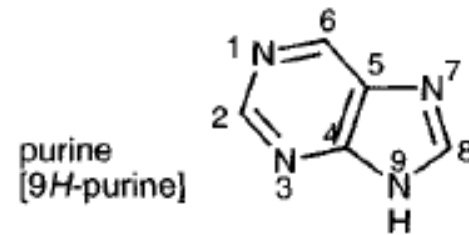
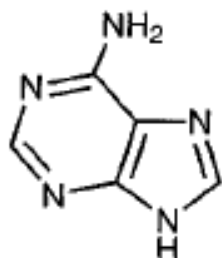


# **A purin és a purinvázis vegyületek kémiája**

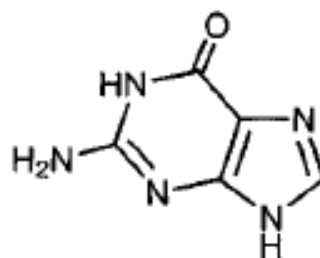
## Az alapvegyület



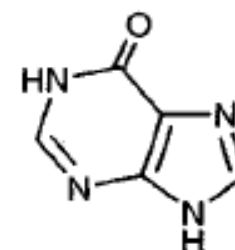
## Természetes purinszámazékok



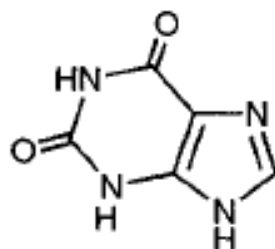
adenine



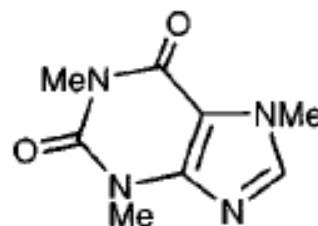
guanine



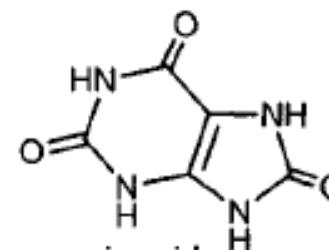
hypoxanthine



xanthine

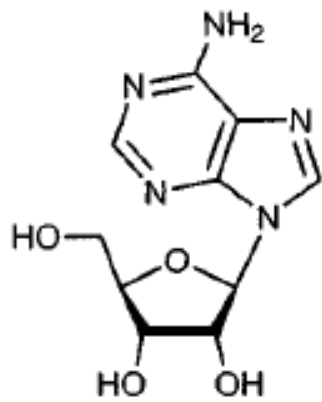


caffeine

