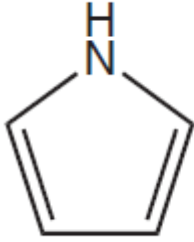
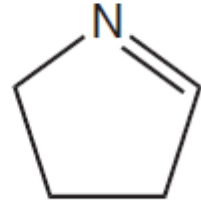


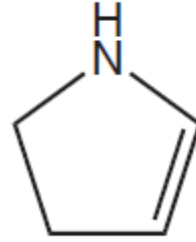
# İlaçlarda Bulunan Çeşitli Heterohalkalı Yapılar ve Sentezleri



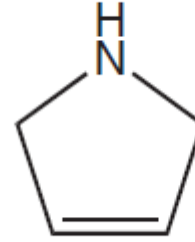
**Pirrol**



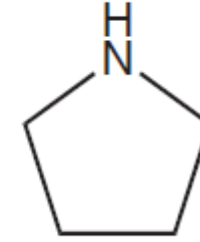
**1-Pirolin**



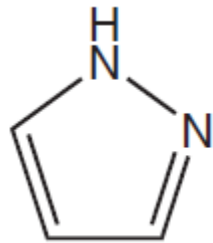
**2-Pirolin**



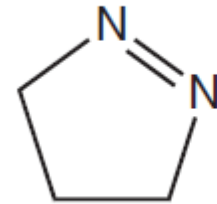
**3-Pirolin**



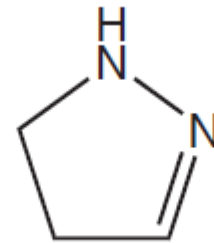
**Pirolidin**



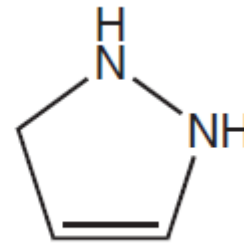
**Pirazol**



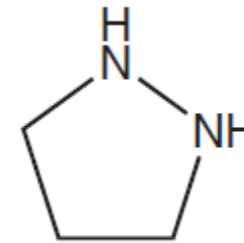
**1-Pirazolin**



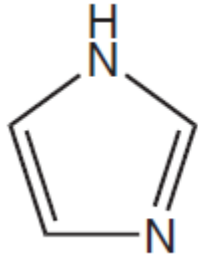
**2-Pirazolin**



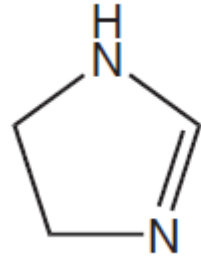
**3-Pirazolin**



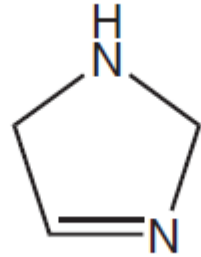
**Pirazolidin**



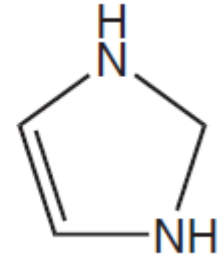
**İmidazol**



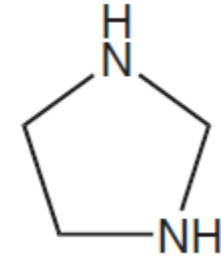
**2-İmidazolin**



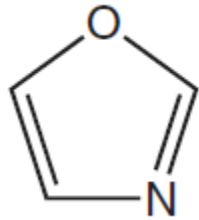
**3-İmidazolin**



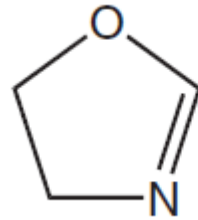
**4-İmidazolin**



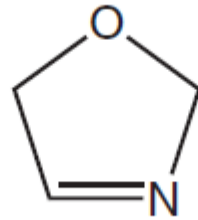
