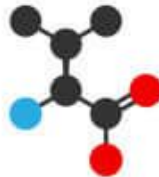




glycine (Gly, G)



L-alanine (Ala, A)



L-valine (Val, V)



L-leucine (Leu, L)



L-isoleucine (Ile, I)



L-serine (Ser, S)



L-threonine (Thr, T)



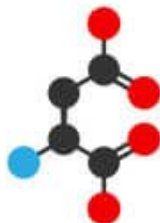
L-cysteine (Cys, C)



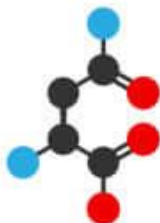
L-methionine (Met, M)



L-proline (Pro, P)



L-aspartic acid (Asp, D)



L-asparagine (Asn, N)



L-glutamic acid (Glu, E)



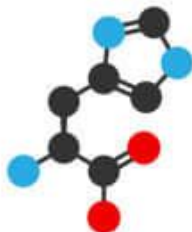
L-glutamine (Gln, Q)



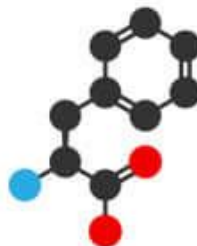
L-lysine (Lys, K)



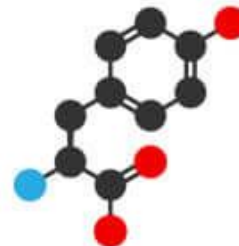
L-arginine (Arg, R)



L-histidine (His, H)



L-phenylalanine (Phe, F)

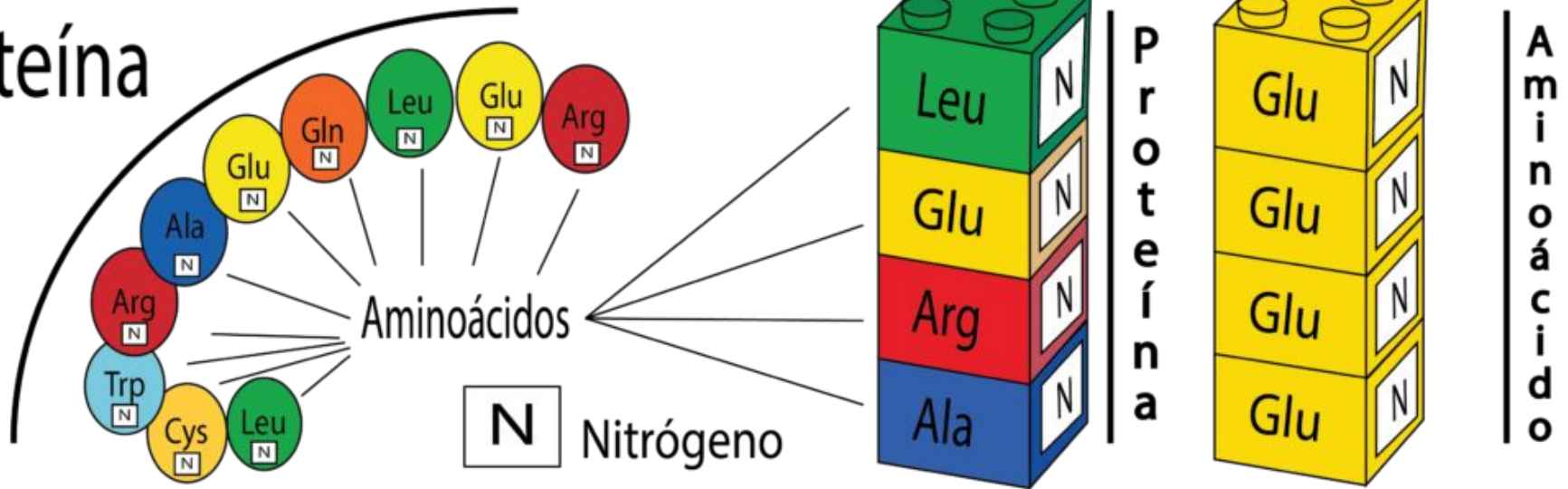


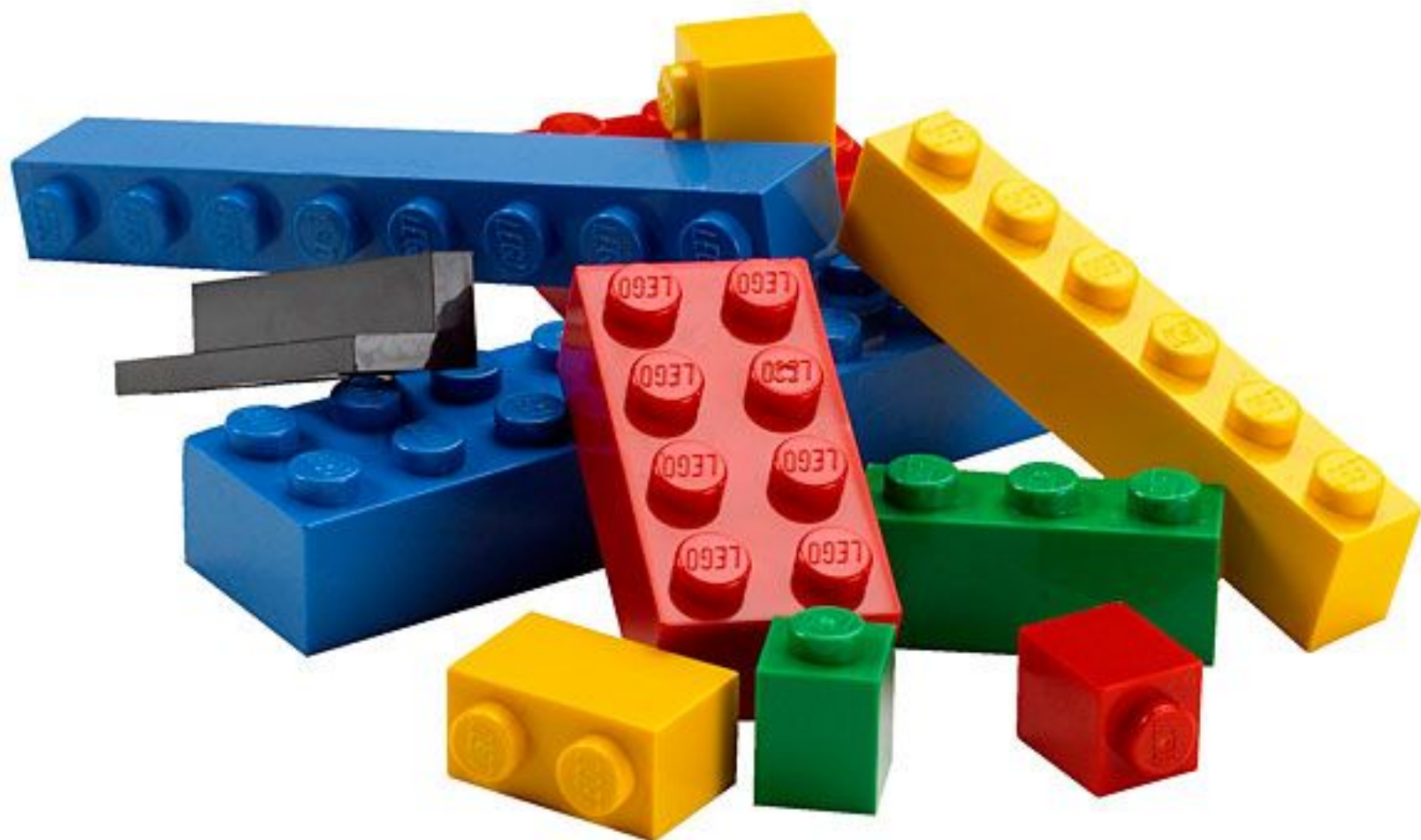
L-tyrosine (Tyr, Y)



