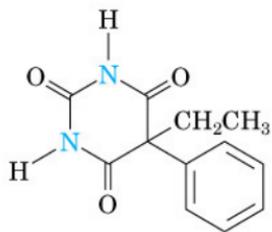


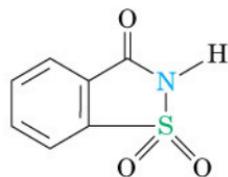
**Penicillina G**

antibiotico



**Fenobarbitale**

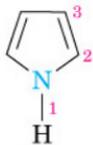
sedativo



**Saccarina**

edulcorante

Eterocicli insaturi a 5 termini



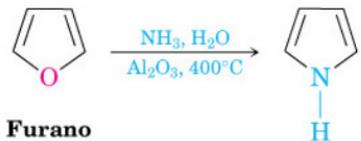
**Pirrolo**



**Furano**



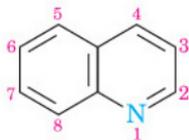
**Tiofene**



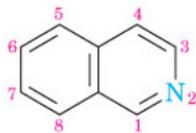
**Furano**

**Pirrolo**

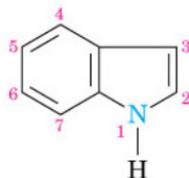
## Eterocicli ad anelli condensati



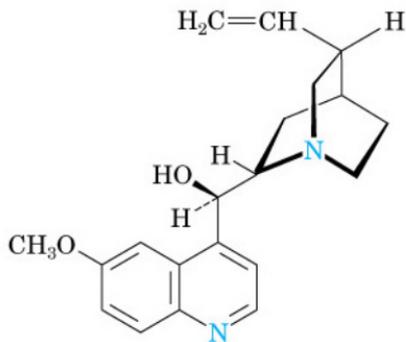
**Chinolina**



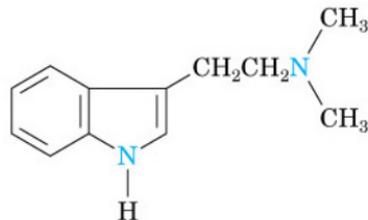
**Isochinolina**



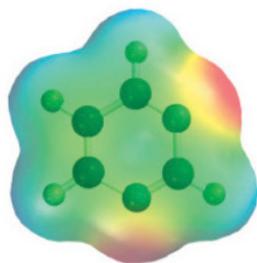
**Indolo**



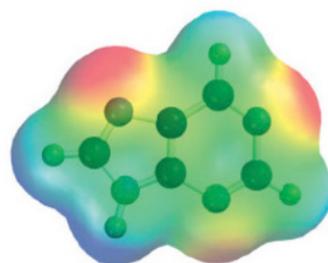
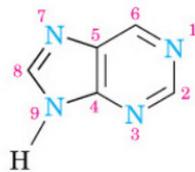
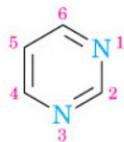
**Chinino, un farmaco antimalarico  
(alcaloide chinolinico)**



**N,N-Dimetiltriptamina, un allucinogeno  
(alcaloide indolico)**



**Pirimidina**

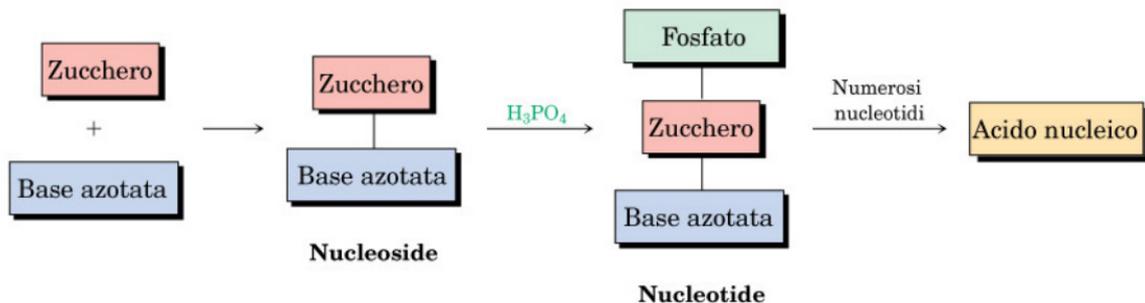


**Purina**

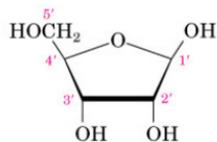
## Acidi nucleici

acido deossiribonucleico (DNA) e acido ribonucleico (RNA) sono i portatori chimici dell'informazione genetica della cellula ovvero l'informazione che determina la natura, crescita e divisione della cellula, biosintesi di proteine ed enzimi, ...

