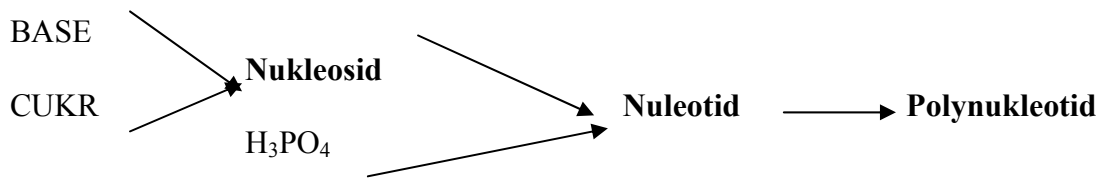


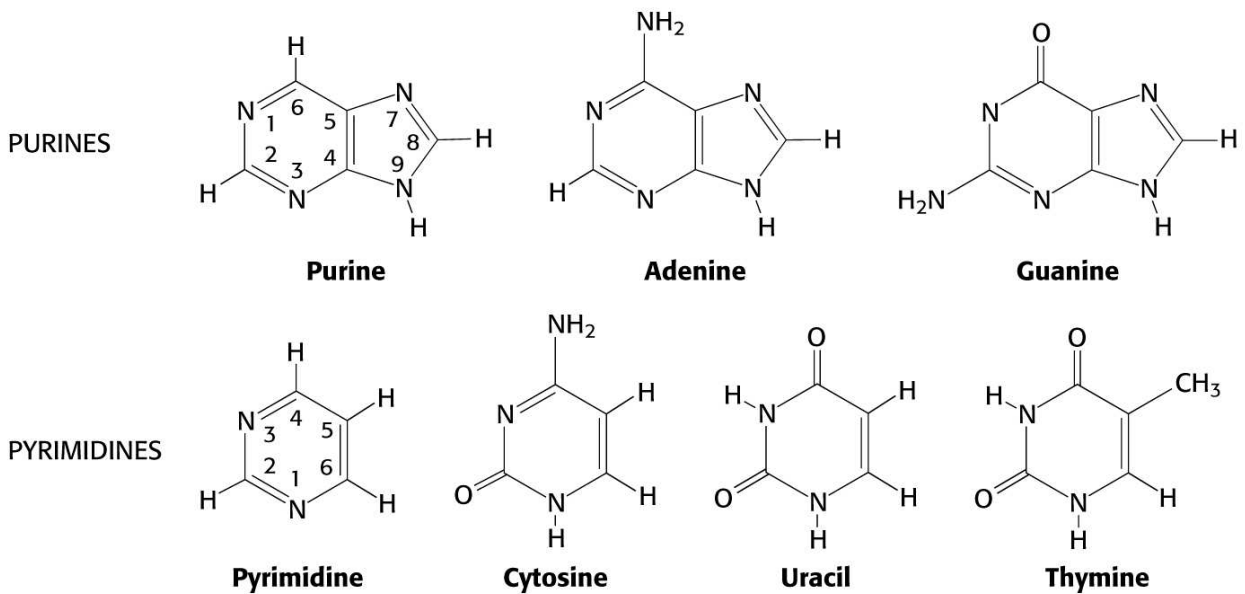
# 10. Nukleové kyseliny

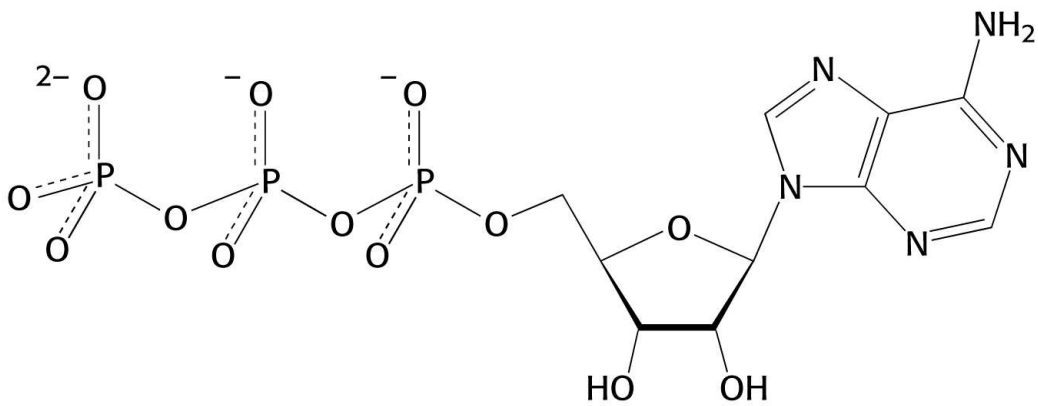
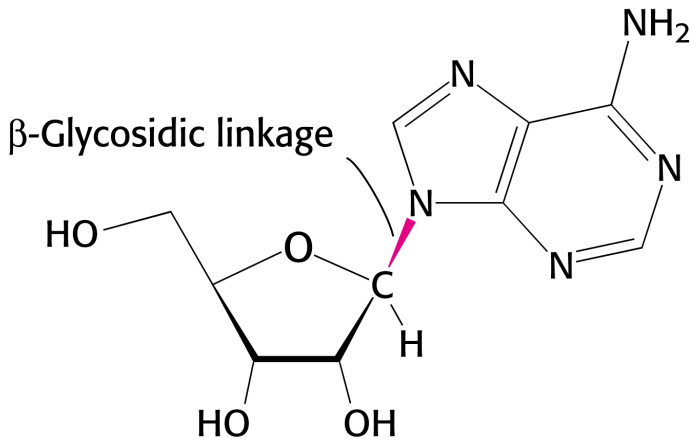
## Složení nukleových kyselin