**İmidazolidin**



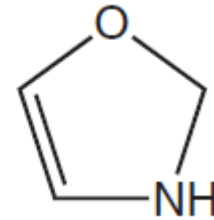
**Oksazol**



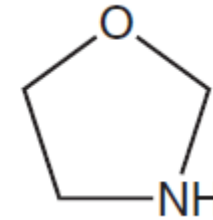
**2-Oksazolin**



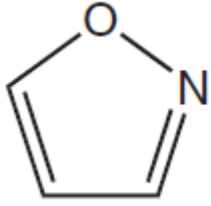
**3-Oksazolin**



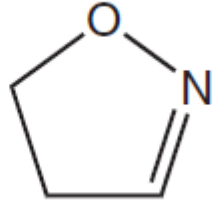
**4-Oksazolin**



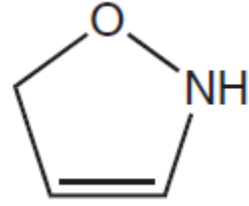
**Oksazolidin**



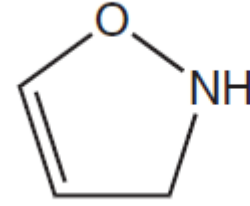
**İzoksazol**



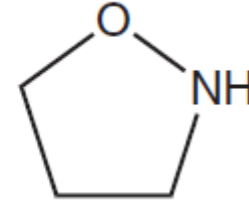
**2-İzoksazolin**



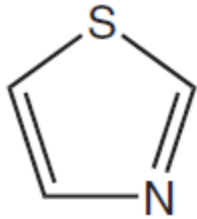
**3-İzoksazolin**



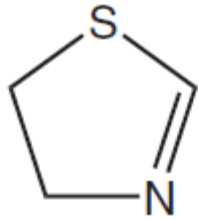
**4-İzoksazolin**



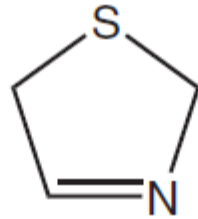
**İzoksazolidin**



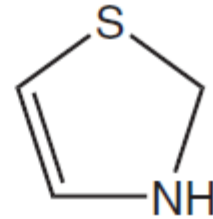
**Tiyazol**



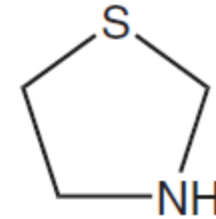
**2-Tiyazolin**



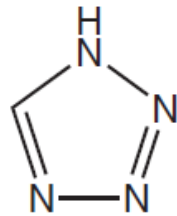
**3-Tiyazolin**



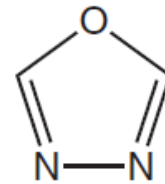
**4-Tiyazolin**



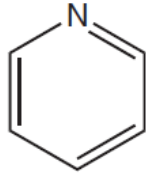
**Tiyazolidin**



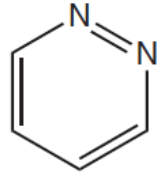
**1H-Tetrazol**



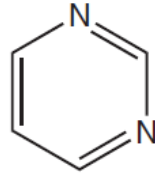
**1,3,4-Oksadiazol**



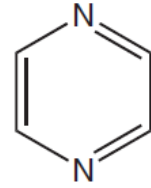