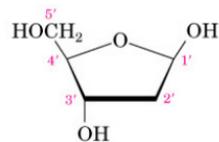
Si tratta di biopolimeri formati da nucleotidi



Gli zuccheri: aldopentosi

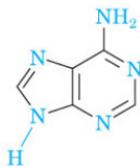


**Ribosio**

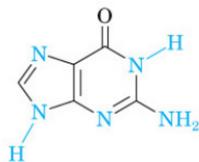


**2'-Deossiribosio**

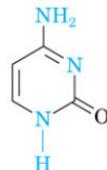
Le basi azotate: purine sostituite ...



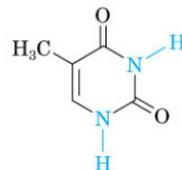
**Adenina (A)**  
DNA  
RNA



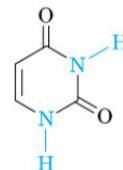
**Guanina (G)**  
DNA  
RNA



**Citosina (C)**  
DNA  
RNA



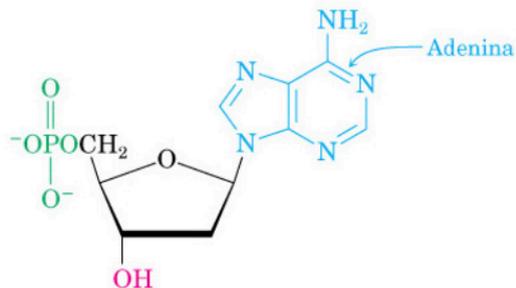
**Timina (T)**  
DNA



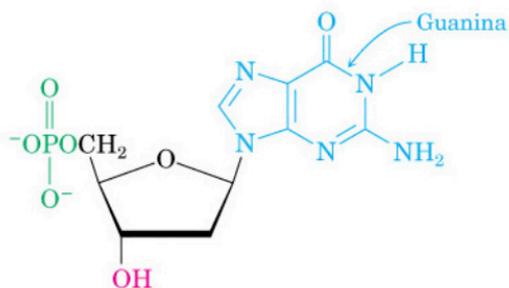
**Uracile (U)**  
RNA

e pirimidine sostituite

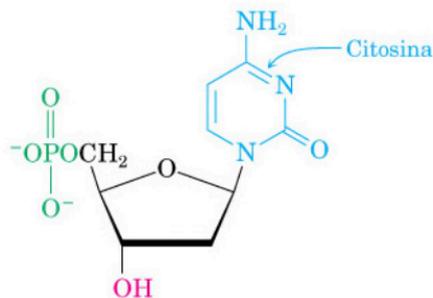