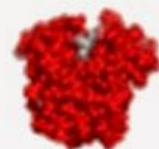
L-tryptophan (Trp, W)

Proteína





Canal
de potasio

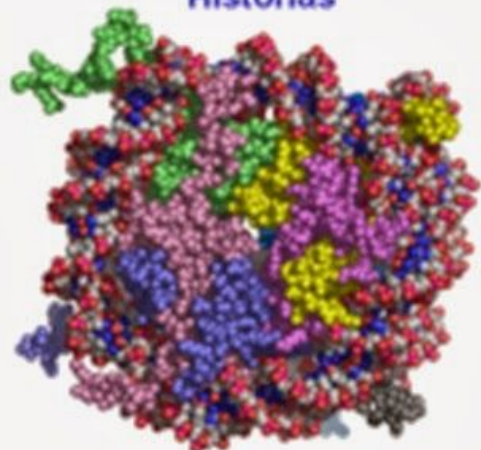


Mioglobina

Colágeno



Histonas



Transporte

Estructura

Albúmina



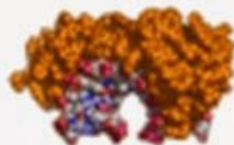
Insulina



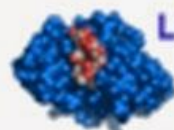
**Regulación
y
Señalización**

Catálisis

Factor de transcripción

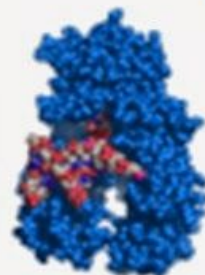


Lisozima