- Dusíkaté báze – purinové, pyrimidinové
- Sacharid – ribosa, deoxyribosa
- $H_3PO_4$

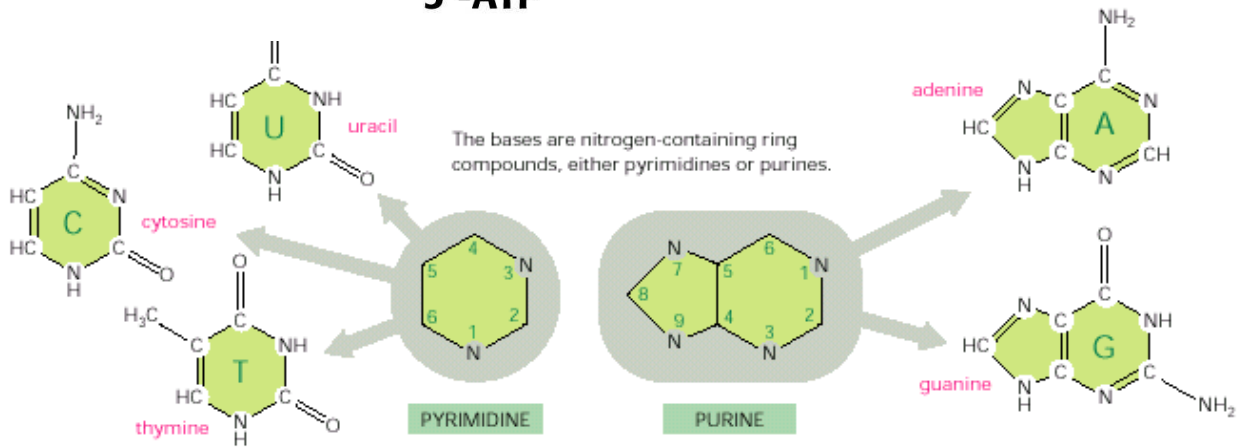


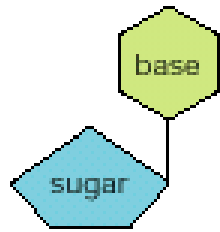
## BÁZE



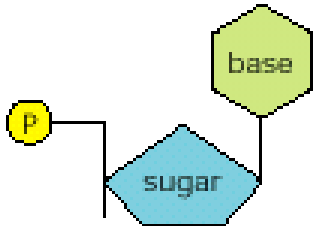


### 5'-ATP

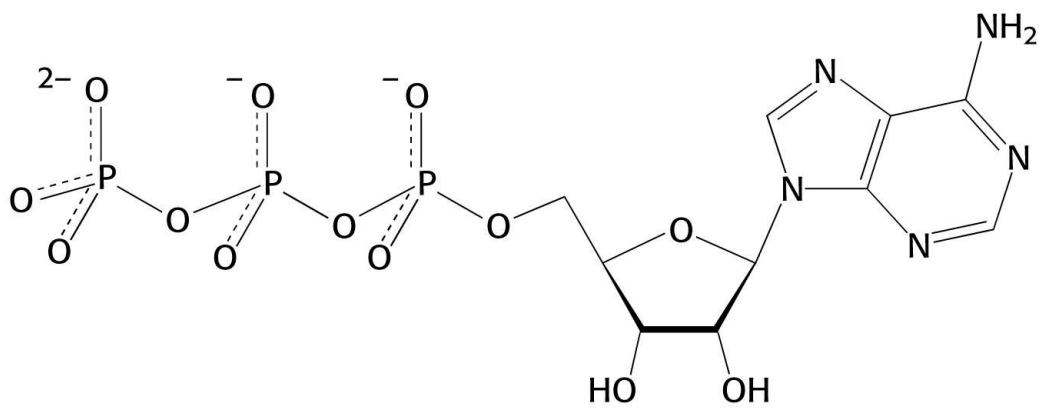




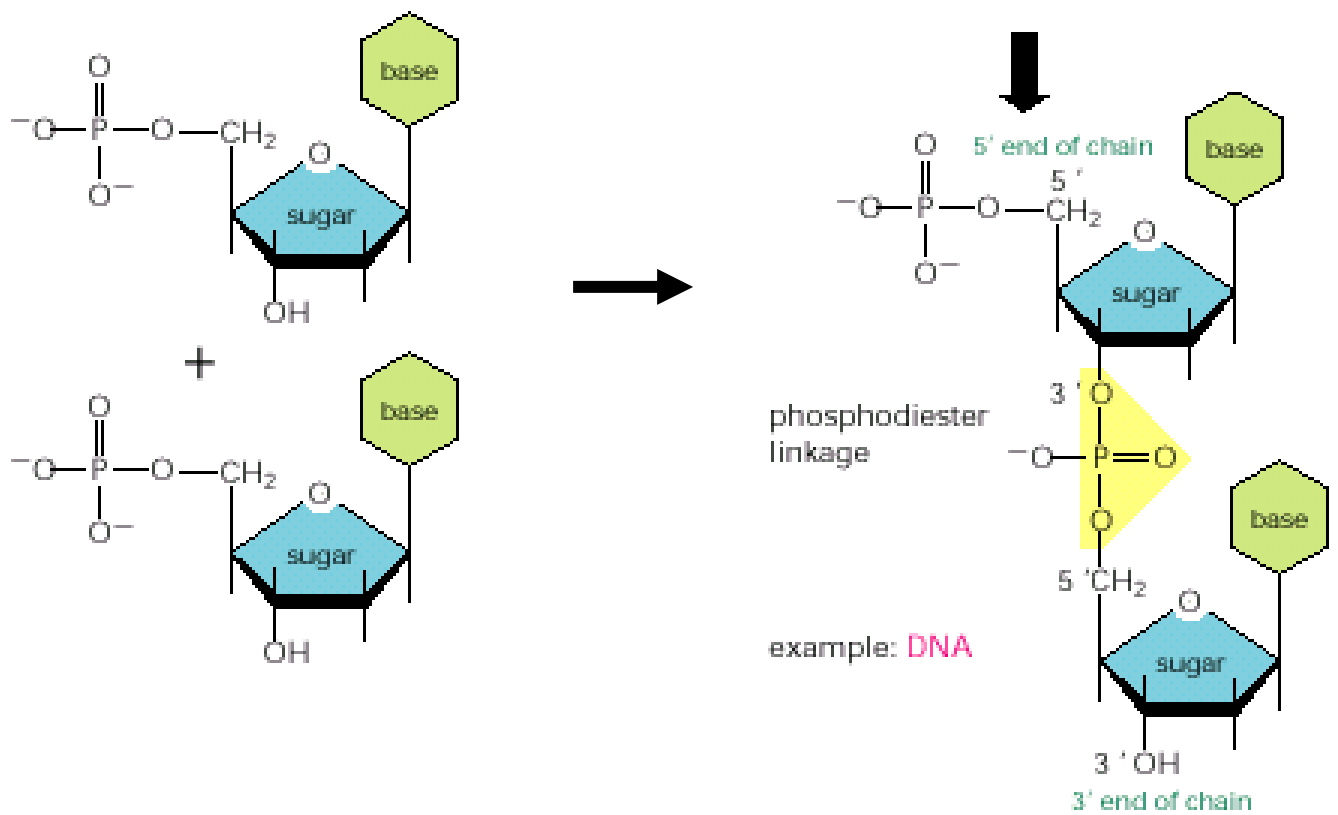
BASE + SUGAR = NUCLEOSIDE