**Deossiribonucleotidi**



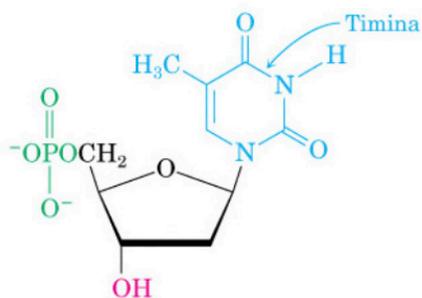
**2'-Deossiadenosina 5'-fosfato**



**2'-Deossiguanosina 5'-fosfato**

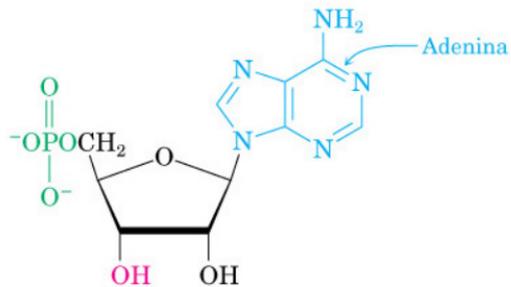


**2'-Deossicitidina 5'-fosfato**

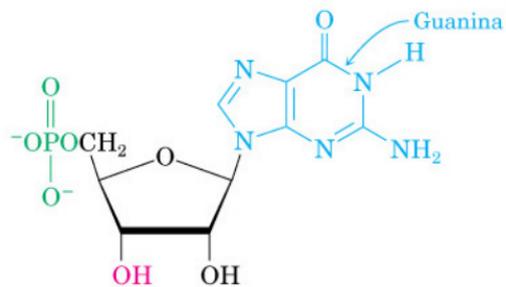


**2'-Deossitimidina 5'-fosfato**

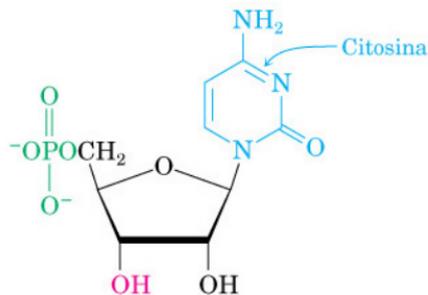
## Ribonucleotidi



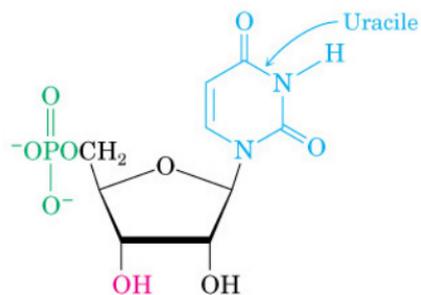
**Adenosina 5'-fosfato**



**Guanosina 5'-fosfato**

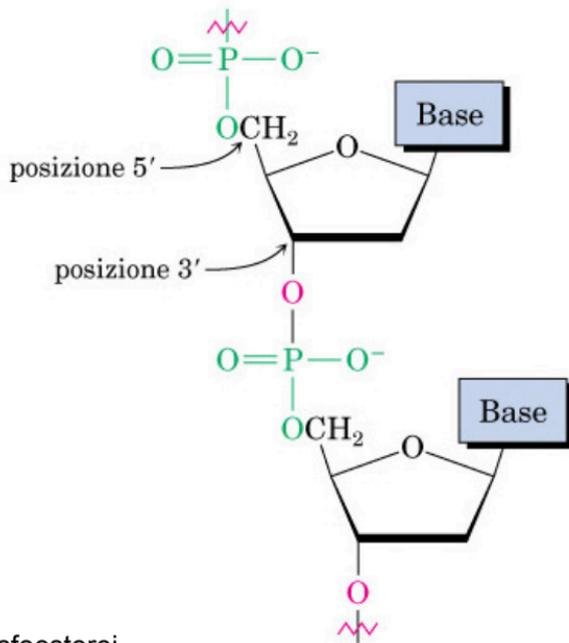
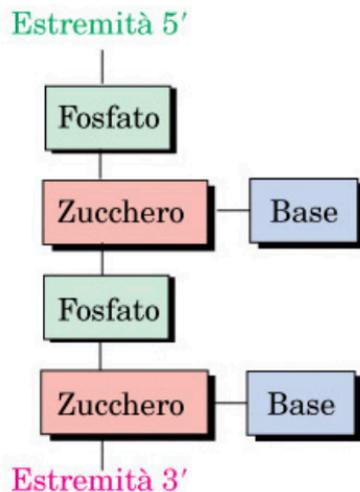


**Citidina 5'-fosfato**



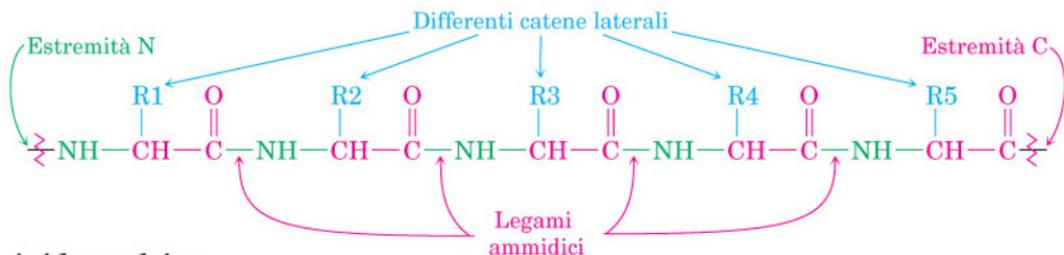
**Uridina 5'-fosfato**

Struttura generale del DNA.