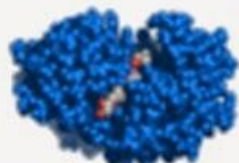


Movimiento

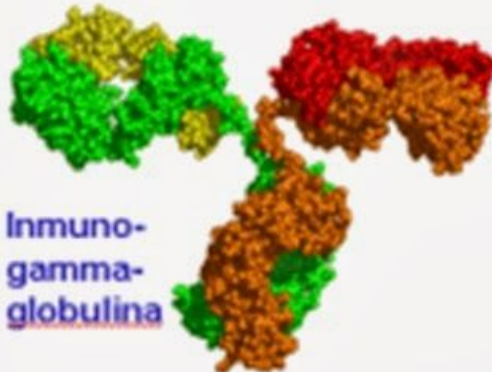
Polimerasa
de DNA



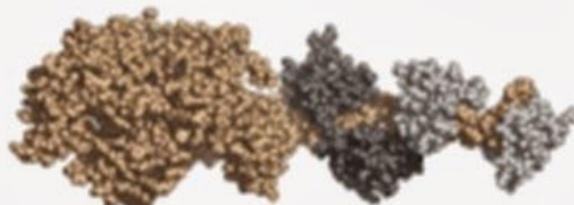
Pepsina



Inmuno-
gamma-
globulina



Miosina



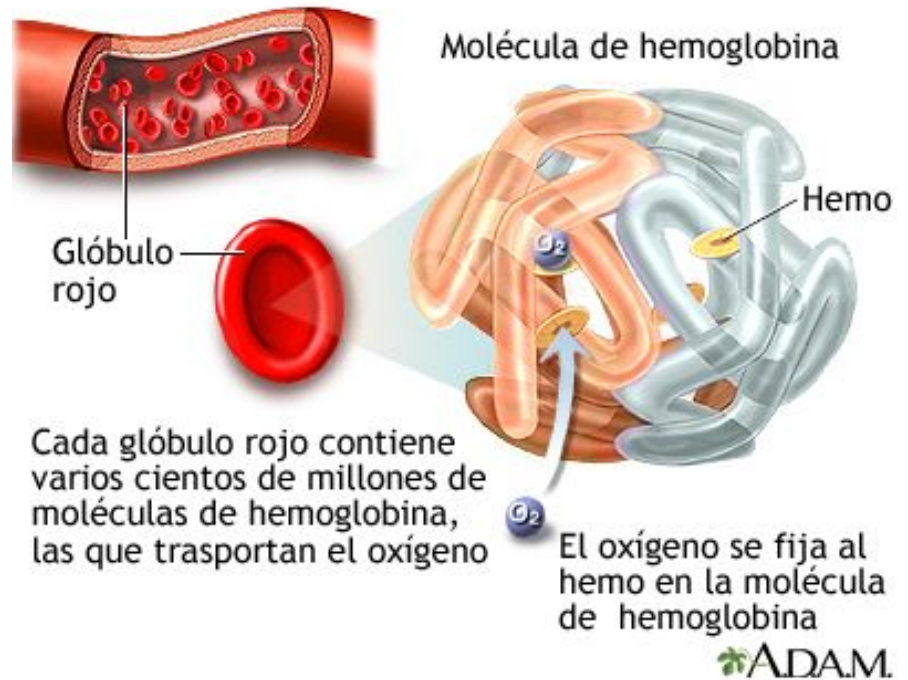
Proteínas



Funcións das Proteínas

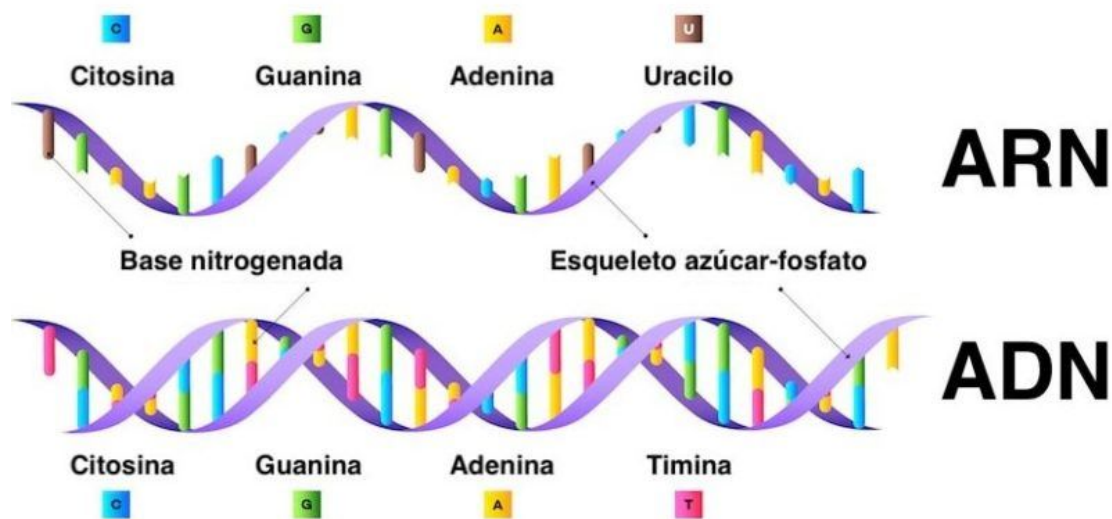
Transportadora:

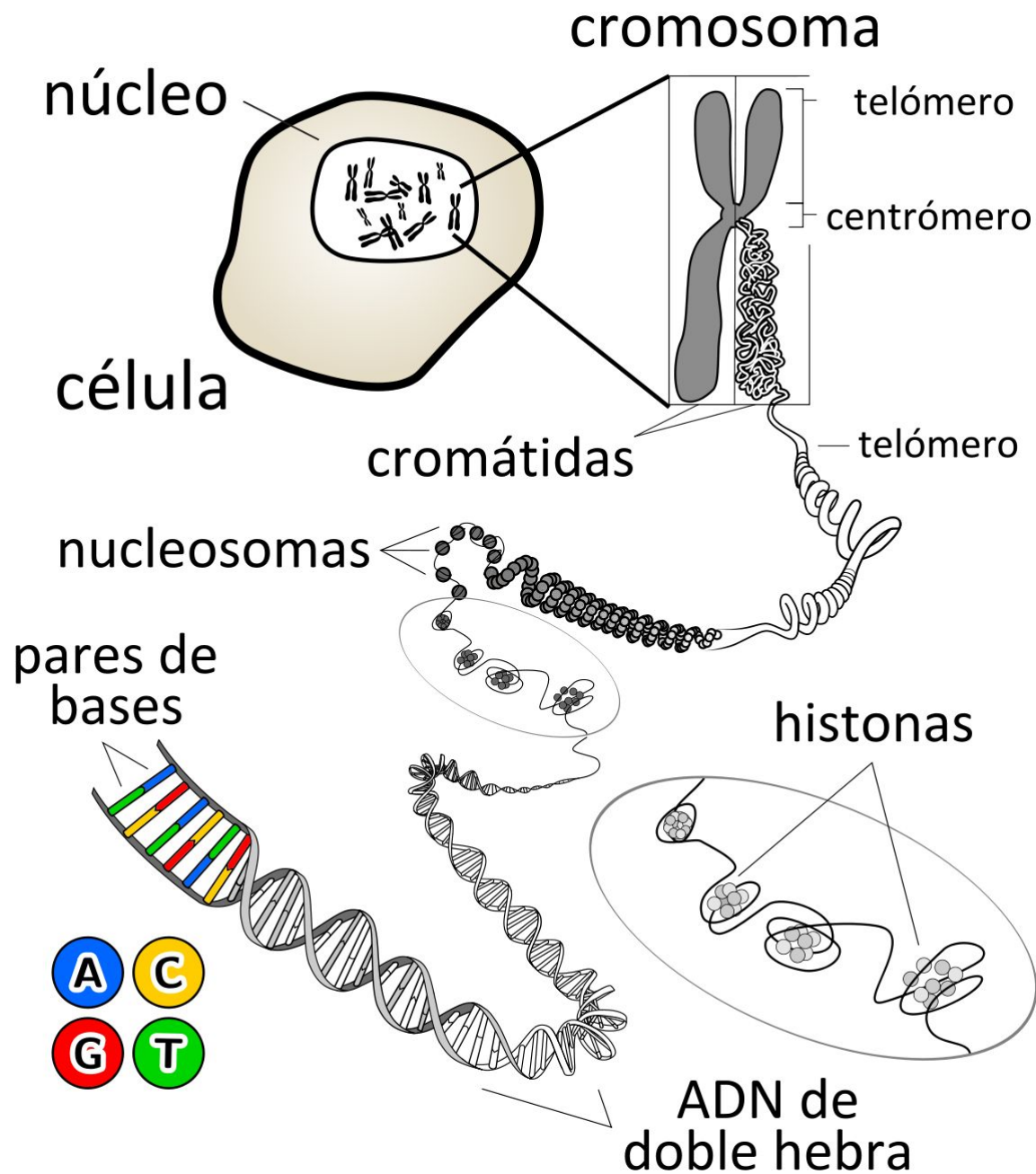
Por exemplo a hemoglobina que transporta o osíxeno

