

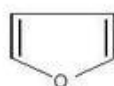
杂化化合物特指：

环状化合物具有芳香结构（闭合共轭体系），一定程度的稳定性。

### 单环

五元环

含一个杂原子



Furan

呋喃



Pyrrole

吡咯



Thiophene

噻吩

含两个杂原子



Oxazole

噁唑



Imidazole

咪唑



Thiazole

噻唑



Isoxazole

异噁唑



Pyrazole

吡唑

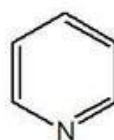


Isothiazole

异噻唑 知乎 @药物化学

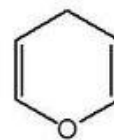
六元环

含一个杂原子：



Pyridine

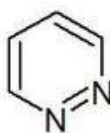
吡啶



Pyran

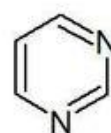
吡喃

含两个杂原子：



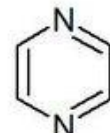
Pyridazine

哒嗪



Pyrimidine

嘧啶

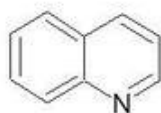


Pyrazine

吡嗪

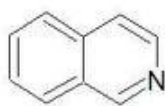
知乎 @药物化学

稠杂环



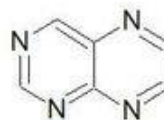
Quinoline

喹啉

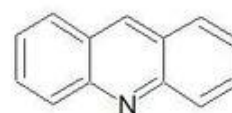


Isoquinoline

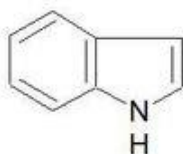
异喹啉



蝶啶

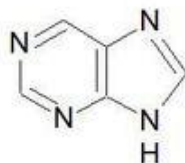


丫啉



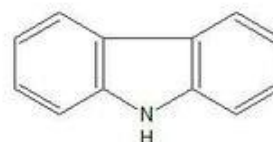
Indole

吲哚



Purine

嘌呤

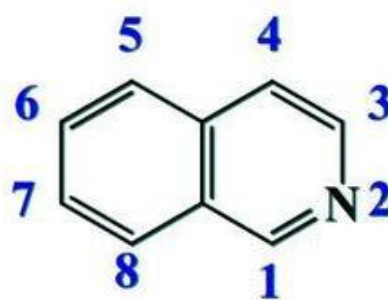


Carbazole

咔唑 @药物化学



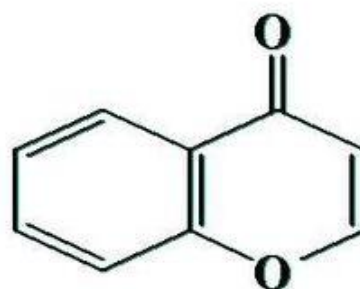
喹啉  
(quinoline)



异喹啉  
(isoquinoline)

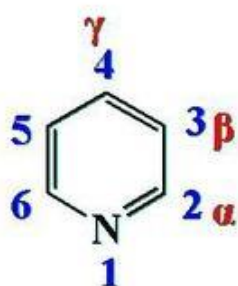


苯并吡喃(benzopyran)

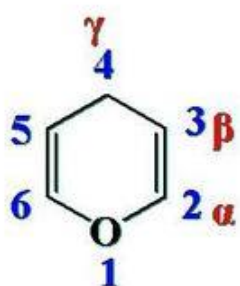


苯并-γ-吡喃酮  
(benzo-γ-pyrone) @药物化学

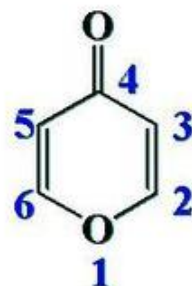
# (1) 单原子六元杂环



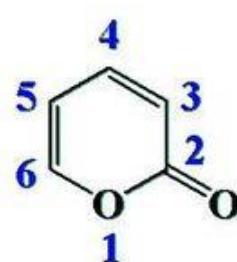
吡啶(pyridine)



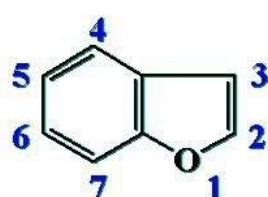
吡喃(pyran)



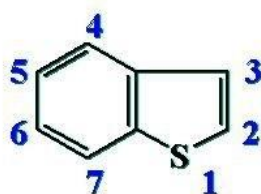
γ-吡喃酮



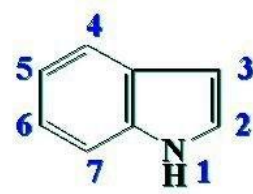
α-吡喃酮



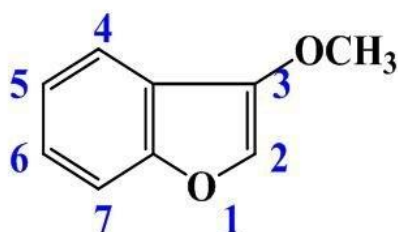
苯并呋喃  
(benzofuran)



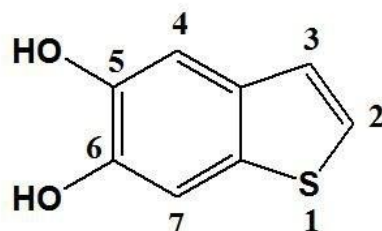
苯并噻吩  
(benzothiophene)



苯并吡咯  
吲哚(indole)

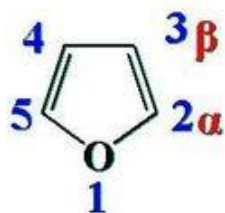


3-甲氧基苯并呋喃

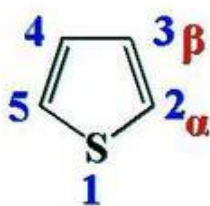


5,6-二羟基苯并噻吩

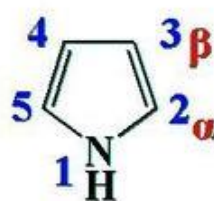
(1) 单杂原子五元杂环命名



呋喃(furan)



噻吩(thiophene)



吡咯(pyrrole)

只含一个杂原子的杂环，可把靠近杂原子的位置叫做 $\alpha$ 位，其次为 $\beta$ 位。

知乎 @药物化学