**Piridin**



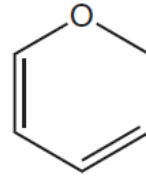
**Piridazin**



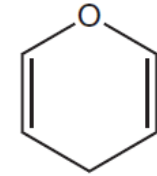
**Pirimidin**



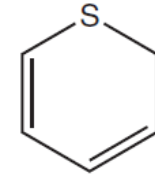
**Pirazin**



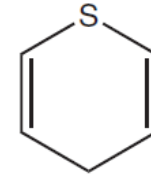
**2H-Piran**



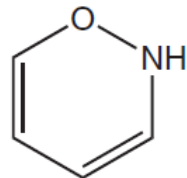
**4H-Piran**



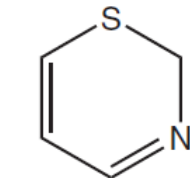
**2H-Tiyopiran**



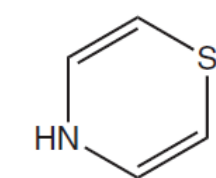
**4H-Tiyopiran**



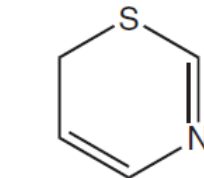
**2H-1,2-Oksazin**



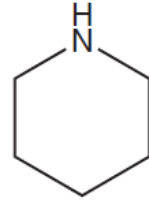
**2H-1,3-Tiazin**



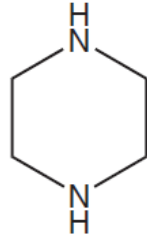
**4H-1,4-Tiazin**



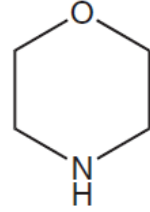
**6H-1,3-Tiazin**



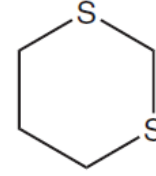
**Piperidin**



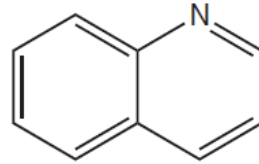
**Piperazin**



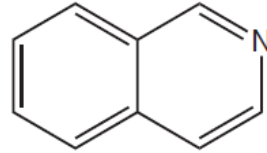
**Morfolin**



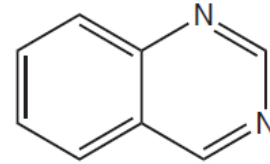
**1,3-Ditiyan**



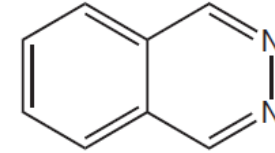
**Kinolin**



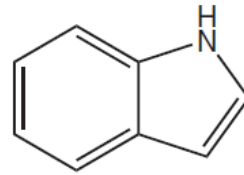
**İzokinolin**



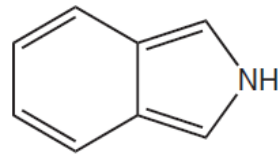