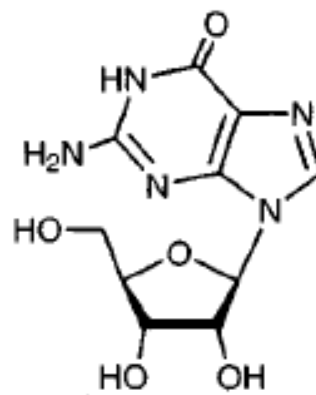


uric acid

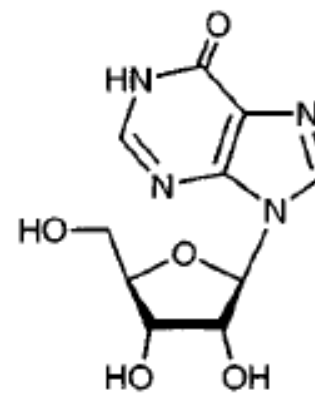
# Nukleozidok



adenosine

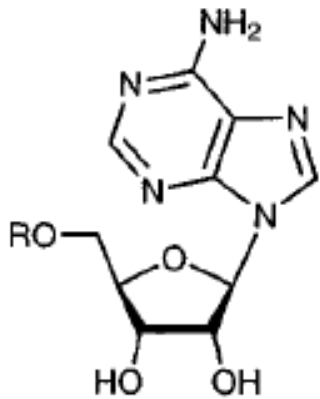


guanosine

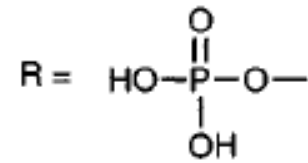


inosine

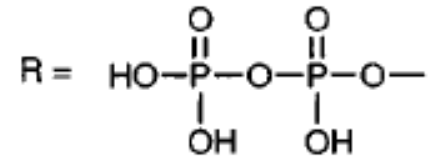
# Nukleotidok



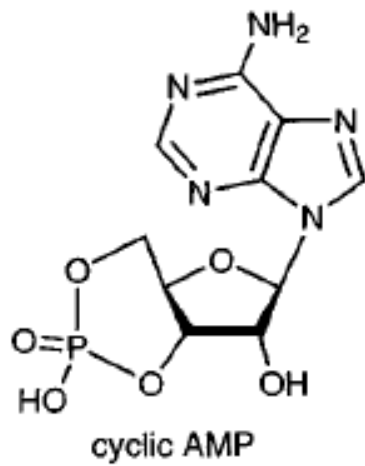
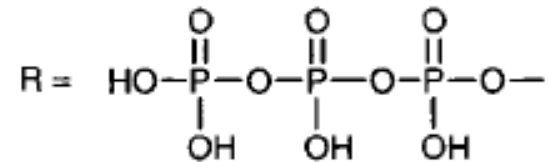
adenosine-5'-monophosphate (AMP)



adenosine-5'-diphosphate (ADP)

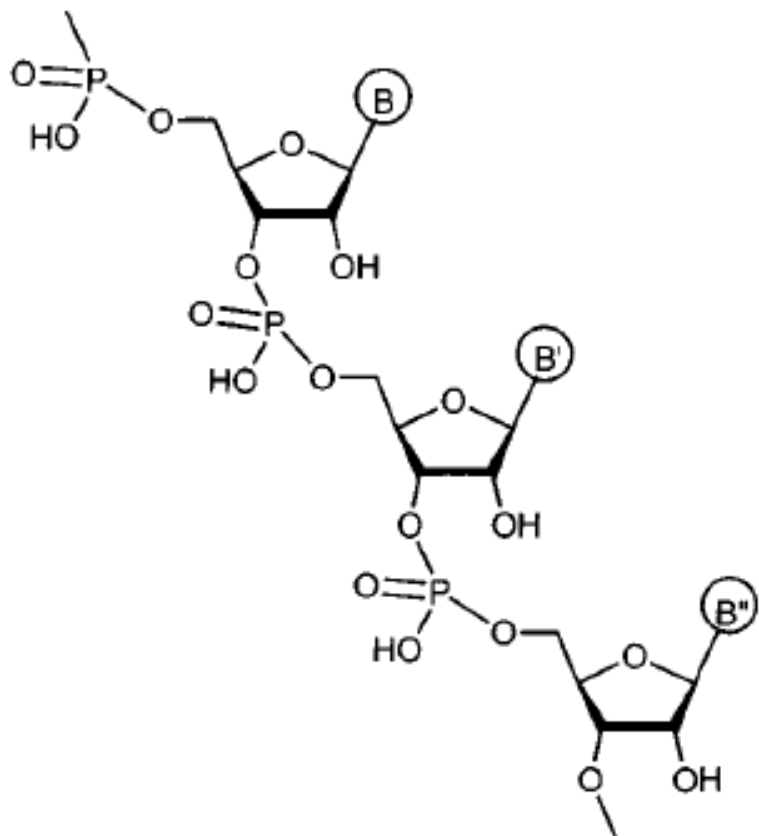


adenosine-5'-triphosphate (ATP)



