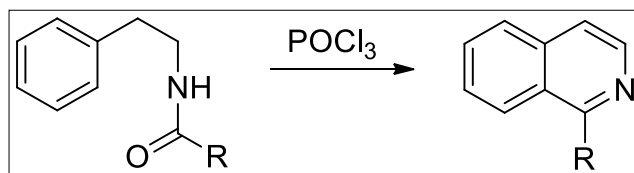


## 2.4.2. Isoquinoline syntheses

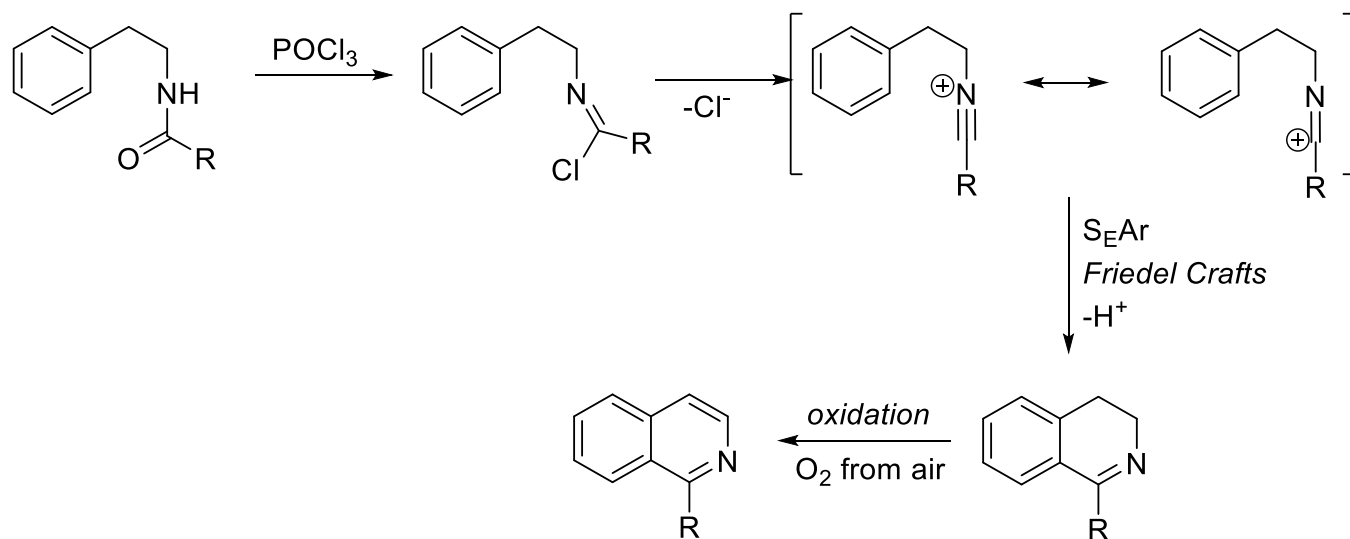
- Strategic disconnections:



- Bischler-Napieralski isoquinoline synthesis:

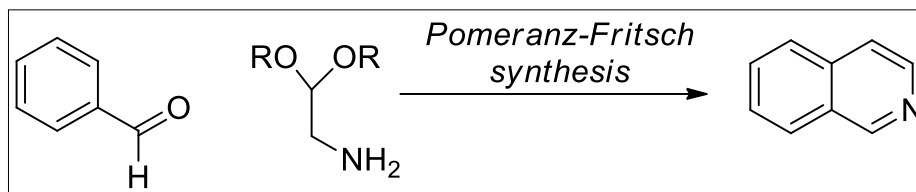


- Mechanism:

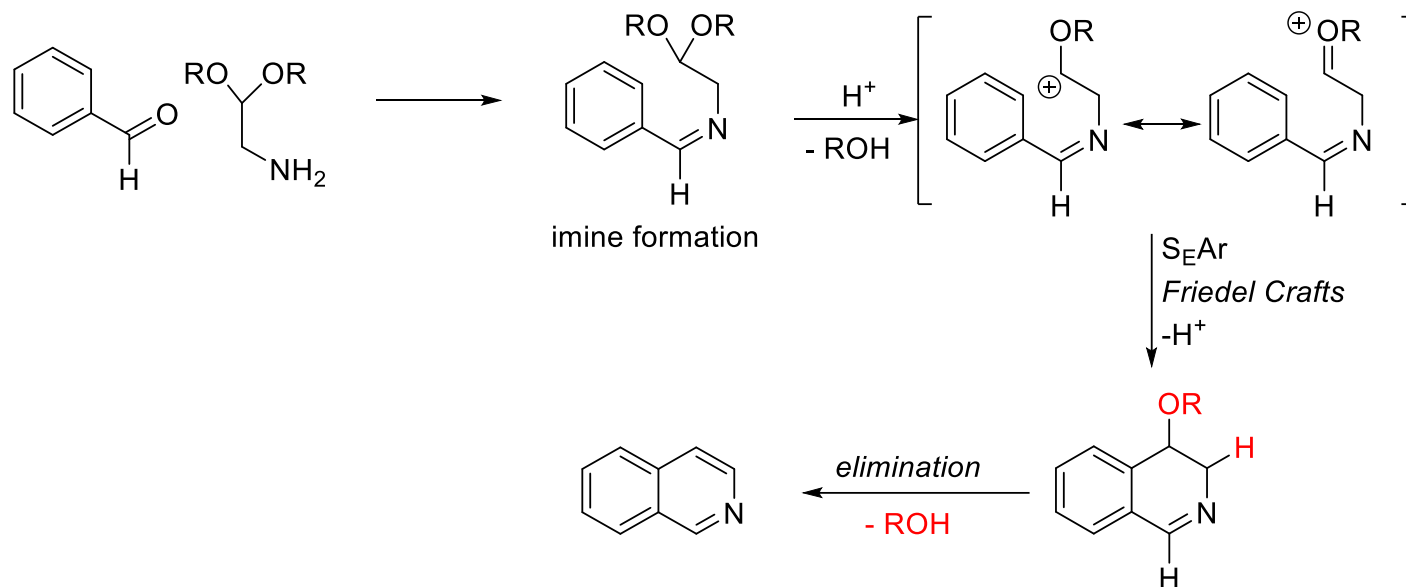


## 2.4.2. Isoquinoline syntheses

- Pomeranz-Fritsch isoquinoline synthesis:



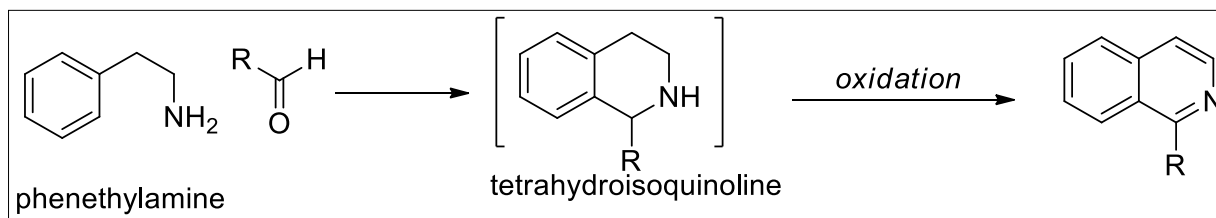
- Mechanism:



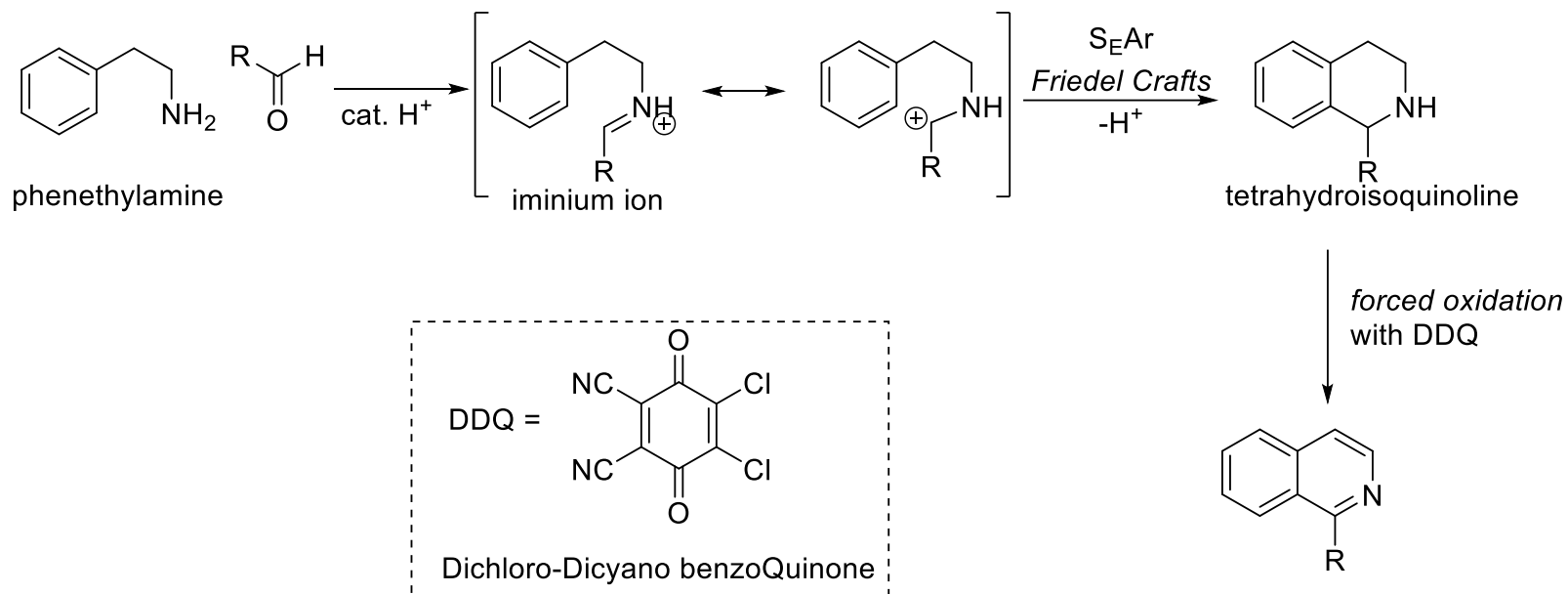
## 2.4.2. Isoquinoline syntheses

- Pictet-Spengler reaction:

This is a more general reaction for several ring size, but used here for the synthesis of isoquinolines



- Mechanism:



### 2.4.3. Case study: Synthesis of Viagra