**Kinazolin**



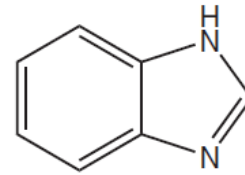
**Ftalazin**



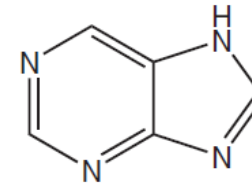
**1H-İndol**



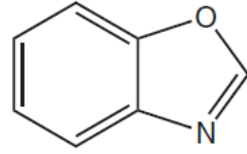
**2H-İzoindol**



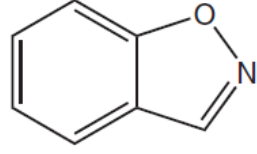
**1H-Benzimidazol**



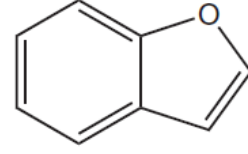
**Pürin**



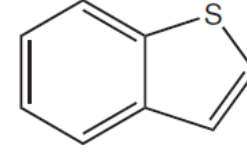
**Benzokazol**



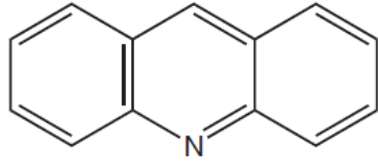
**Benizoksazol**



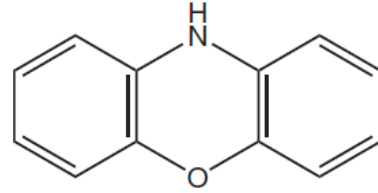
**Benzofuran**



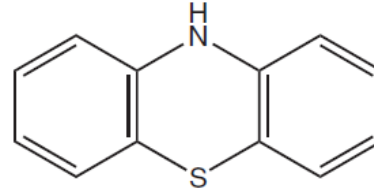
**Benzotiyofen**



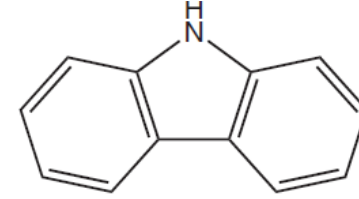
**Akridin**



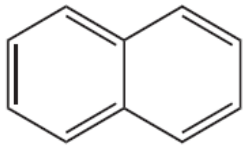
**10H-Fenoksazin**



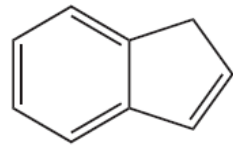
**10H-Fenotiyazin**



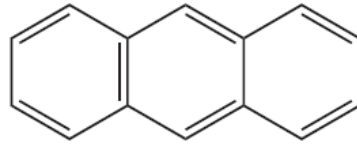
**9H-Karbazol**



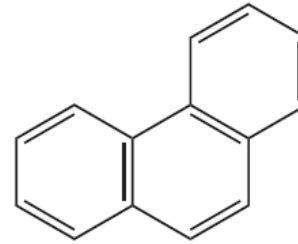
**Naftalen**



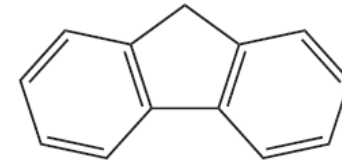
**İnden**



**Antrasen**

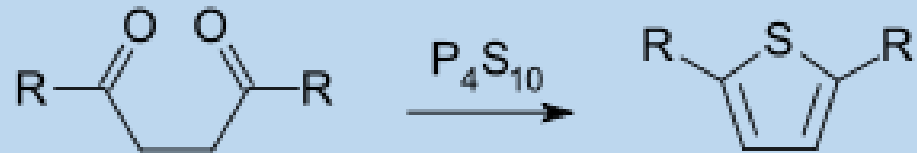
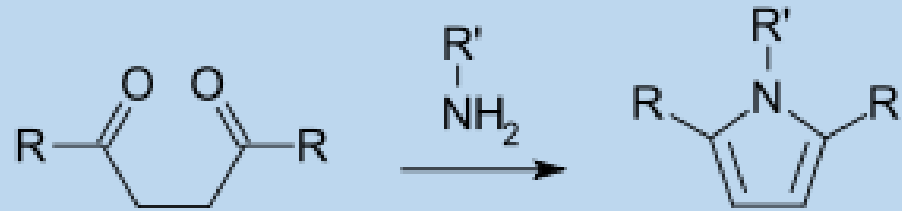
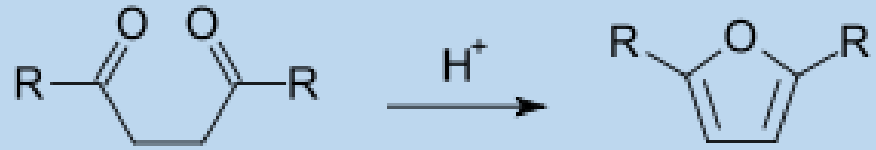