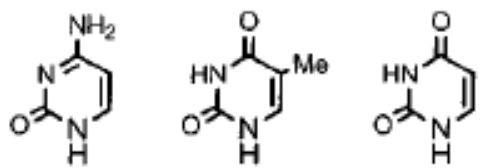
cyclic AMP

# Nukleinsavak

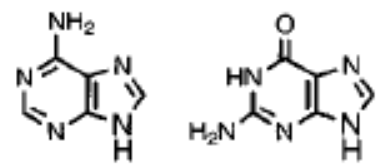


The (-phosphate-sugar-phosphate-sugar-) 'backbone' of RNA

B, B', B'' represent the purine and pyrimidine bases



cytosine      thymine (DNA only)      uracil

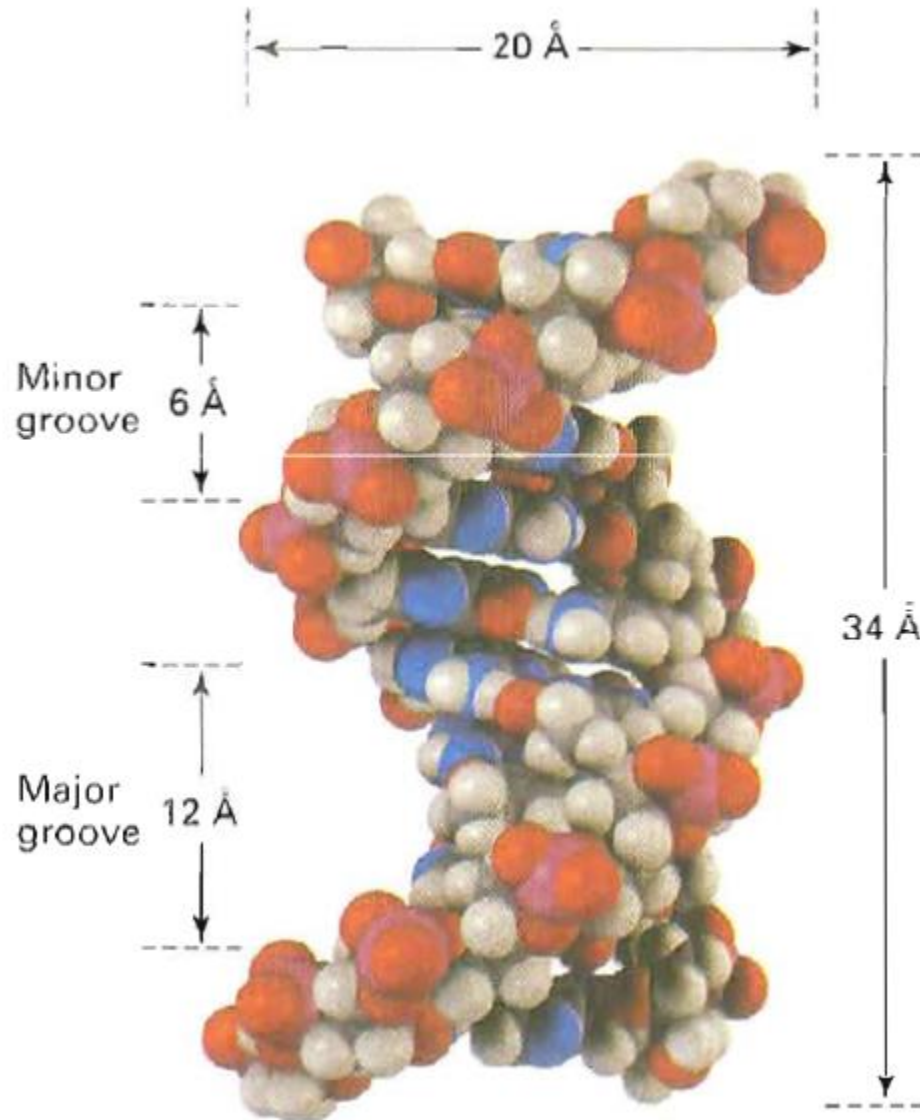


adenine      guanine

