

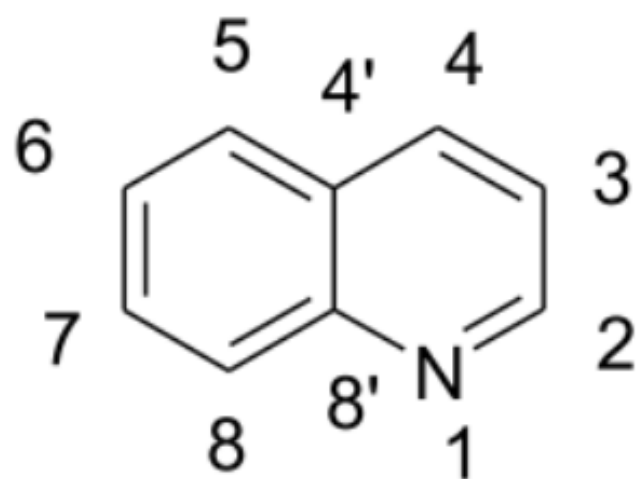
# Quinoline and Isoquinoline

• يوجد في قطران الفحم وهو سائل عديم اللون درجة غليانه مرتفعه 238 درجة مئوية، ويستخدم في علاج الملاريا .

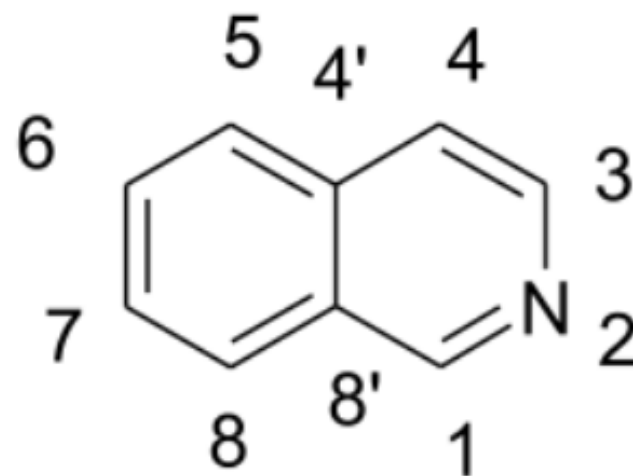
والخواص الكيميائية تشبه البيريدين وعملية الاستبدال النيوكلوфильية تتم في موضعي 2 و 4

واشهر الطرق لتحضيره طريقة سكراب ((Skrap synthesis))