**Fenantren**



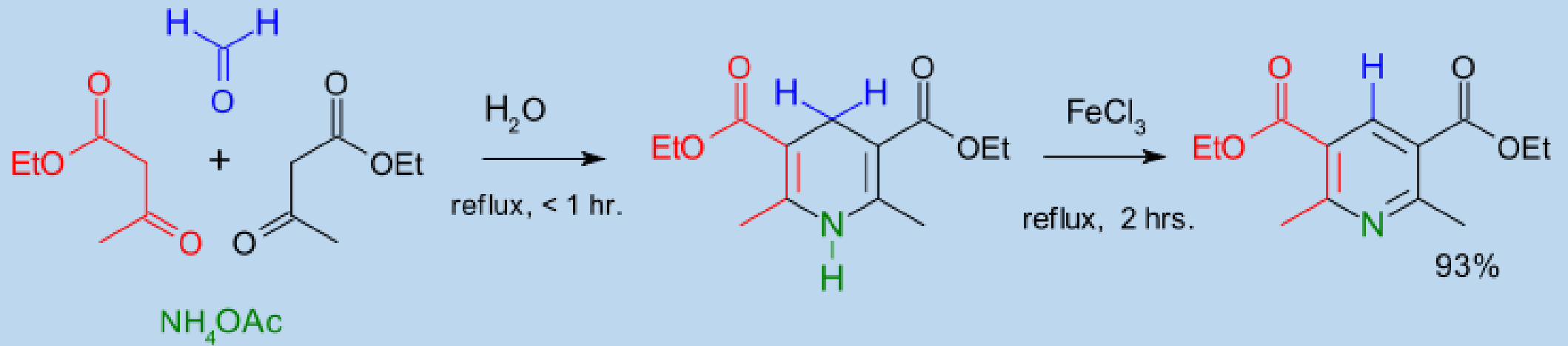
**9H-Fluoren**

## Paal-Knorr Sentezleri

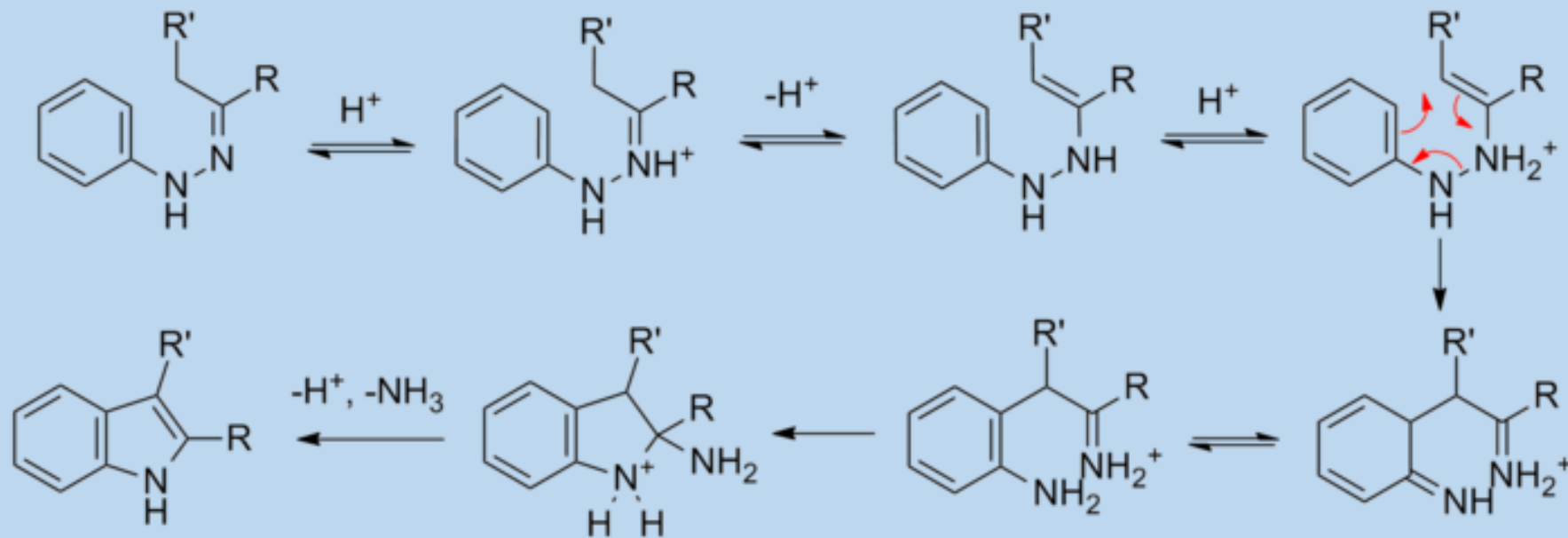




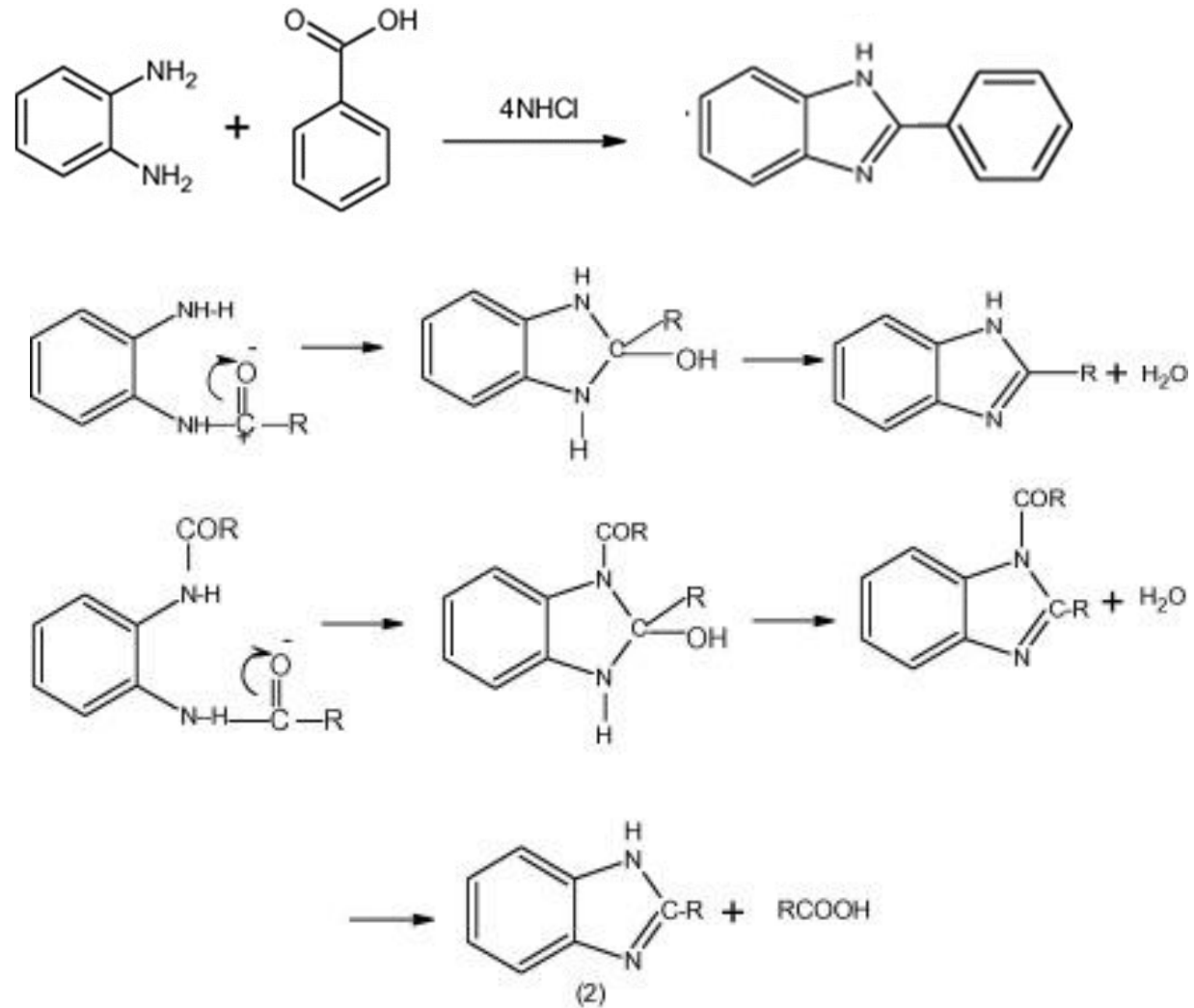