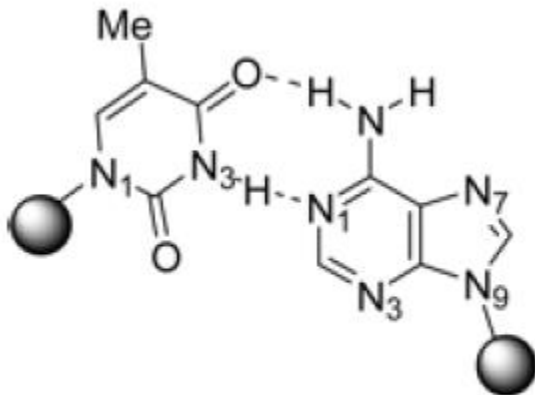
RNS: A, G, C, U

DNS: A, G, C, T – kettős spirál (jobbmenetes)

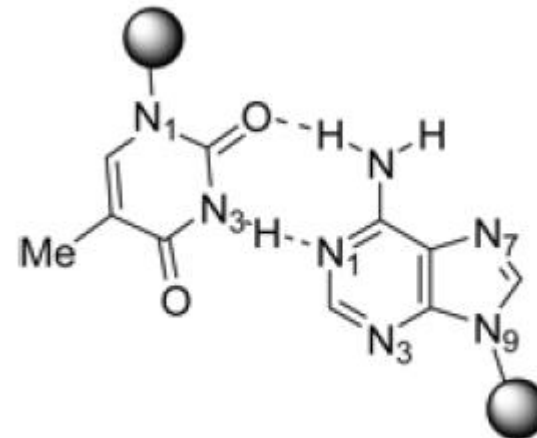
**DNS:** A, G, T, C – kettős spirál (jobbmenetes)



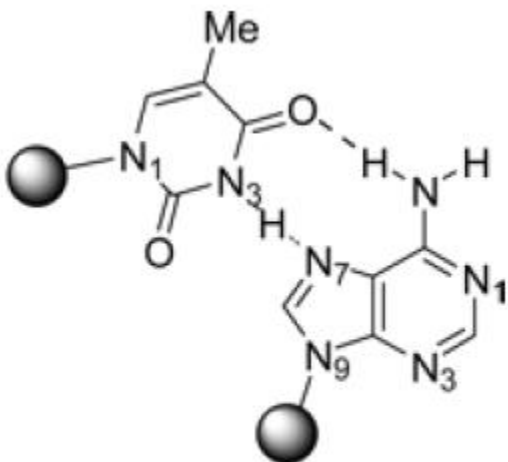
**DNS:** A-T bázispár



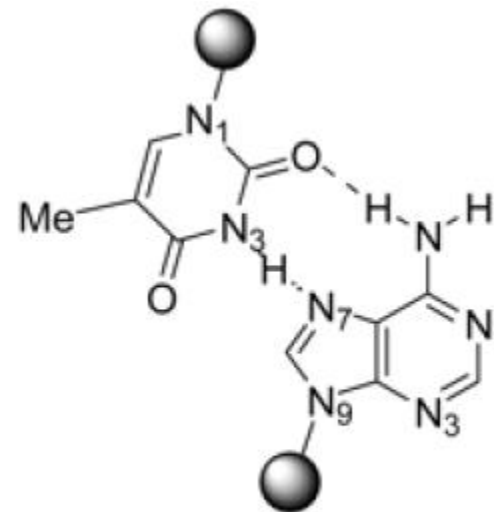
Watson-Crick (WC)



Reverse Watson-Crick (rWC)