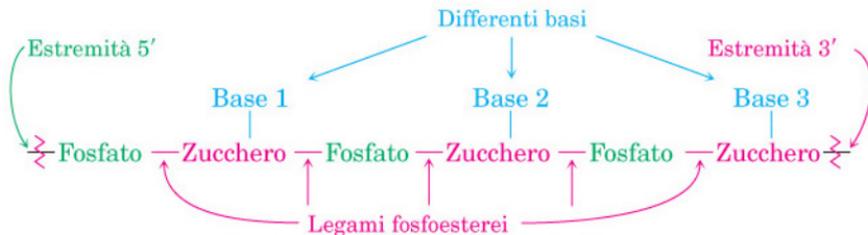


I nucleotidi si legano attraverso legami fosfoesterei

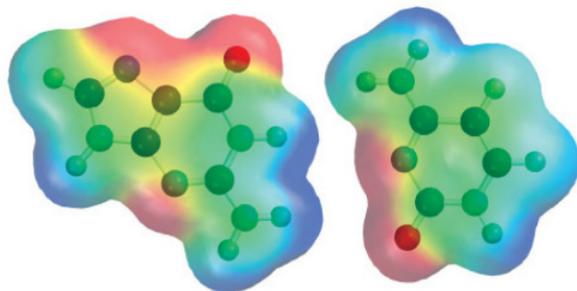
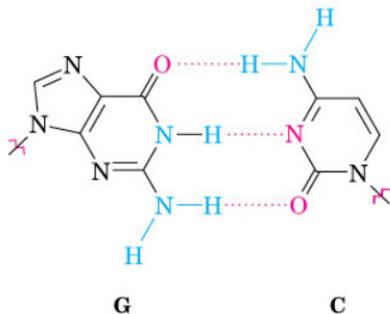
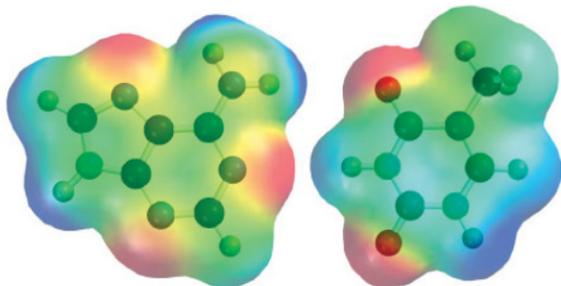
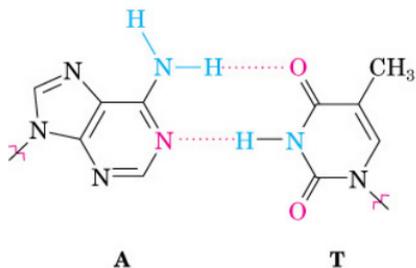
## Proteina