إيزوكينولين هو مركب عضوي حلقي غير متجانس عطري وهو ايزومير بنيوي من الكينولين



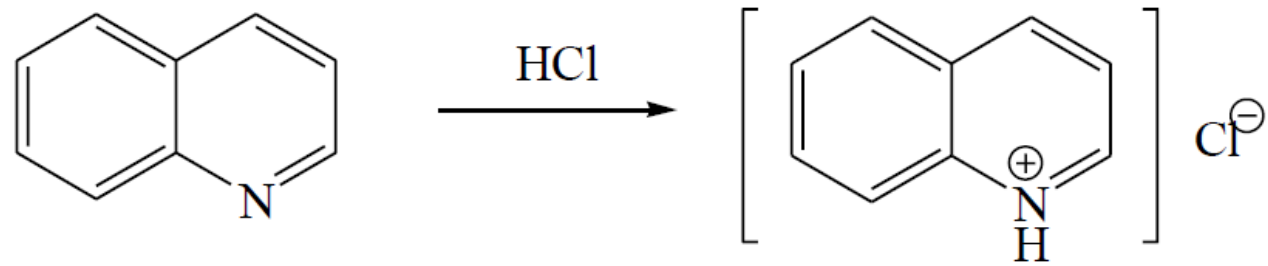
Quinoline



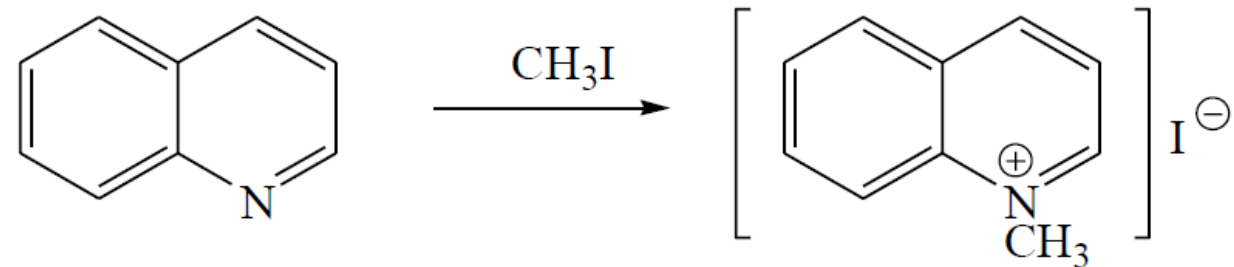
Isoquinoline

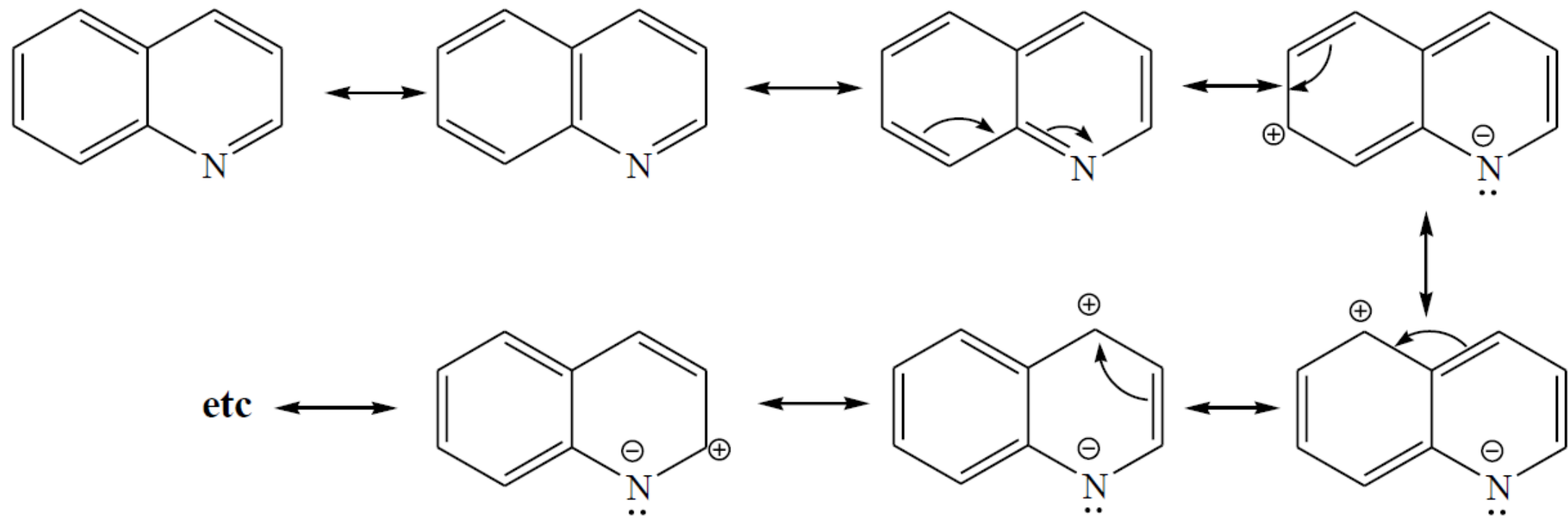
**Basicity:** Due to availability of lone pair of electrons on nitrogen, quinoline acts as a base and forms salts with acids and quaternary salts with alkyl halides.

a. Reaction with acids:



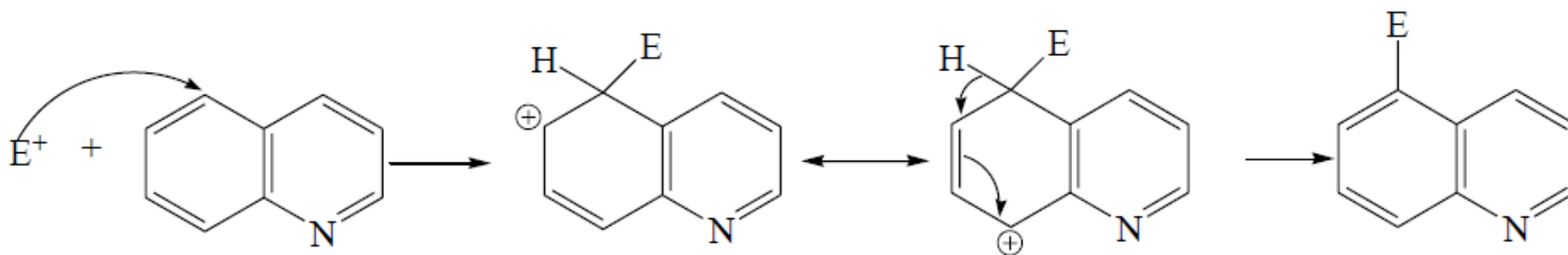
b. Reaction with methyl iodide:



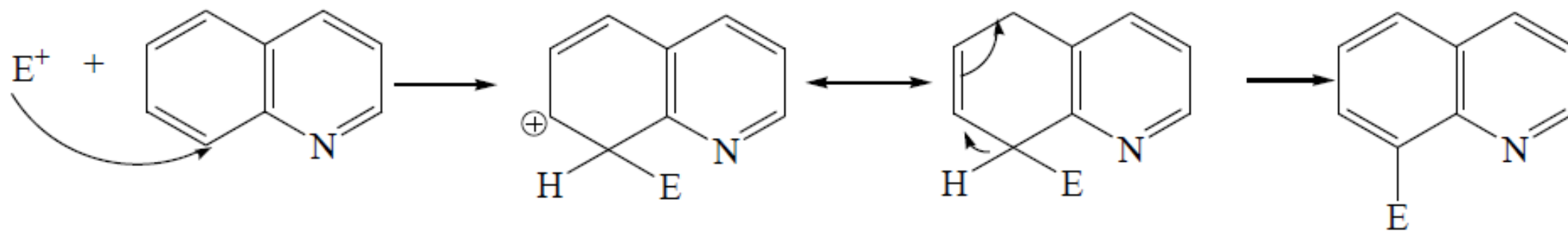


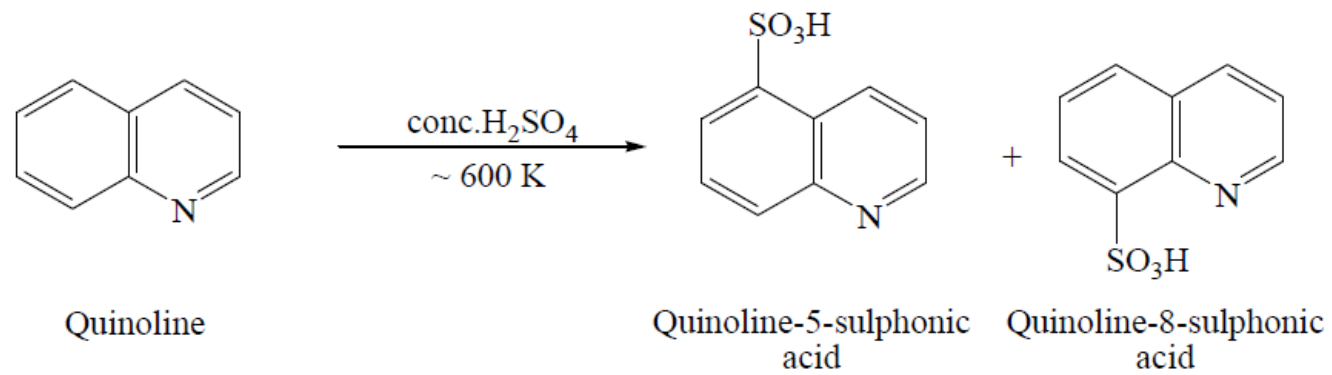
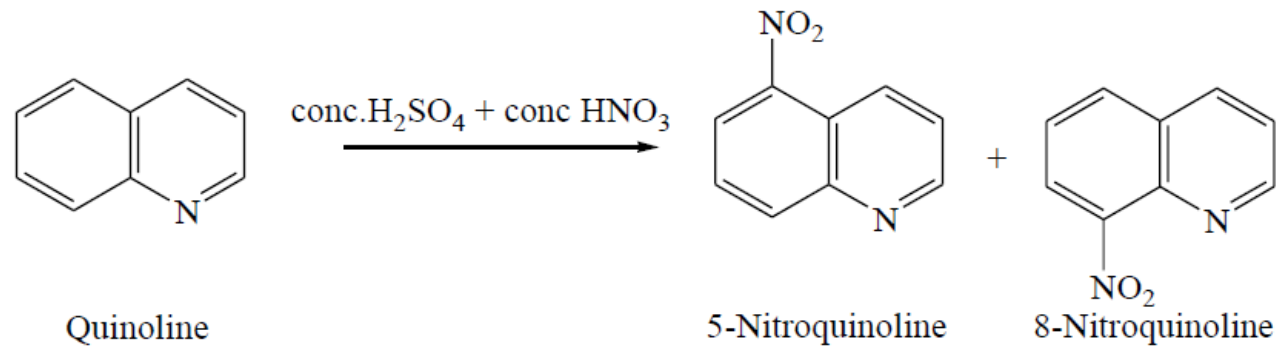
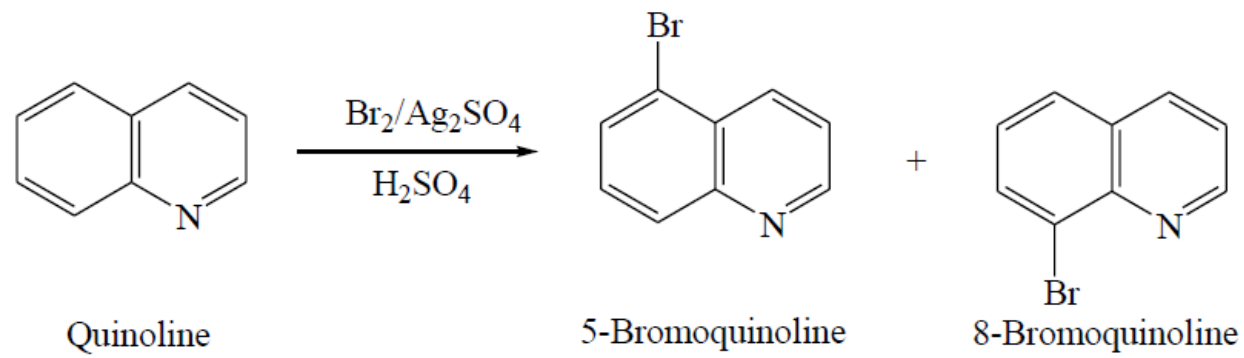
electrophilic substitution on quinoline is shown below.