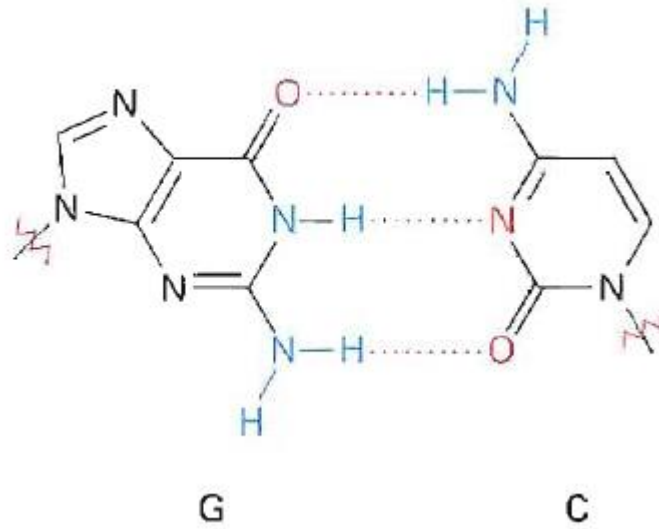
Hoogsteen (H)



Reverse Hoogsteen (rH)



**DNS:** G-C bázispár

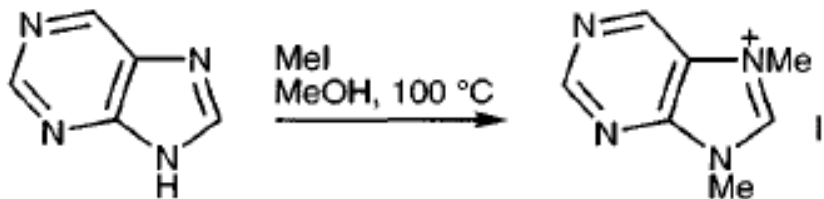


# Sav-bázis sajátságok

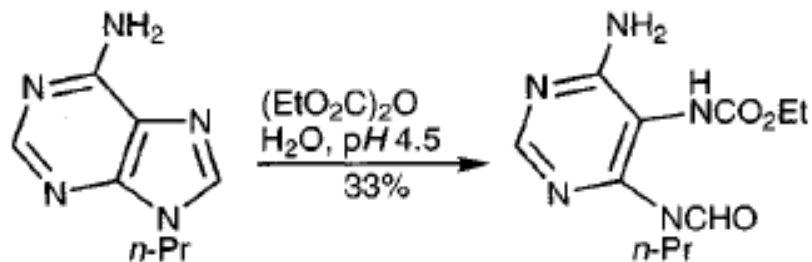
N- protonálódás ( $pK_s = 2.5$ )



N- alkilezés

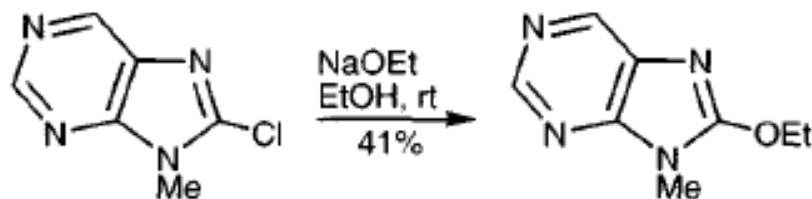
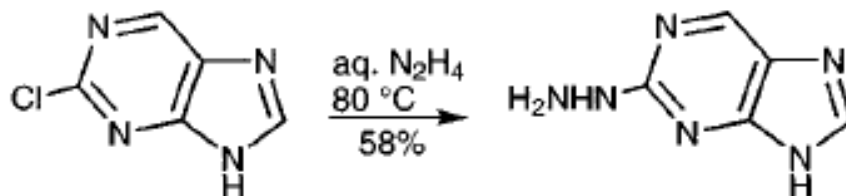
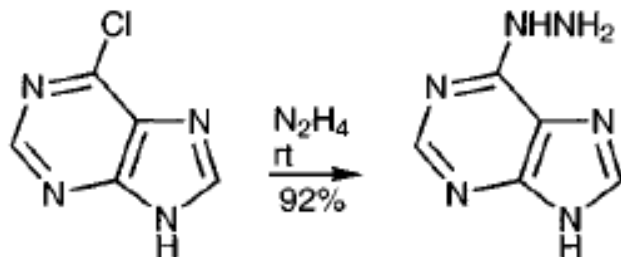