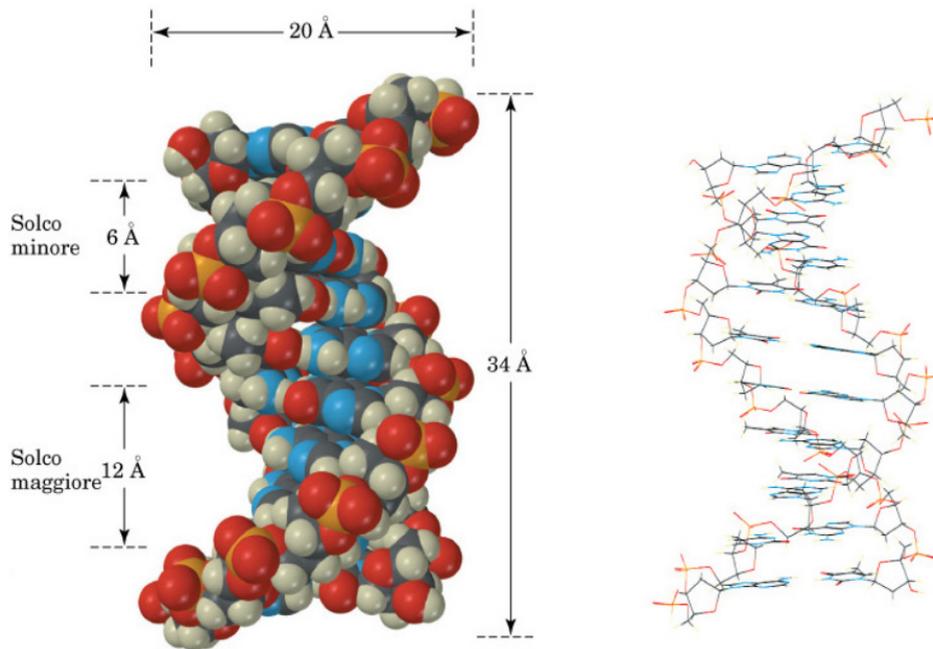
## Acido nucleico



Il legame a idrogeno tra le coppie di basi nella doppia elica del DNA. Le mappe di potenziale elettrostatico mostrano che le facce delle basi sono relativamente neutre (verdi) mentre i bordi hanno regioni positive (blu) e negative (rosso). L'accoppiamento di G con C e di A con T tiene assieme regioni con carica opposta.

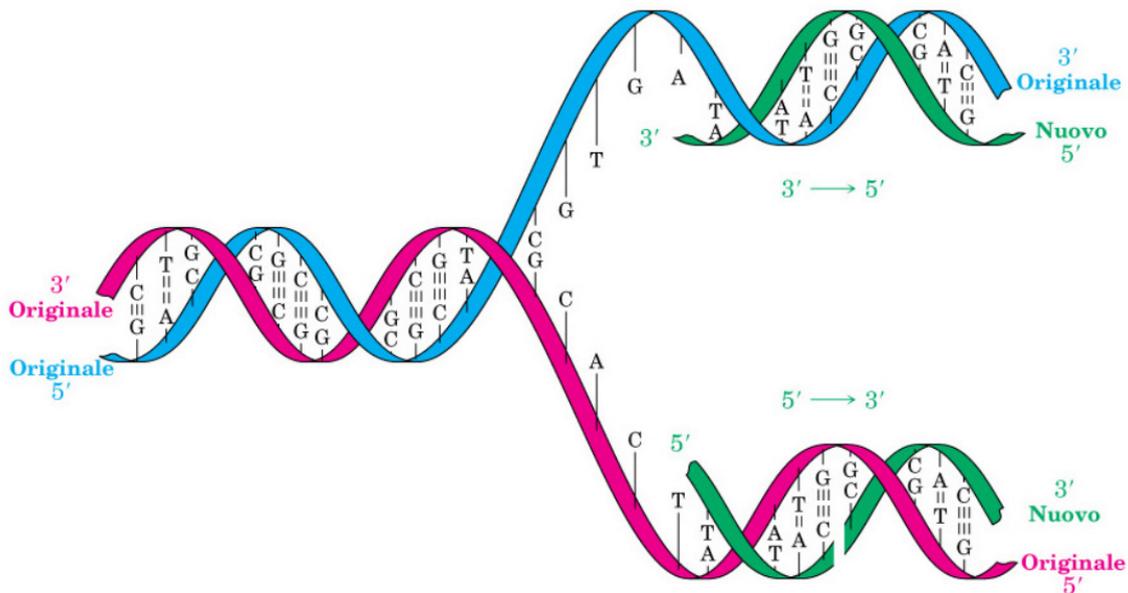


Un giro (360°) della doppia elica del DNA rappresentato nel formato space-filling e a bastoncino. Lo scheletro fosfocuccherino corre lungo la parte esterna dell'elica e le basi azotate si legano l'una all'altra nella parte interna. Sono visibili il solco maggiore e minore.