BASE + SUGAR + PHOSPHATE = NUCLEOTIDE



**5'-ATP**



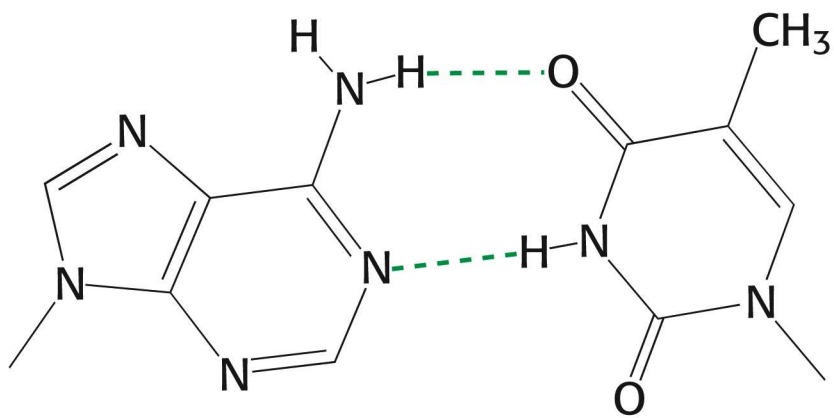
## STRUKTURNÍ ÚROVNĚ

Primární – sekvence

Sekundární

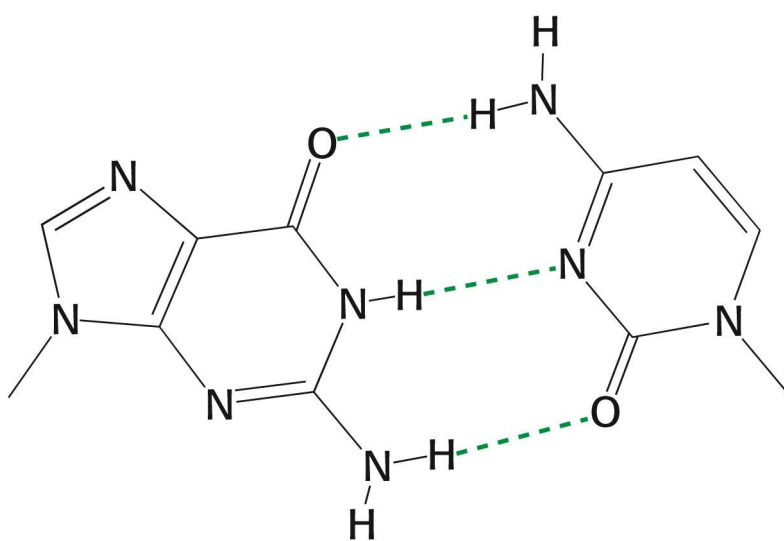
- Chragaffovy pravidla – poměr bazí v DNA  
 $A+G=T+C$   $A=T$   $G=C$   $A+C=G+T$
- Donohue – báze v tautomerních ketoformách
- Franklinová – RTG difrakční analýza