N- acilezés



**Az aromás elektrofil szubsztitúció – nem jellemző**

**Az aromás nukleofil szubsztitúció – nagyon jellemző**

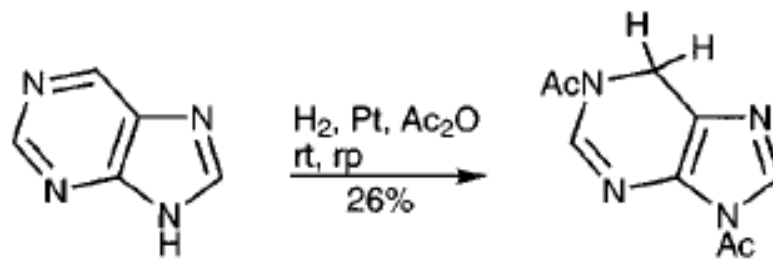


reaktivitási sorrend: 6 > 8 > 2

## Oxidáció

kevés lényeges gyűrűoxidáció ismert

## Redukció



acilezőszer nélkül gyűrűnyílási reakciók mennek végbe

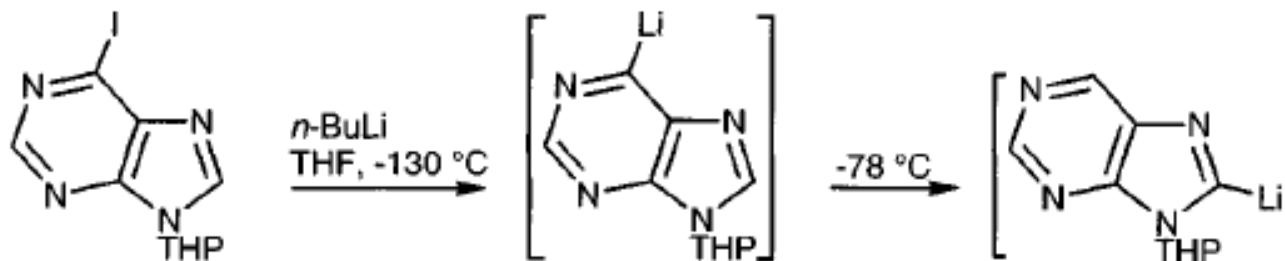
# Fémorganikus származékok

N-metallálás



a purin viszonylag könnyen deprotonálható

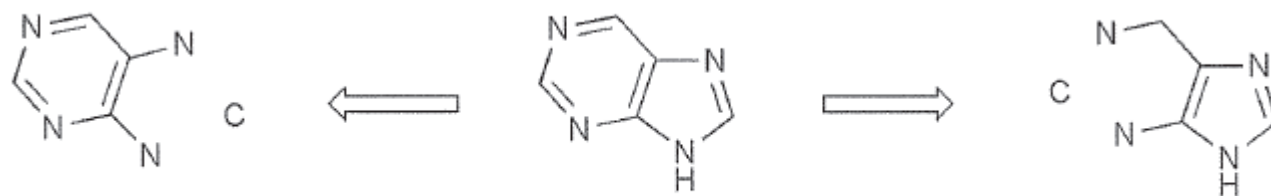
C-metallálás