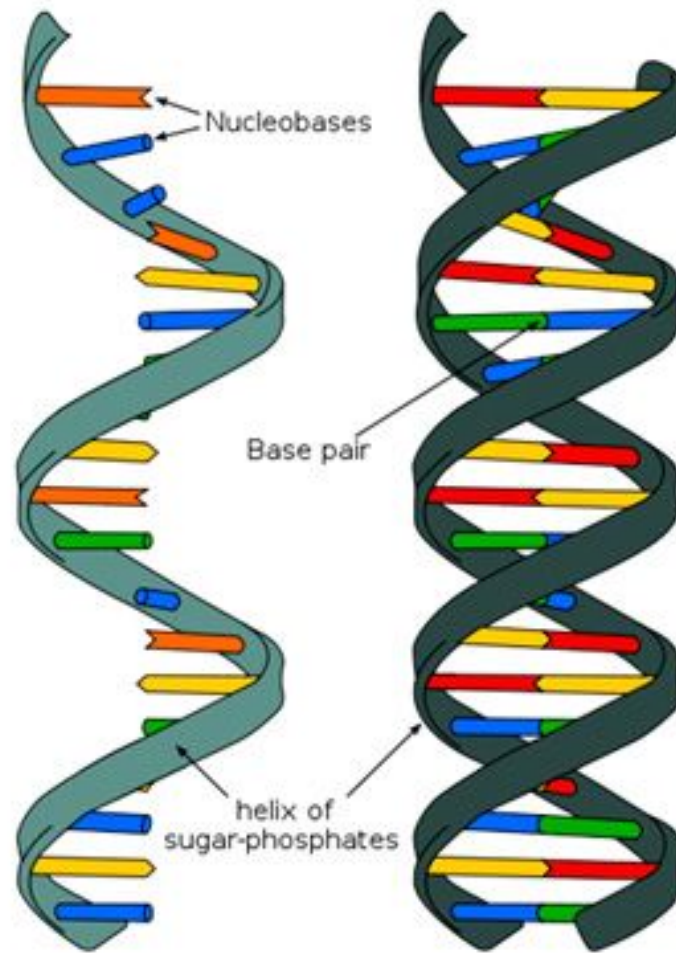
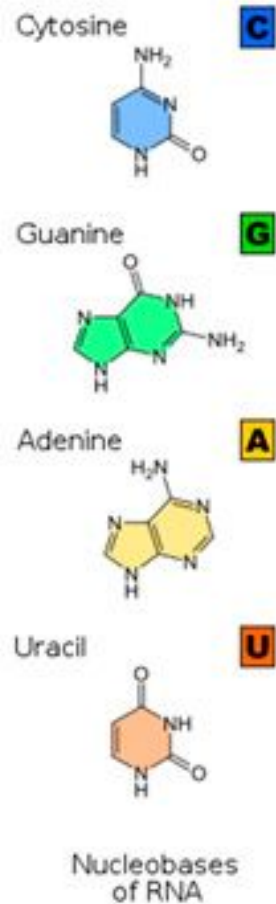


Ácidos nucleicos: ADN e ARN

- Son as moléculas responsables da reprodución e a herdanza.
- Gardan a información xenética grazas a un código de 4 letras.
- Encóntranse en todas as células dos seres vivos.