Watson, Crick (1953) – dvojšroubovice



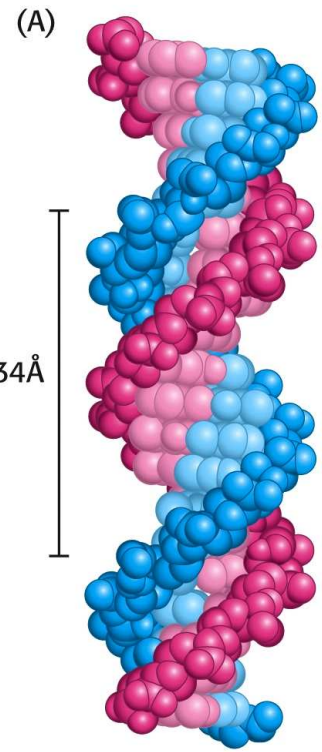
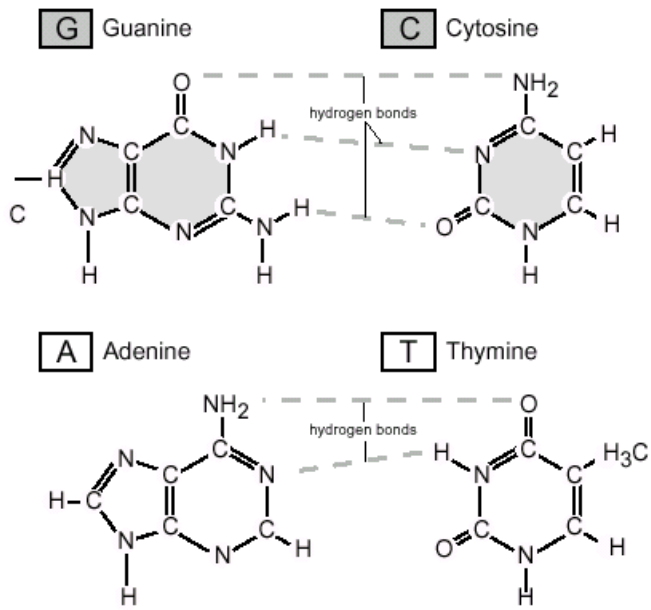
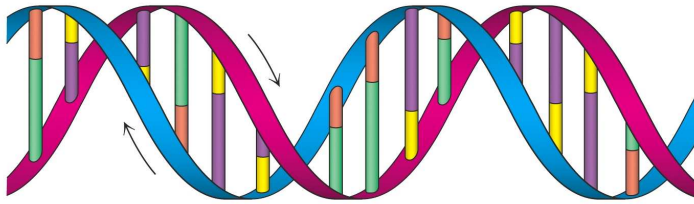
**Adenine (A)**

**Thymine (T)**

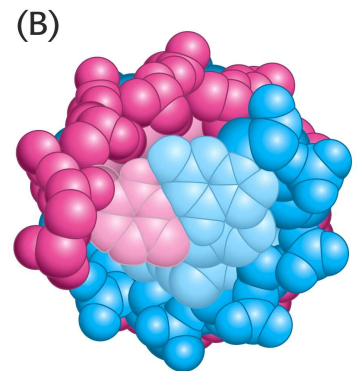


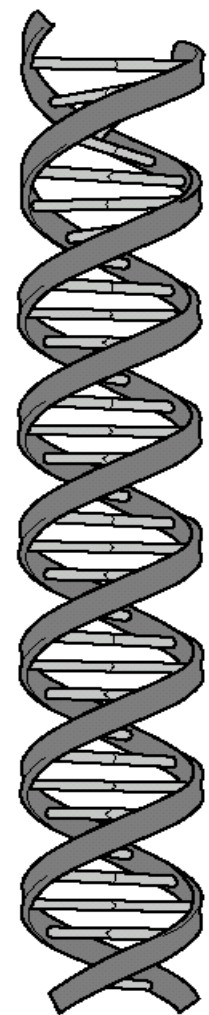
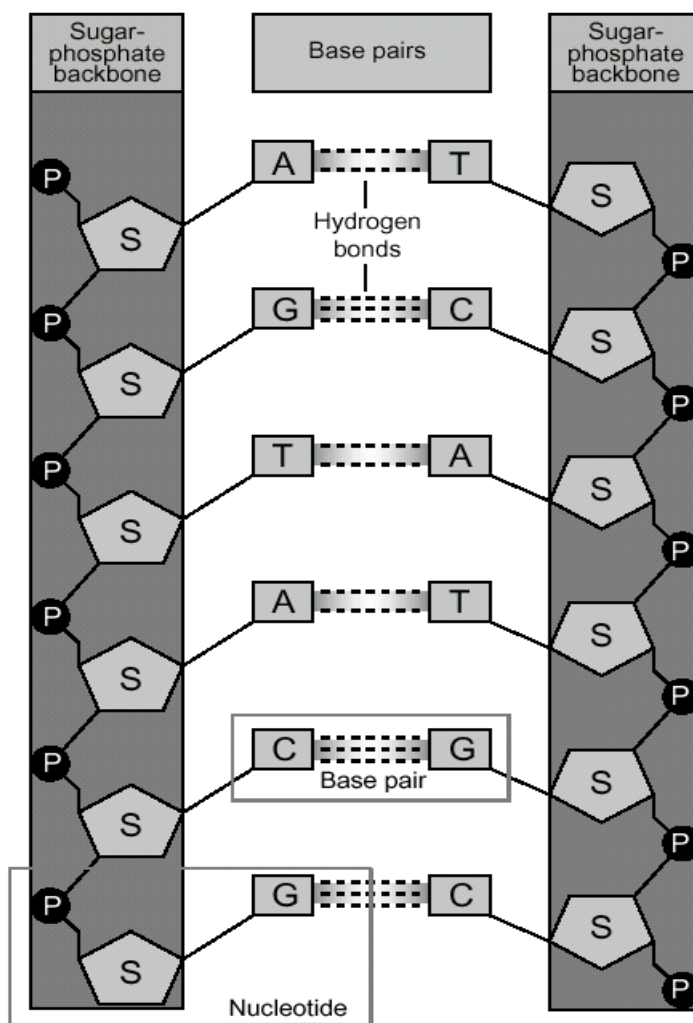
**Guanine (G)**