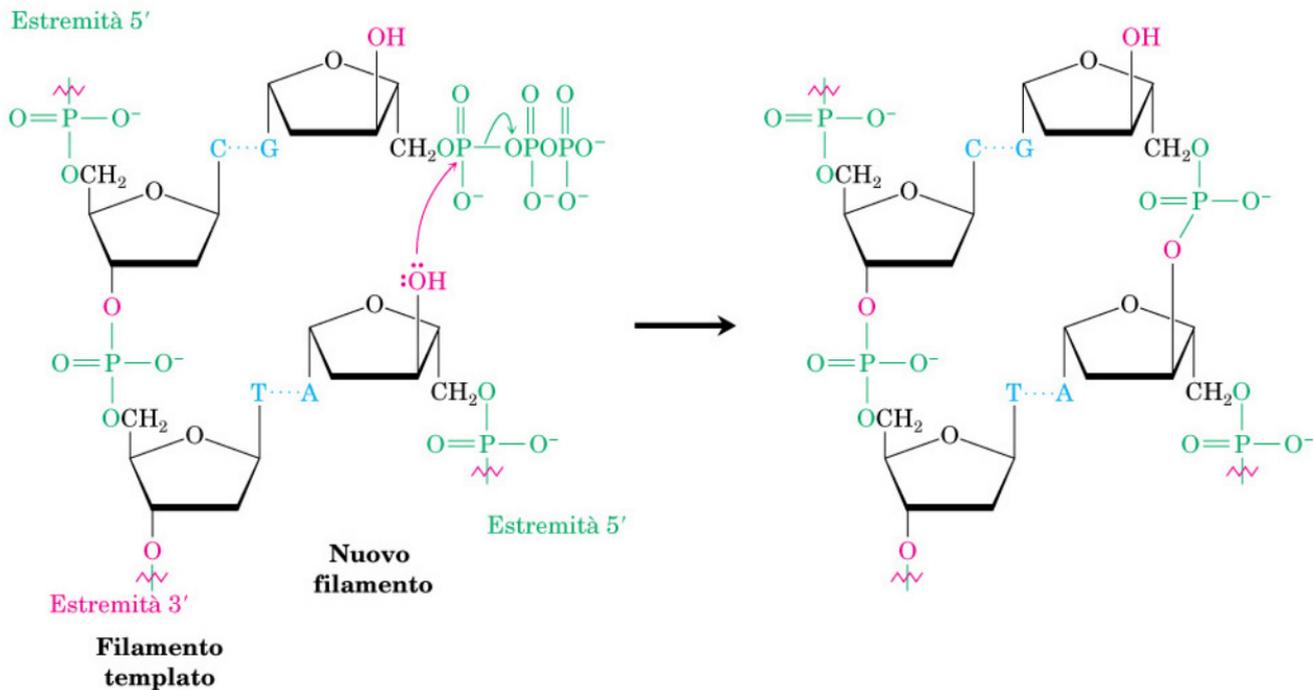


Molecole aromatiche policicliche planari possono inserirsi tra le basi impilate, p.es. agenti cancerogeni

Rappresentazione della **replicazione** del DNA. Il DNA a doppio filamento si svolge parzialmente, le basi vengono esposte, i nucleotidi si allineano su ciascun filamento in modo complementare e due nuovi filamenti cominciano a crescere. Entrambi i filamenti sono sintetizzati nella medesima direzione  $5' > 3'$ .