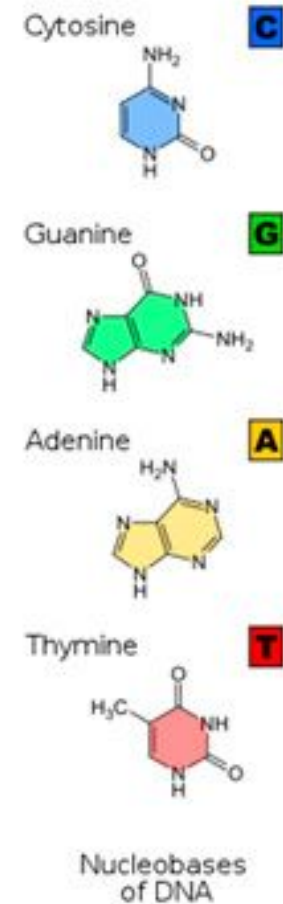


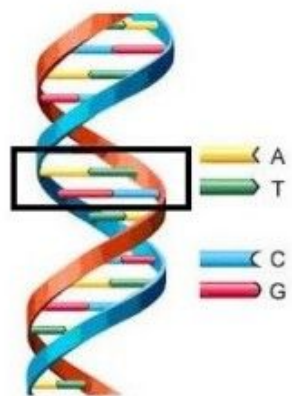




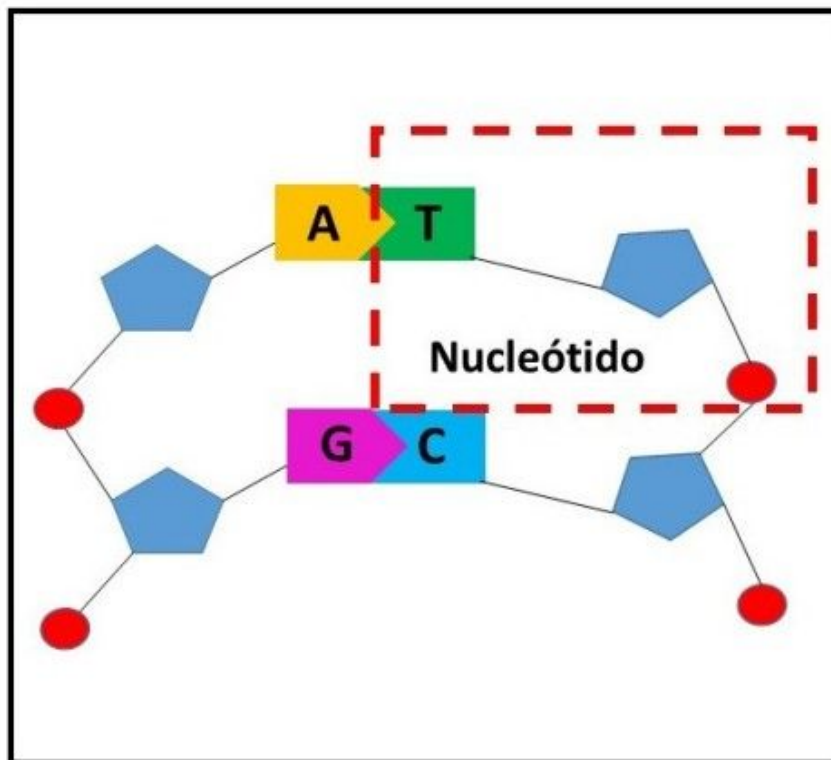
RNA
Ribonucleic acid

DNA
Deoxyribonucleic acid





ADN



 **Pentosa**

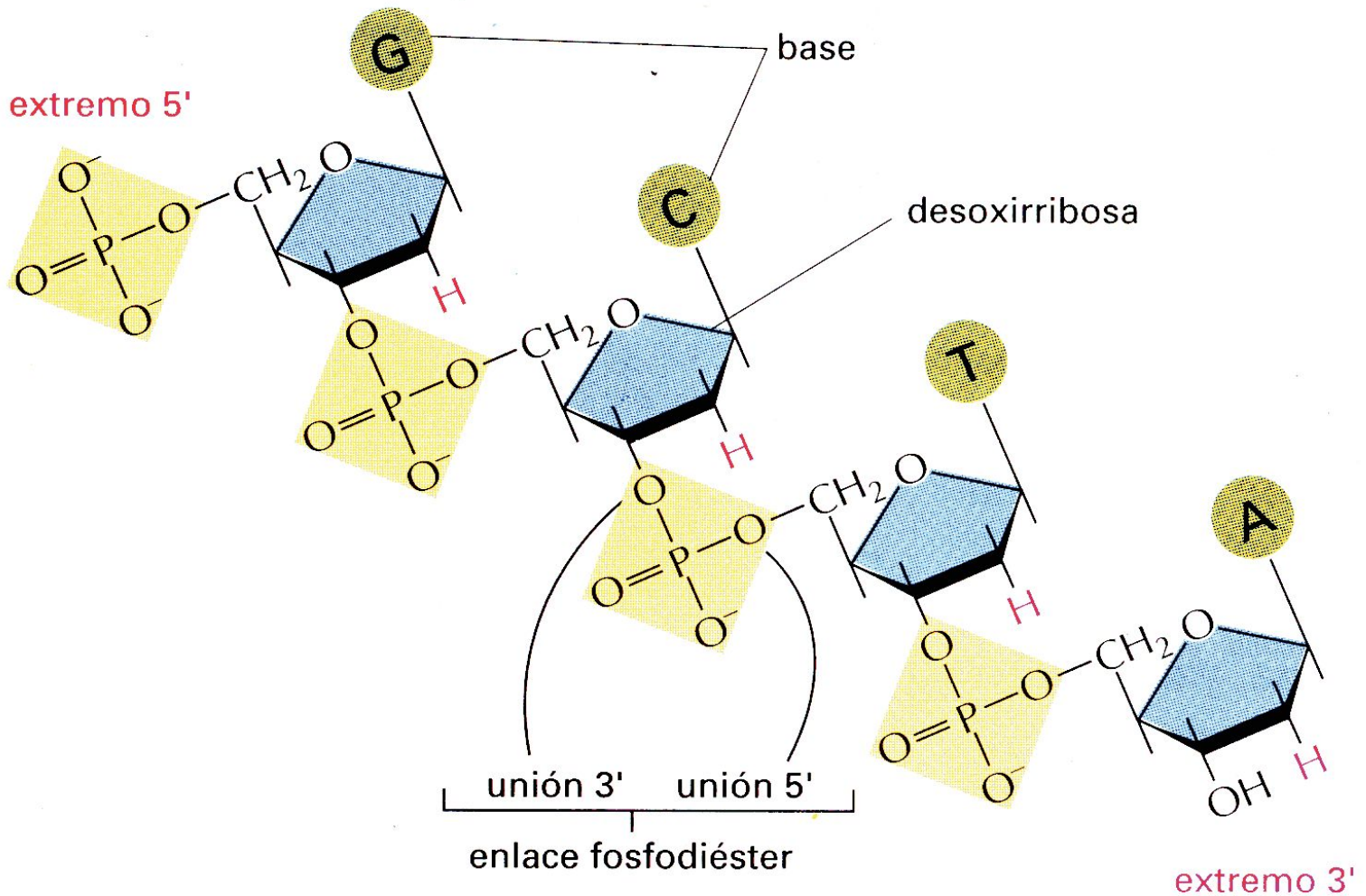
 **Fosfato**

  **Bases Nitrogenadas**
A,T,G,C

Figura 1. Estructura de ADN y Nucleótidos

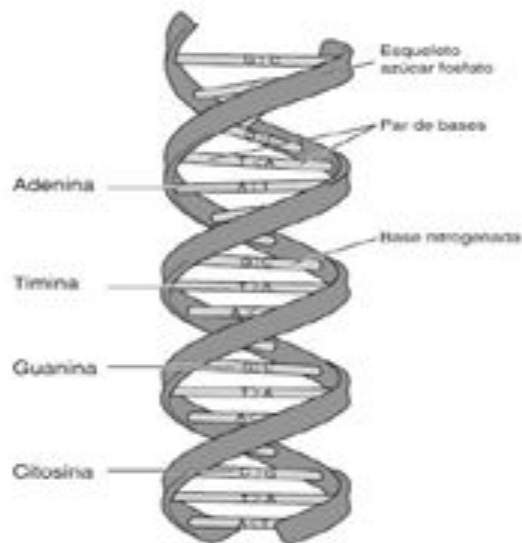
ESQUELETO DE AZÚCAR FOSFATO DEL DNA



El alfabeto de los genes/proteínas

Gen: Tiene 4 letras: **A C T G**

Proteína: Tiene 20 aminoácidos



agrupadas de 3 en 3 (codón)

1ª	2ª BASE				3ª
	U	C	A	G	
U	UUU	UCU	UAU	UGU	U
	UUC	UCC	UAC	UGC	C
	UUA	UCA	UAA	UGA	A
	UUG	UCG	UAG	UGG	G
C	CUU	CCU	CAU	CGU	C
	CUC	CCC	CAC	CGC	G
	CUA	CCA	CAA	CGA	A
	CUG	CCG	CAG	CGG	G
A	AUU	ACU	AAU	AGU	A
	AUC	ACC	AAC	AGC	C
	AUA	ACA	AAA	AGA	A
	AUG	ACG	AAG	AGG	G
G	GUU	GCU	GAU	GGU	U
	GUC	GCC	GAC	GGC	C
	GUA	GCA	GAA	GGA	A
	GUG	GCG	GAG	GGG	G