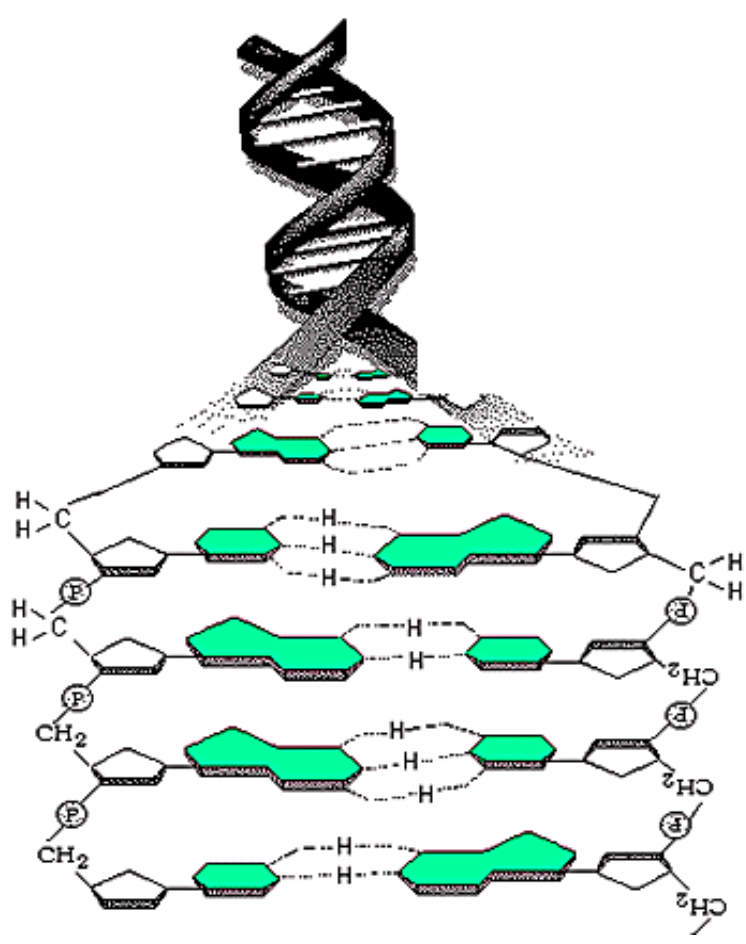
**Cytosine (C)**



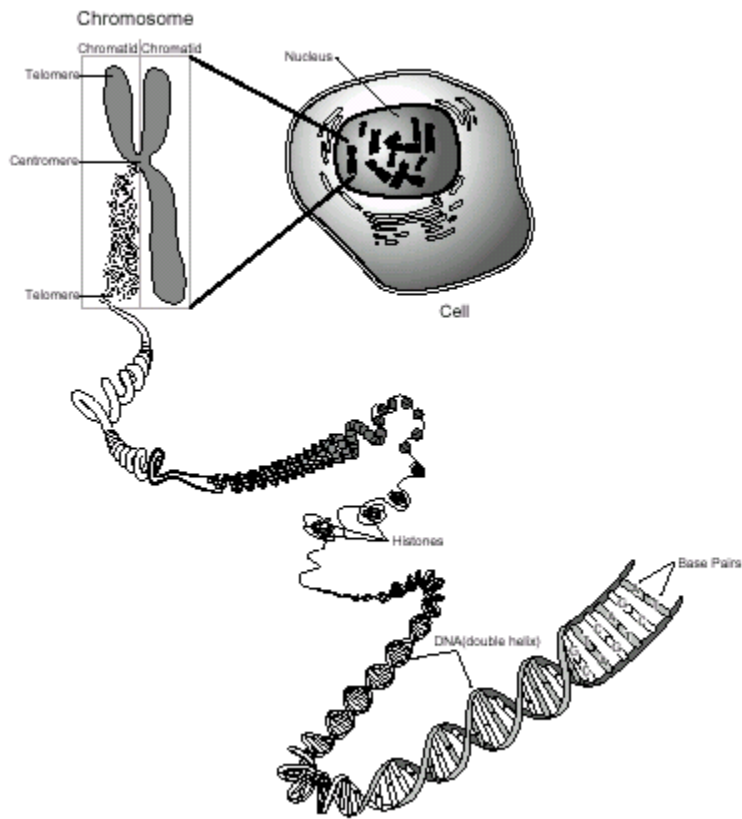
Prostorový model DNA – pohled z boku (A) a shora (B)