**a.** At position 5

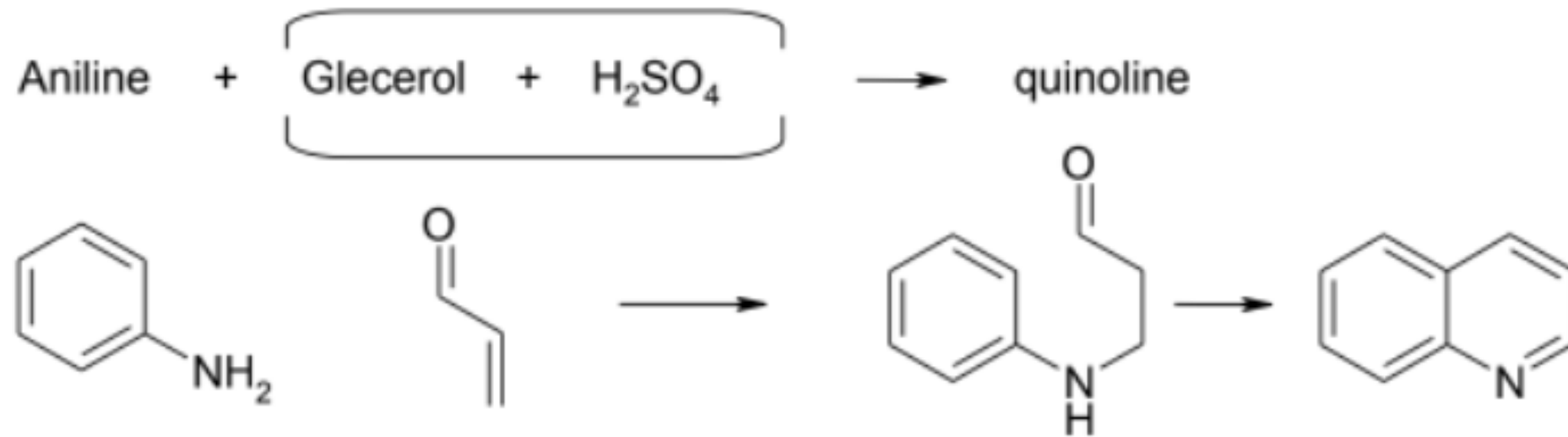


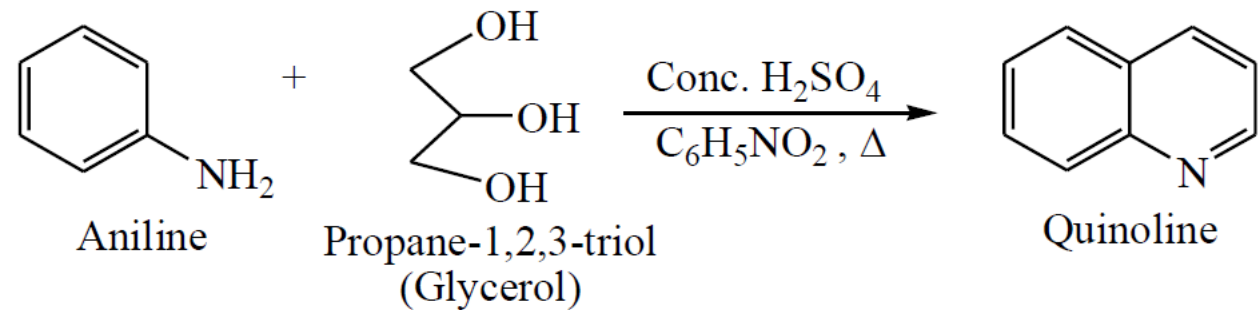
**b.** At position 8



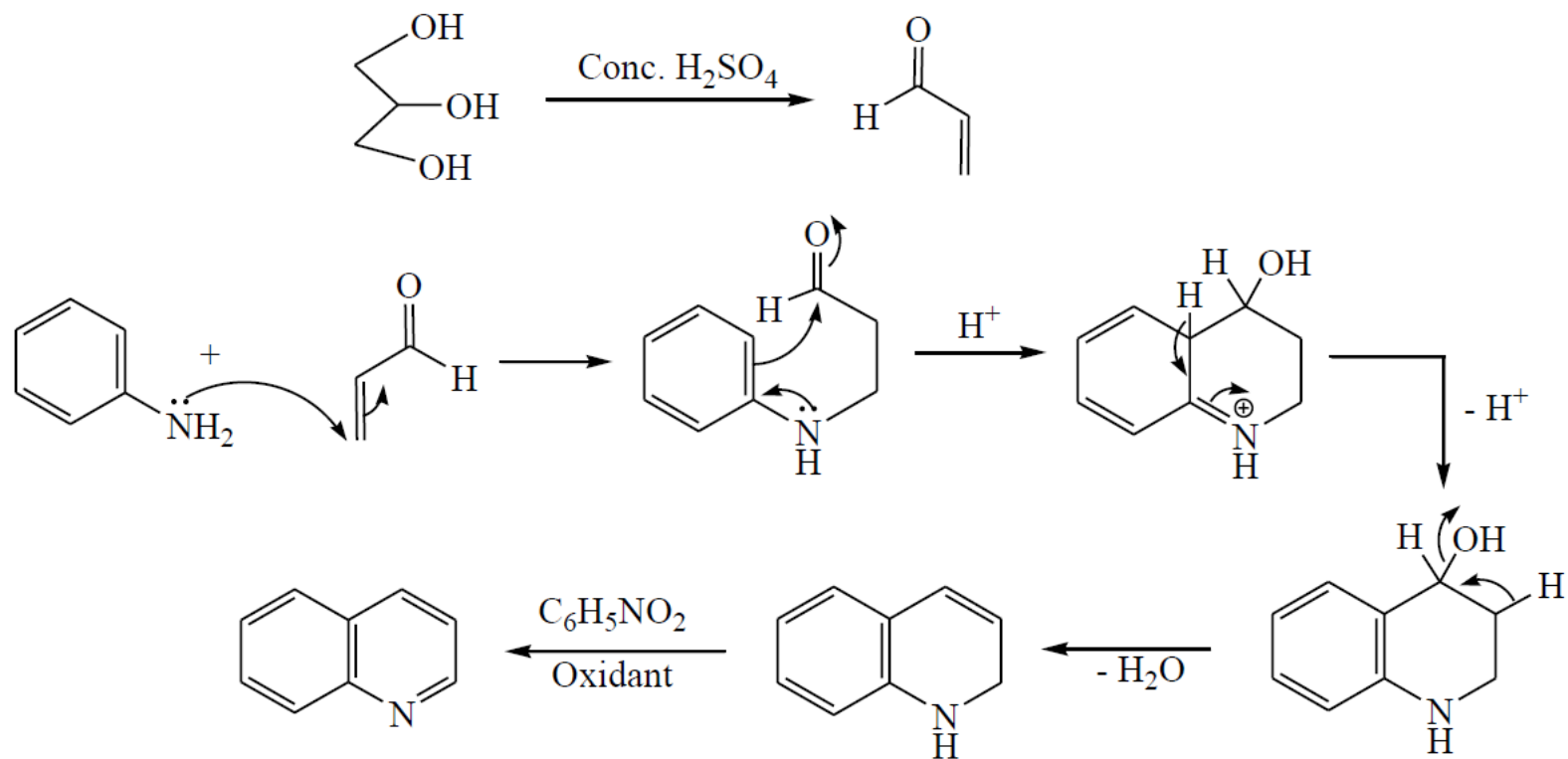