ATG CGC AAT GCT CCA AGC TGA

CÓDIGO GENÉTICO



DNA



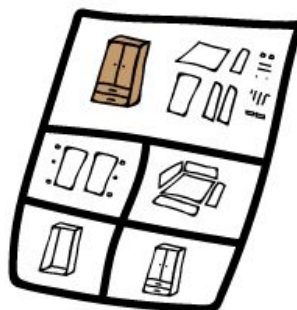
RNA



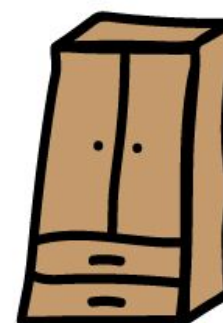
PROTEÍNA



MANUAL

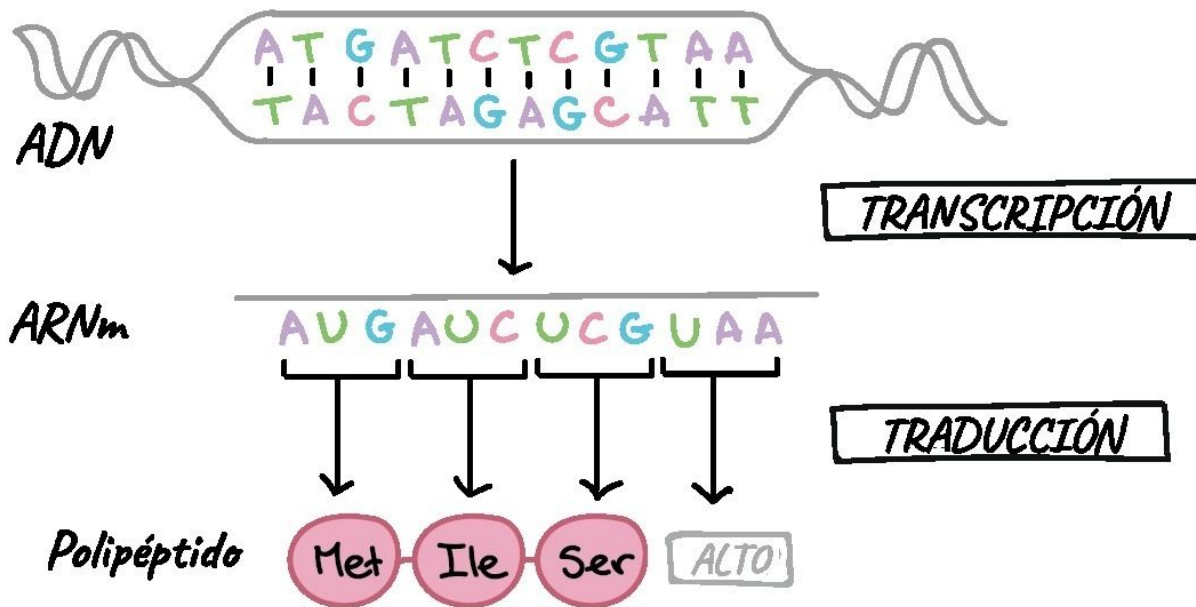


FOTOCOPIA



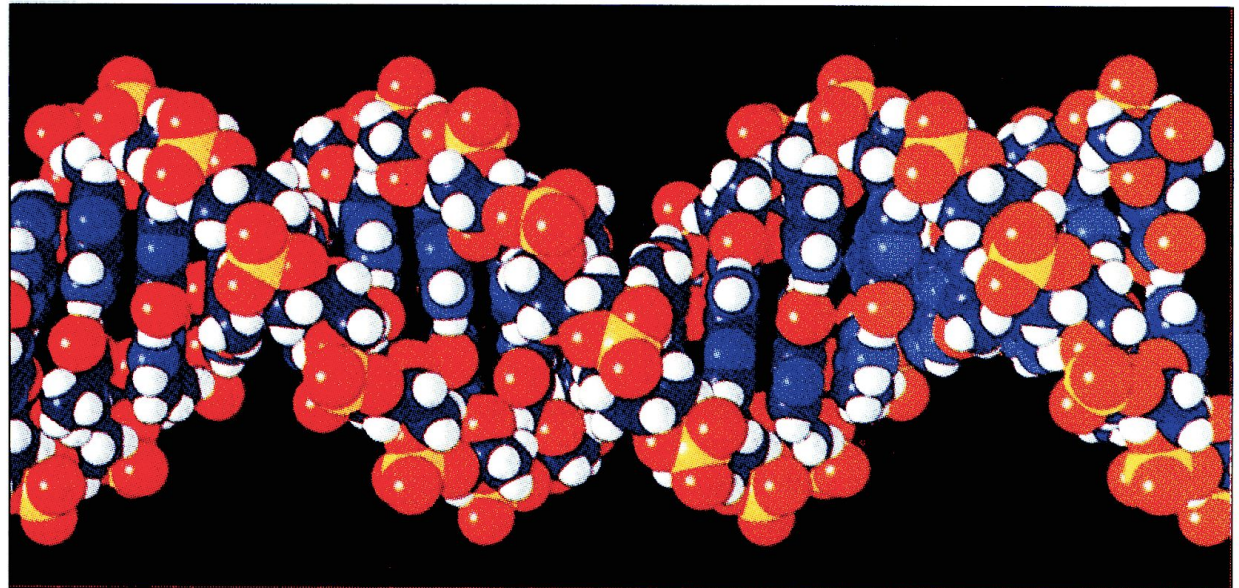
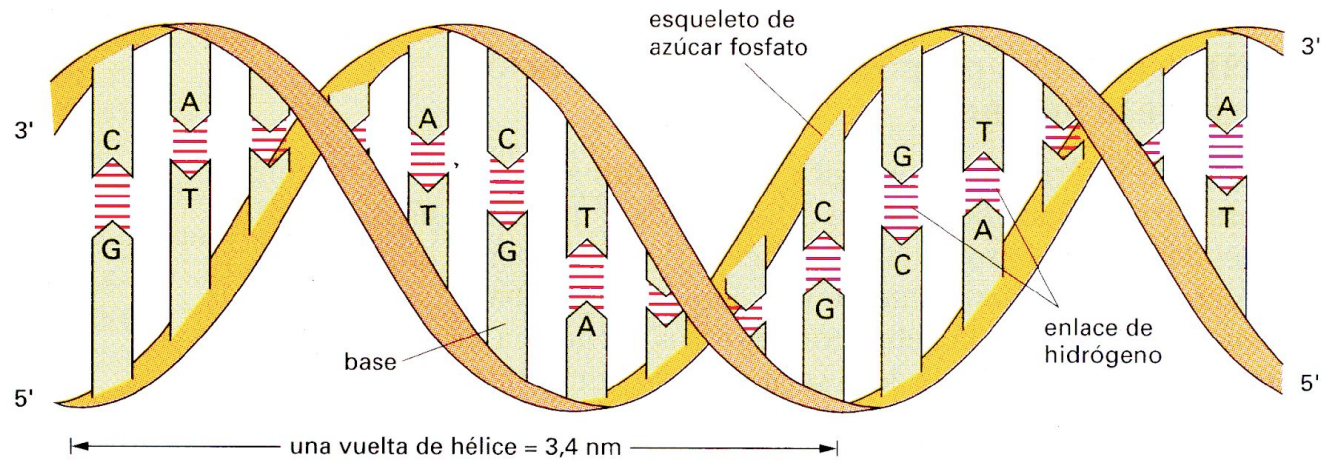
MUEBLE