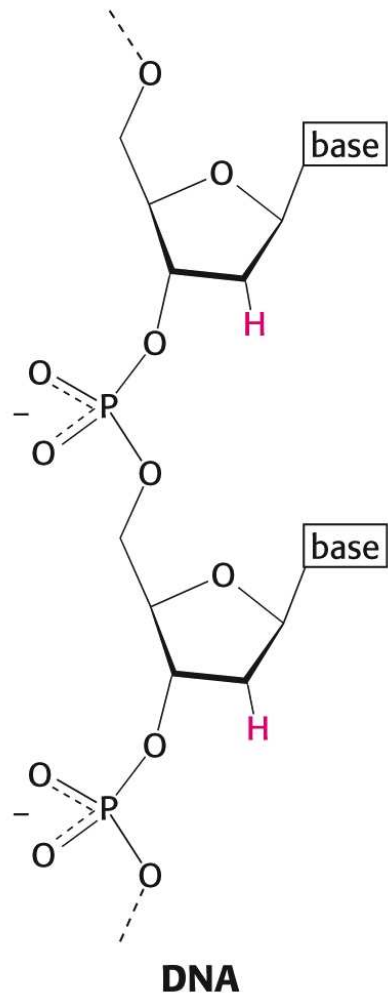
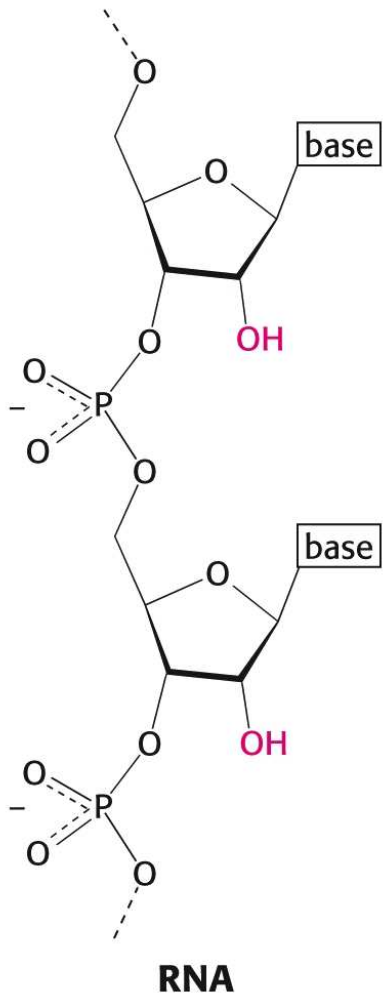