# 1) Quinoline Skraup Synthesis



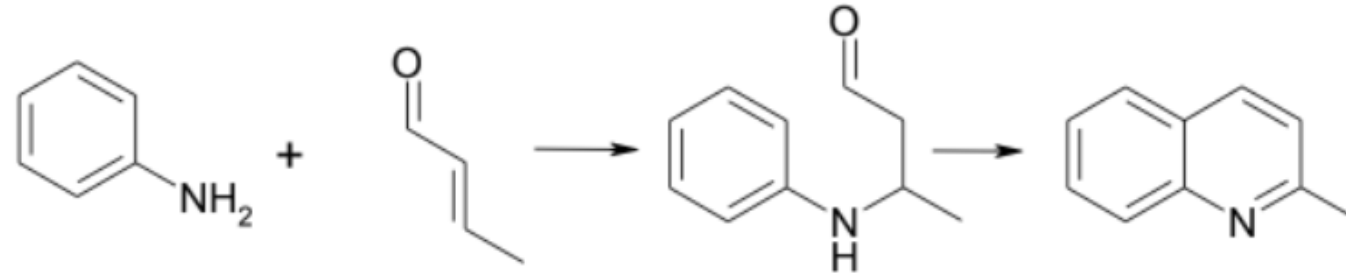


**Mechanism:** The step wise mechanism of Skraup synthesis of quinoline is given as follow.