EL DOGMA CENTRAL



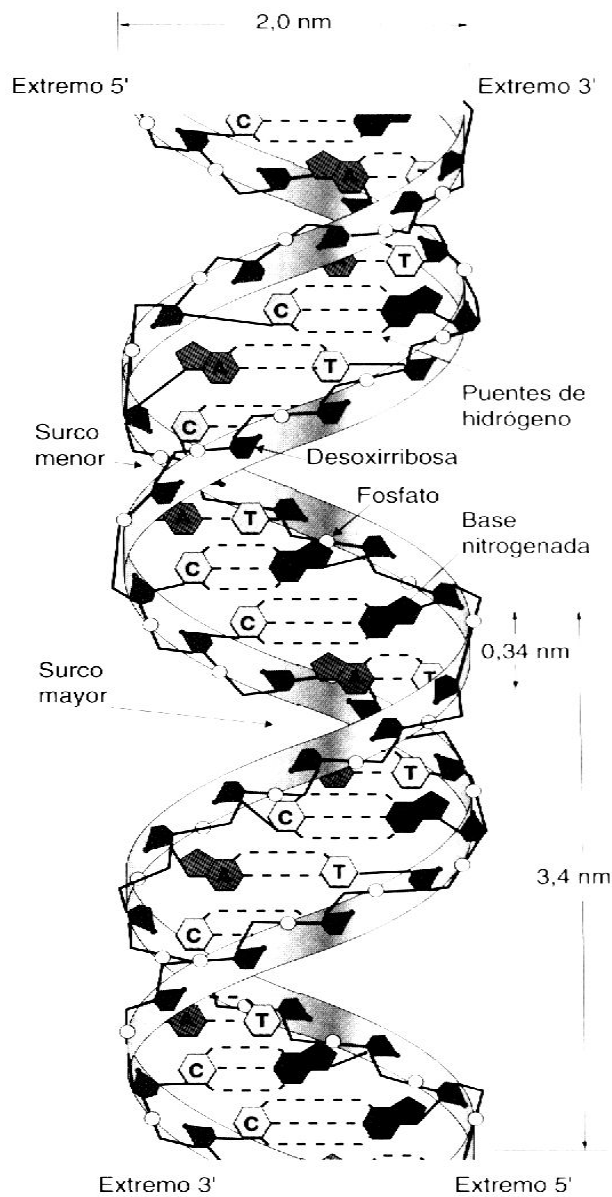
DOBLE HÉLICE DEL DNA

En una molécula de DNA, se encuentran apareadas dos cadenas antiparalelas cuyas secuencias de nucleótidos son complementarias, generando una doble hélice dextrógira de aproximadamente 10 pares de nucleótidos por vuelta de la hélice. En la parte superior de esta figura se presenta una ilustración esquemática y en la inferior un modelo lleno de la doble hélice del DNA.



estría principal

estría secundaria



La conformación tridimensional de la molécula de ADN debía explicar las dimensiones conocidas de las bases nitrogenadas, las periodicidades observadas en esta molécula y la equivalencia entre pares de bases.

```

CCCTGTGGAGCCACACCCTAGGGTTGGCCA
ATCTACTCCCAGGAGCAGGGAGGGGCAGGAG
CCAGGGCTGGGCATAAAAGTCAGGGCAGAG
CCATCTATTGCTTACATTTGCTTCTGACAC
AACTGTGTTCACTAGCAACTCAAACAGACA
CCATGGTGCACCTGACTCCTGAGGAGAAGT
CTGCCGTTACTGCCCTGTGGGGCAAGGTGA
ACGTGGATGAAGTTGGTGGTGAGGCCCTGG
GCAGGTTGGTATCAAGGTTACAAGACAGGT
TTAAGGAGACCAATAGAAACTGGGCATGTG
GAGACAGAGAAGACTCTTGGGTTTCTGATA
GGCACTGACTCTCTCTGCCTATTGGTCTAT
TTTCCCACCCTTAGGCTGCTGGTGGTCTAC
CCTTGGACCCAGAGGTTCTTTGAGTCCTTT
GGGGATCTGTCCACTCCTGATGCTGTTATG
GGCAACCCTAAGGTGAAGGCTCATGGCAAG
AAAGTGCTCGGTGCCTTTAGTGATGGCCTG

```

		Segunda letra				Tercera letra
		U	C	A	G	
Primera letra	U	UUU } Phe UUC } UUA } Leu UUG }	UCU } UCC } Ser UCA } UCG }	UAU } Tyr UAC } UAA Alto UAG Alto	UGU } Cys UGC } UGA Alto UGG Trp	
	C	CUU } CUC } Leu CUA } CUG }	CCU } CCC } Pro CCA } CCG }	CAU } His CAC } CAA } Gln CAG }	CGU } CGC } Arg CGA } CGG }	
	A	AUU } AUC } Ile AUA } AUG Met	ACU } ACC } Thr ACA } ACG }	AAU } Asn AAC } AAA } Lys AAG }	AGU } Ser AGC } AGA } Arg AGG }	
	G	GUU } GUC } Val GUA } GUG }	GCU } GCC } Ala GCA } GCG }	GAU } Asp GAC } GAA } Glu GAG }	GGU } GGC } Gly GGA } GGG }	

5' 3'