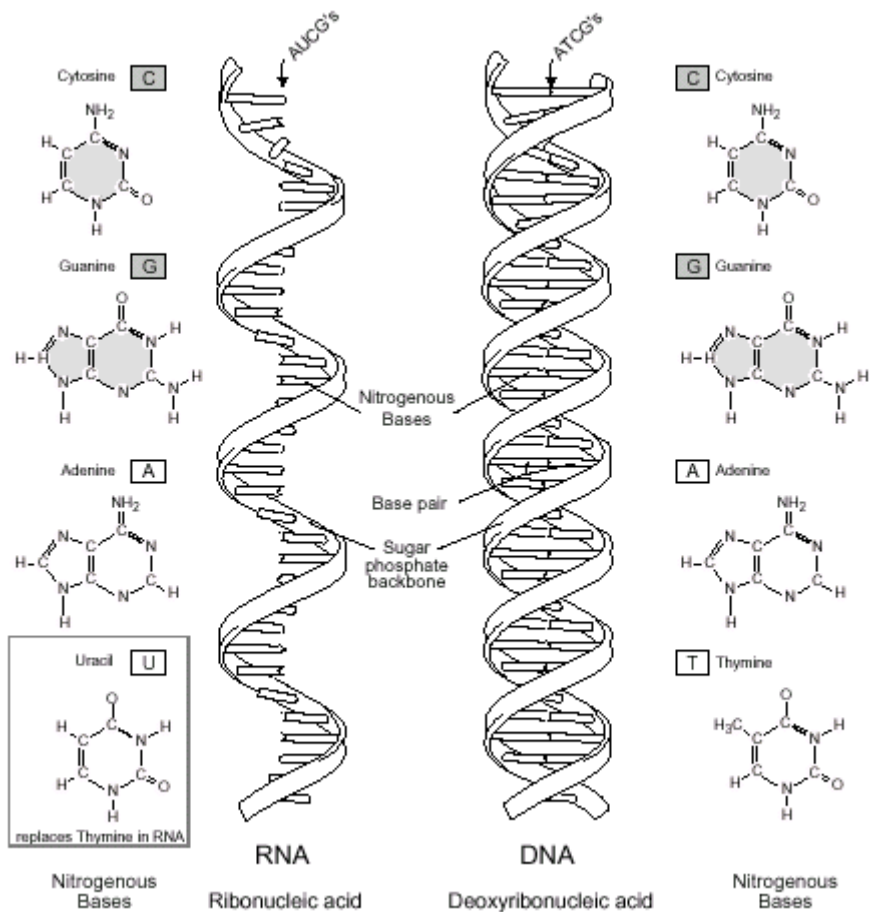






RNA



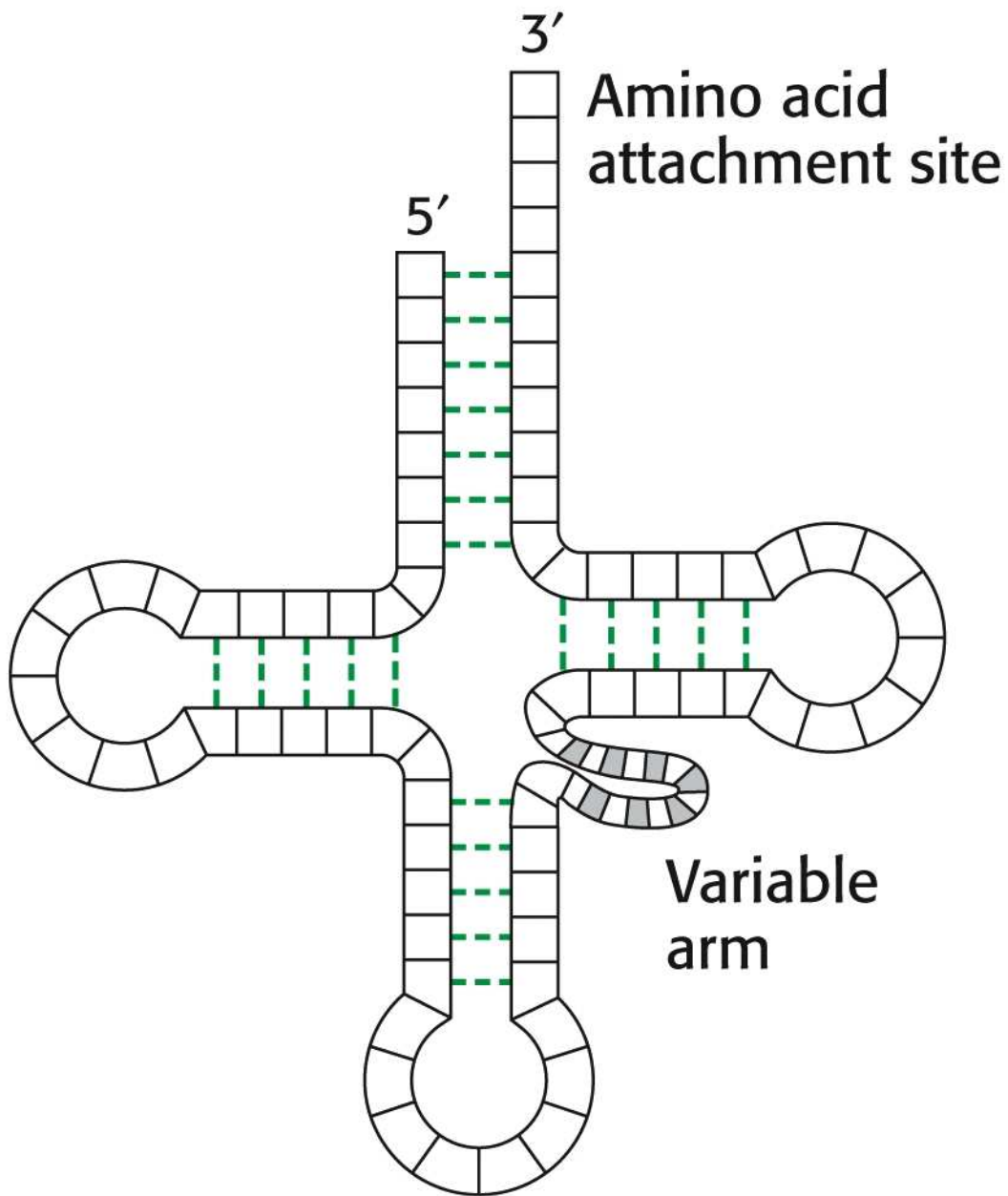


## Formy RNA

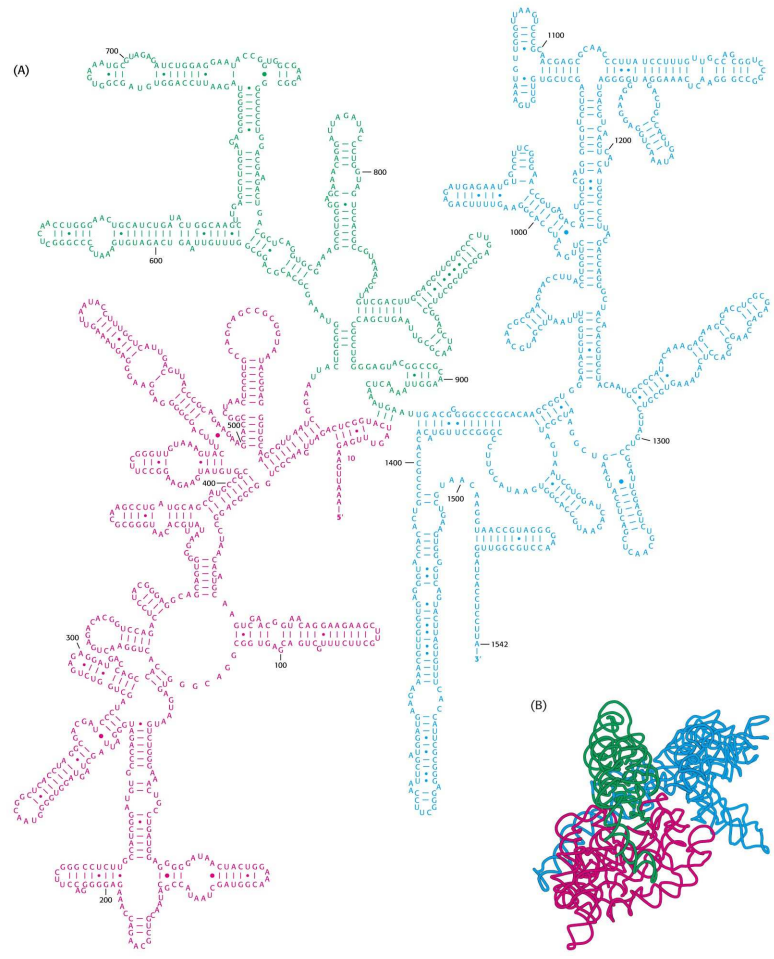
- mRNA – mediátorová, messenger, - informační – 5-10 %
- RNA – ribosomální – 80 %
- tRNA – transferová, přenosová – 10-15 %  
60 tRNA

**TABLE 5.2** RNA molecules in *E. coli*

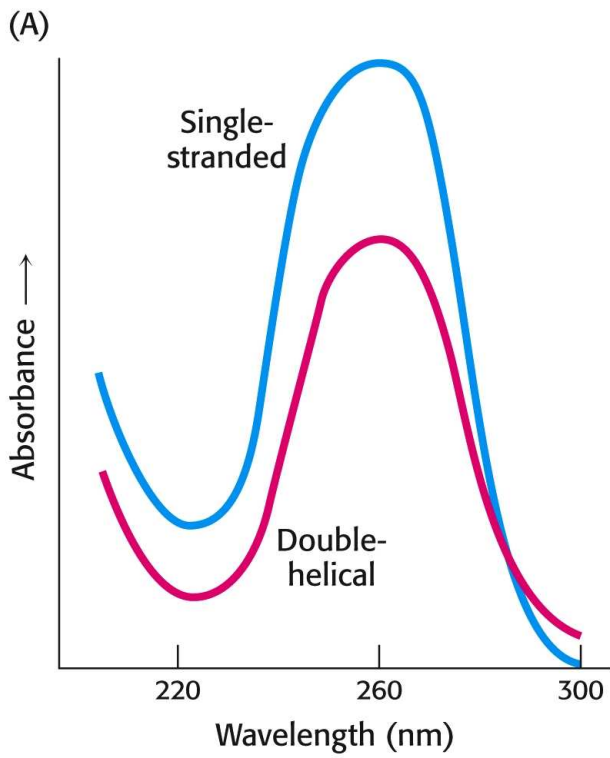