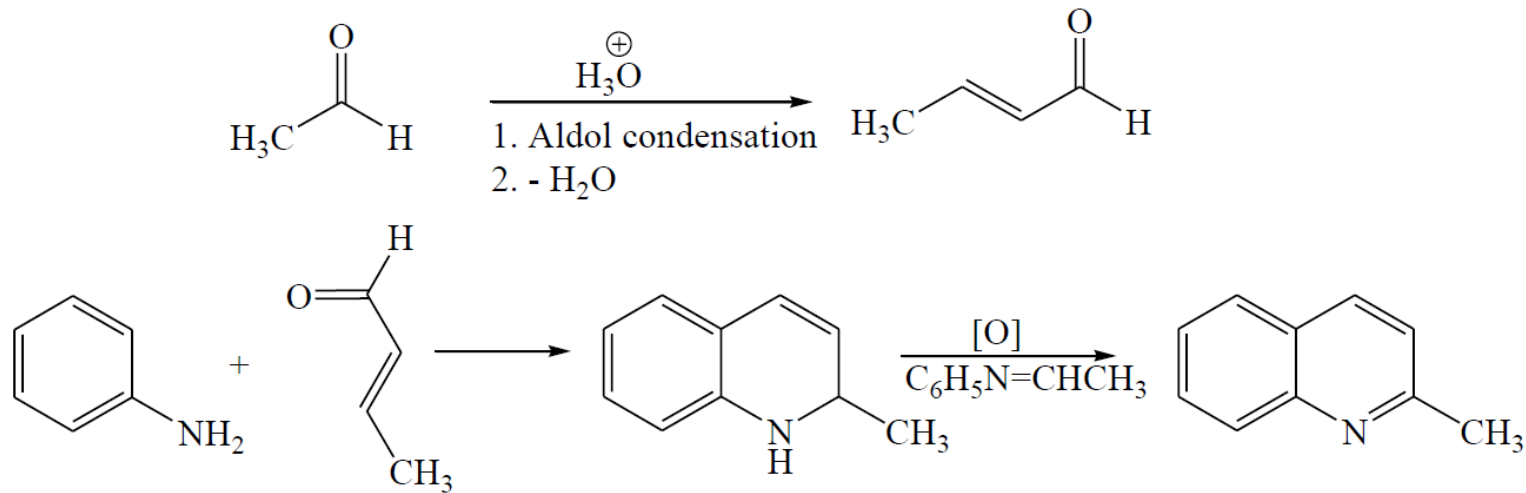


2)

## Doebner-von Millar

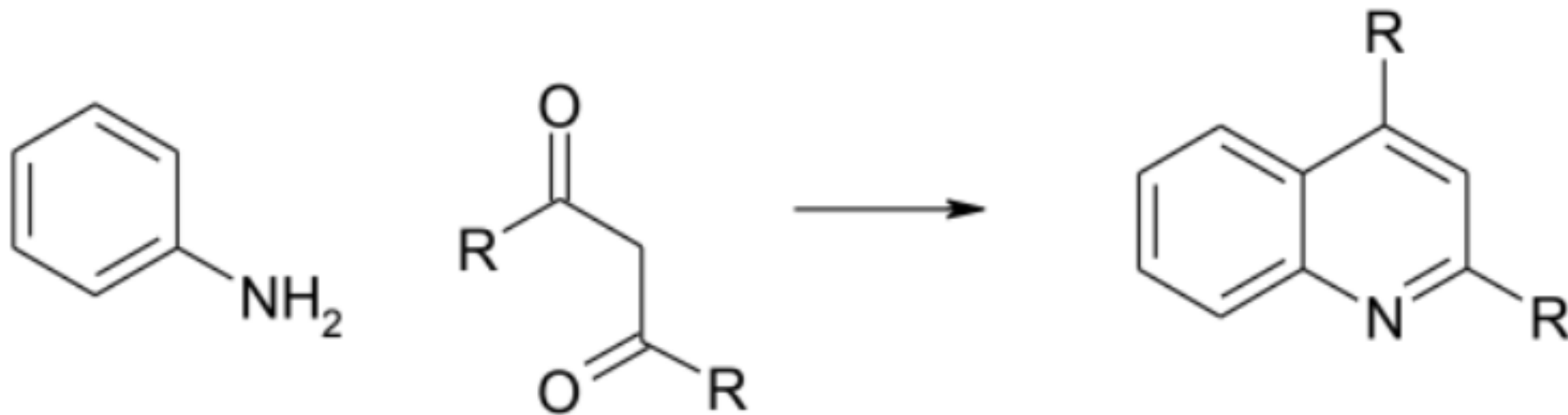


### Mechanism:





### 3) Combes Synthesis



### 4) Friedlaender Synthesis