1 CUC AGC GUU ACC AU

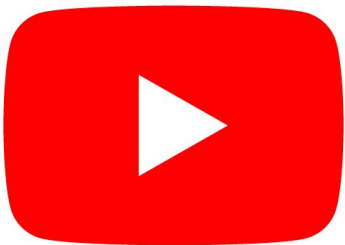
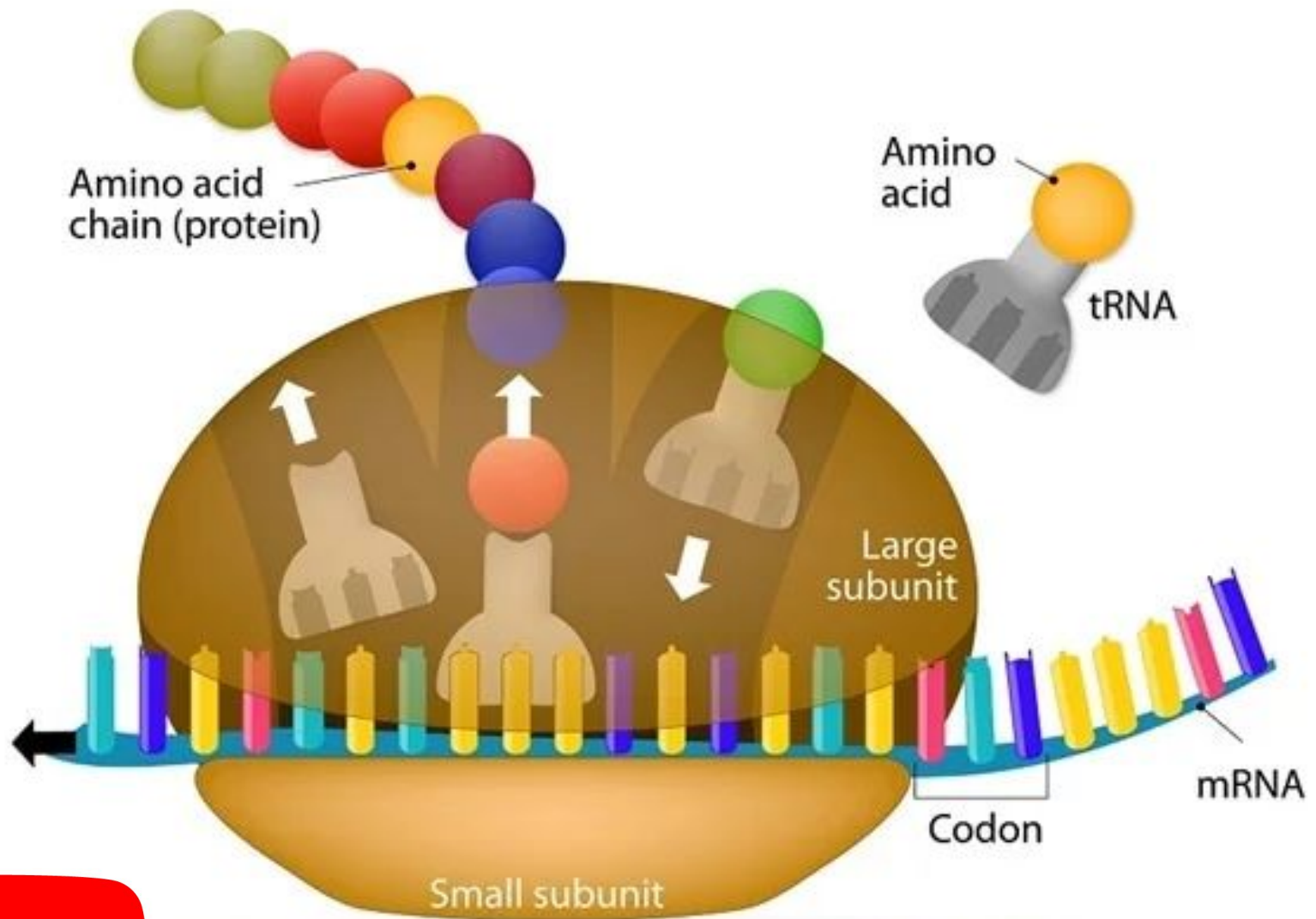
—Leu—Ser—Val—Thr—

2 C UCA GCG UUA CCA U

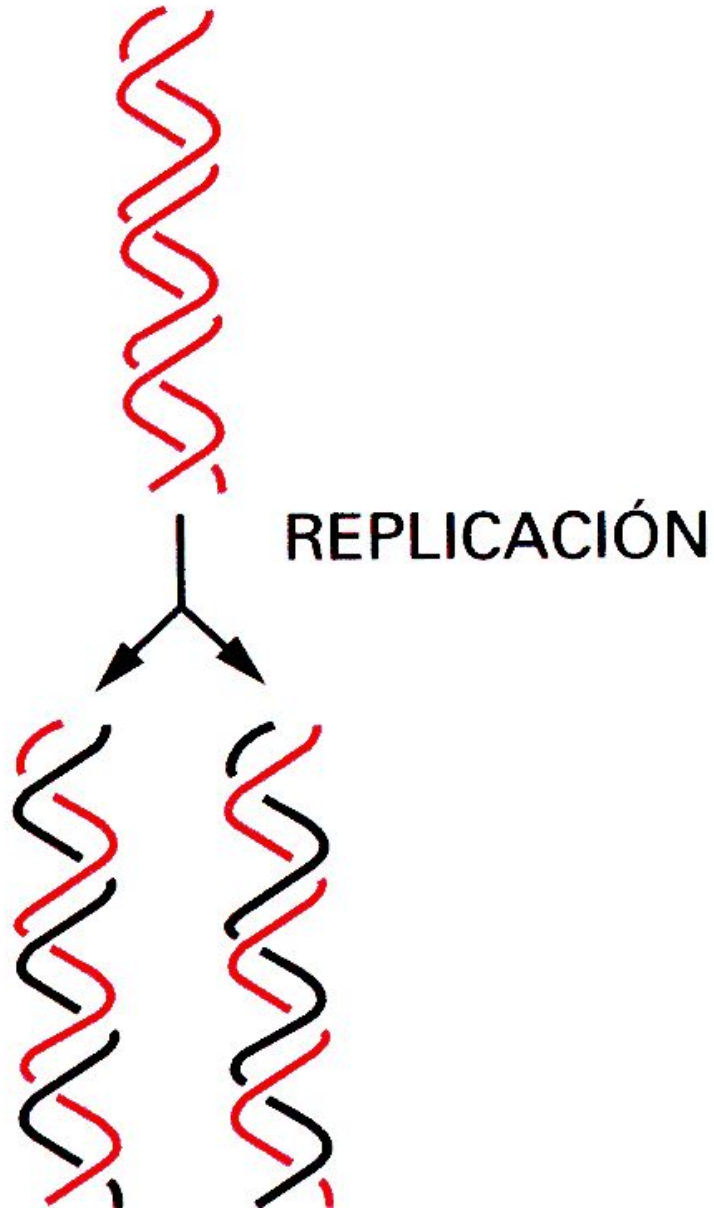
—Ser—Ala—Leu—Pro—

3 CU CAG CGU UAC CAU

—Gln—Arg—Tyr—His—



dobles hélice parterna de DNA



ADN (una cadena)

Normal



Cambio
en una base
individual



Adición



Supresión