Type	Relative amount (%)	Sedimentation coefficient (S)	Mass (kd)	Number of nucleotides
Ribosomal RNA (rRNA)	80	23	$1.2 \times 10^3$	3700
		16	$0.55 \times 10^3$	1700
		5	$3.6 \times 10^1$	120
Transfer RNA (tRNA)	15	4	$2.5 \times 10^1$	75
Messenger RNA (mRNA)	5		Heterogeneous	



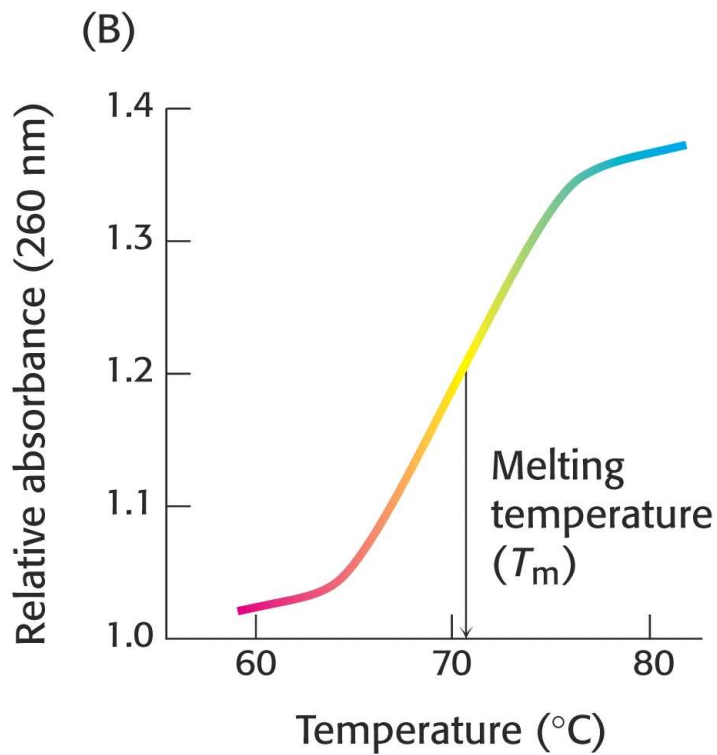
tRNA – jetelový list



rRNA



**Absorpční spektrum DNA**



**„Denaturace DNA“**