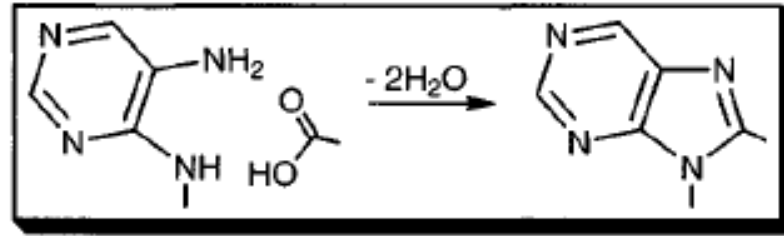
a 9-es pozíciót védeni kell

**Elektrociklusos reakciók – nem jellemzőek**

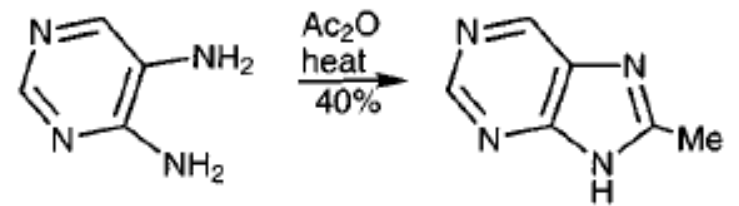
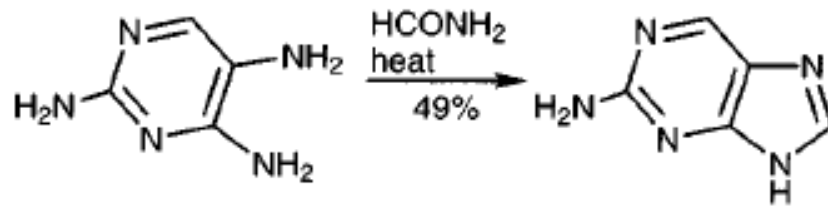
## A purinyűrű előállítása

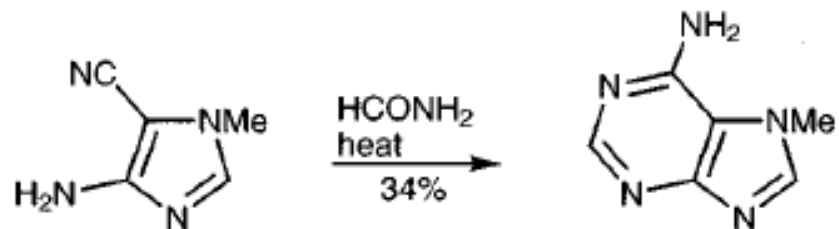
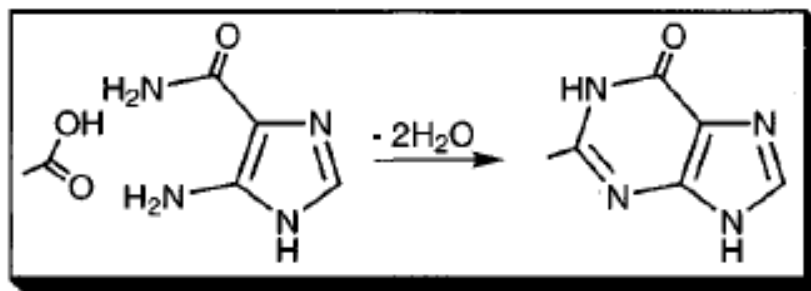


Principal disconnections for the ring synthesis of purines.

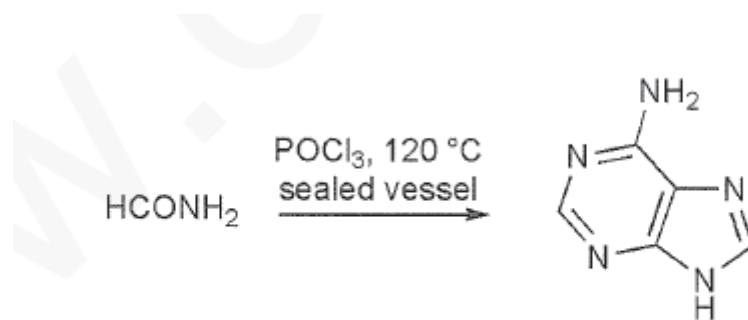


Traube szintézis





## Egylépéses szintézis



One-step synthesis of adenine.