## Hantzsch Piridin Sentezi



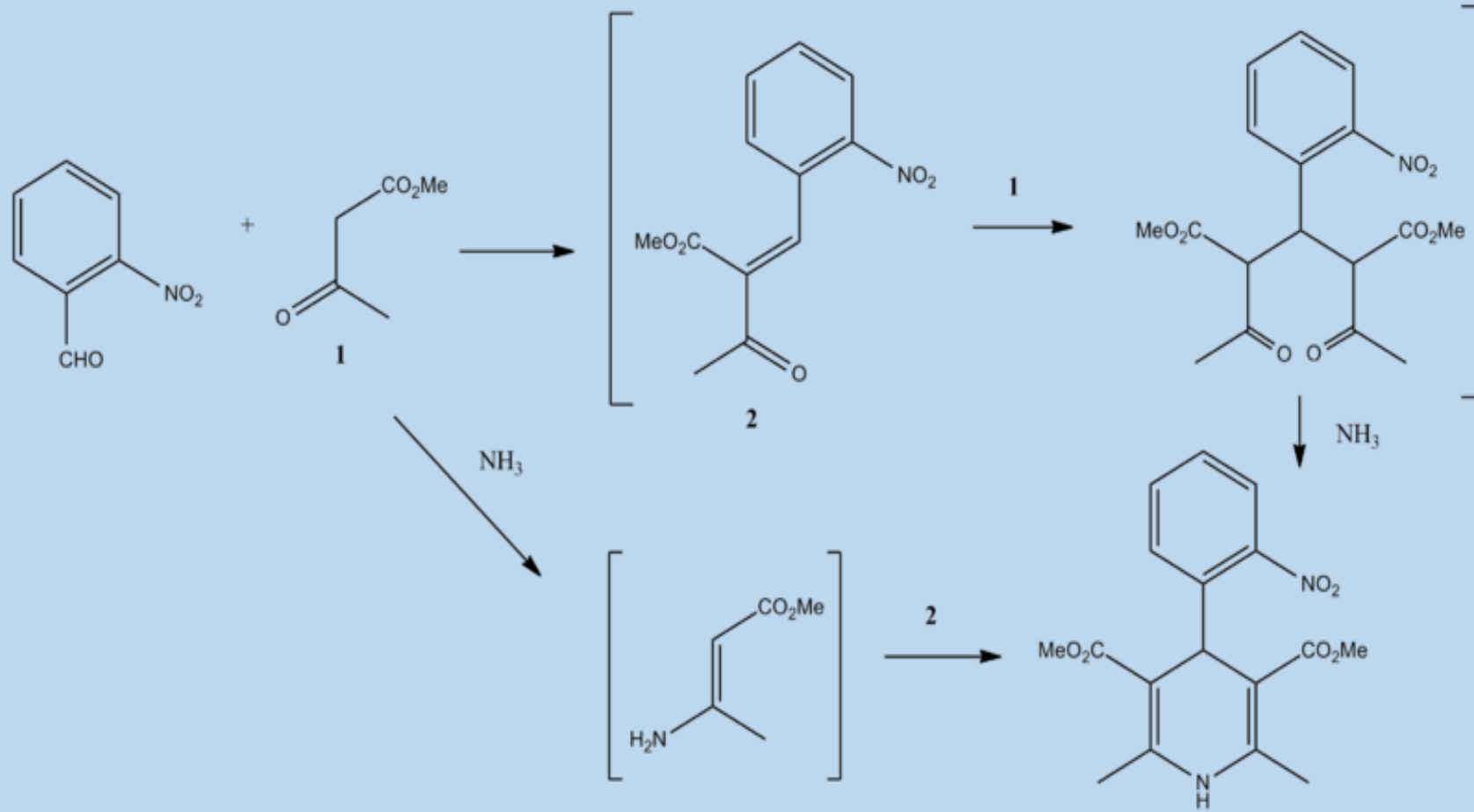
## Fischer İndol Sentezi



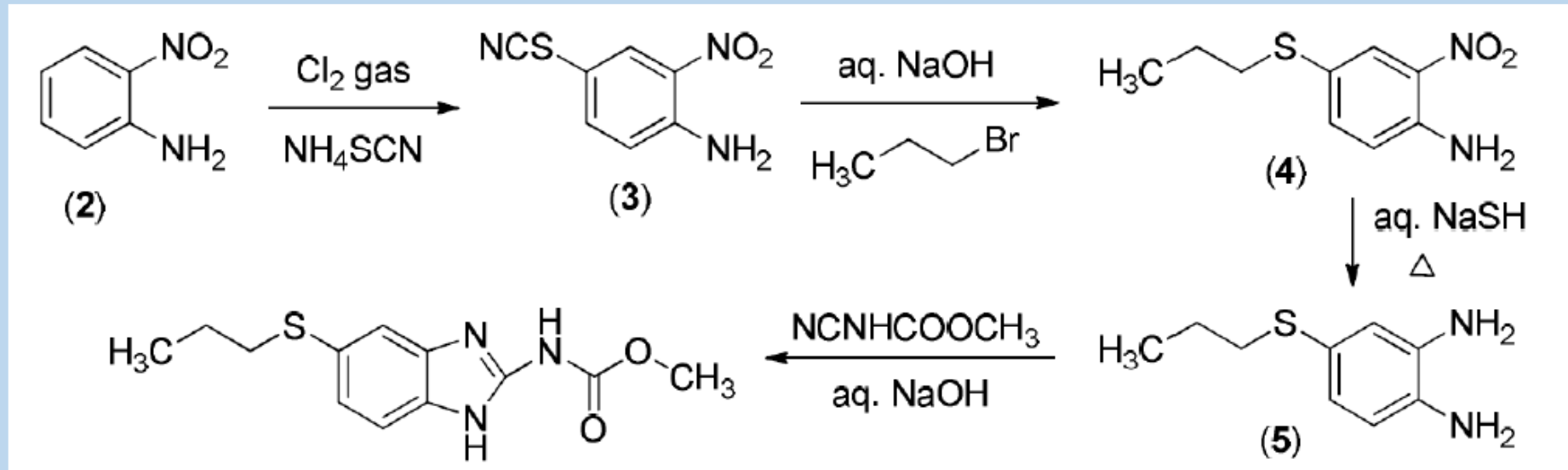
## Phillips Benzimidazol