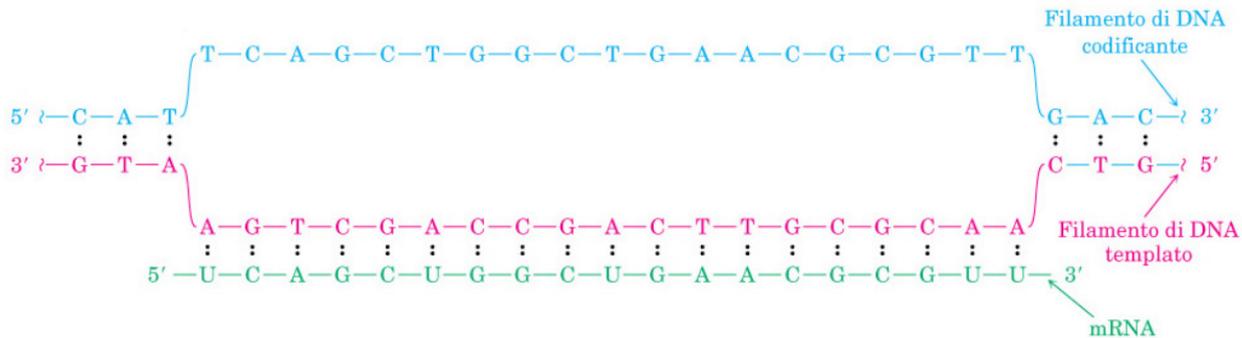


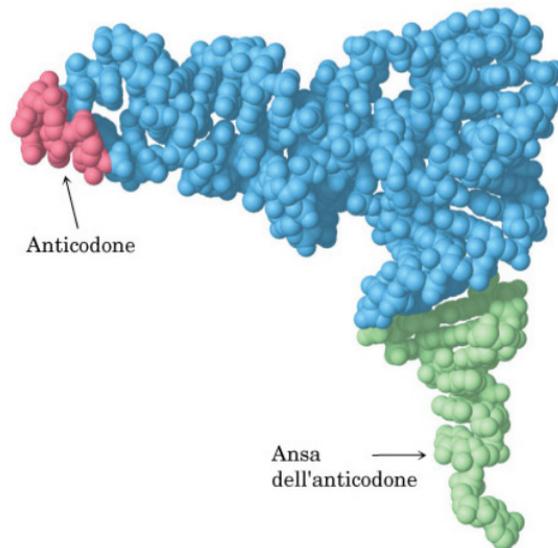
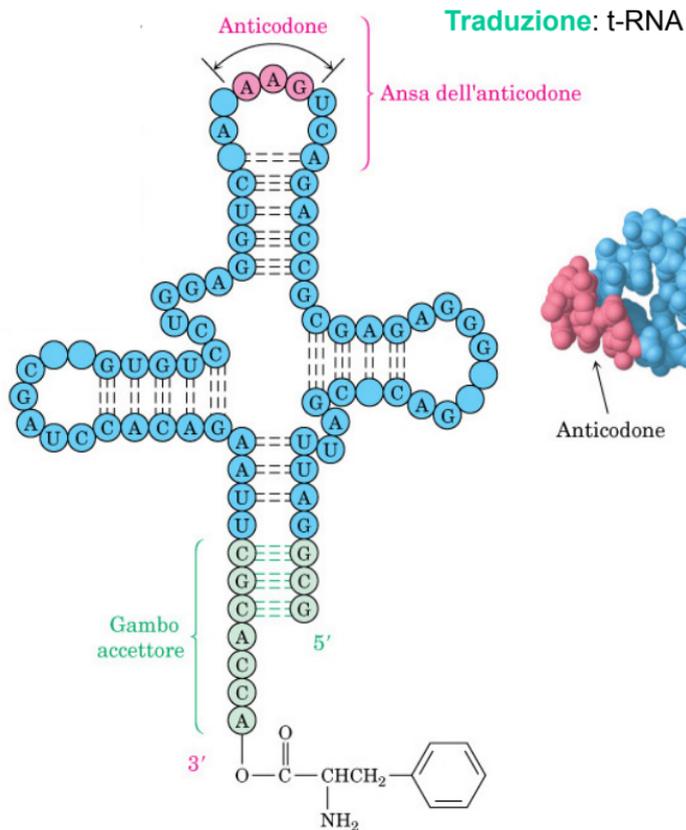
## Acidi nucleici



### trascrizione

La biosintesi dell'RNA su un segmento di DNA che funge da stampo.





Rappresentazione schematica della biosintesi delle proteine. Le sequenze di basi del codone sull'mRNA vengono lette dai tRNA con la sequenza di basi dell'anticodone complementare. Gli RNA di trasferimento riuniscono i giusti amminoacidi nella posizione idonea per l'incorporazione nel peptide in accrescimento.