Sentezi



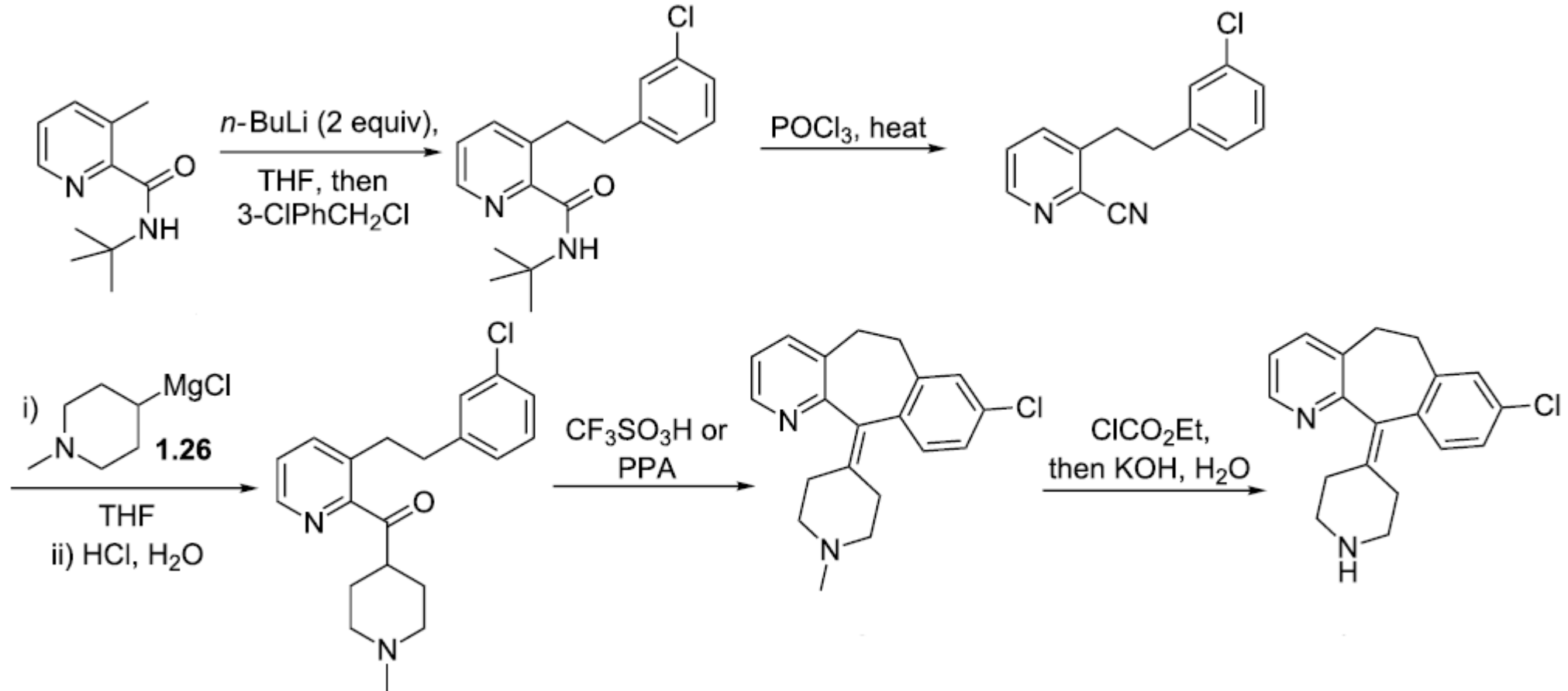
## Nifedipin Sentezi



## Albendazol Sentezi



## Klarineks Sentezi



# Kaynaklar

- 1) *Organic Chemistry Concepts and Applications for Medicinal Chemistry*, Joseph Rice; Academic Press, 2014.
- 2) *Beilstein J. Org. Chem.* **2013**, 9, 2265–2319.
- 3) *Beilstein J. Org. Chem.* **2011**, 7, 442–495.