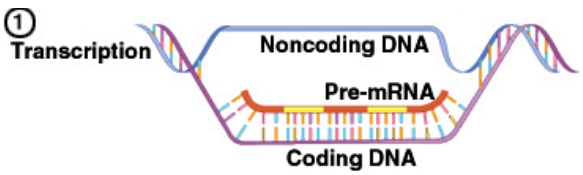
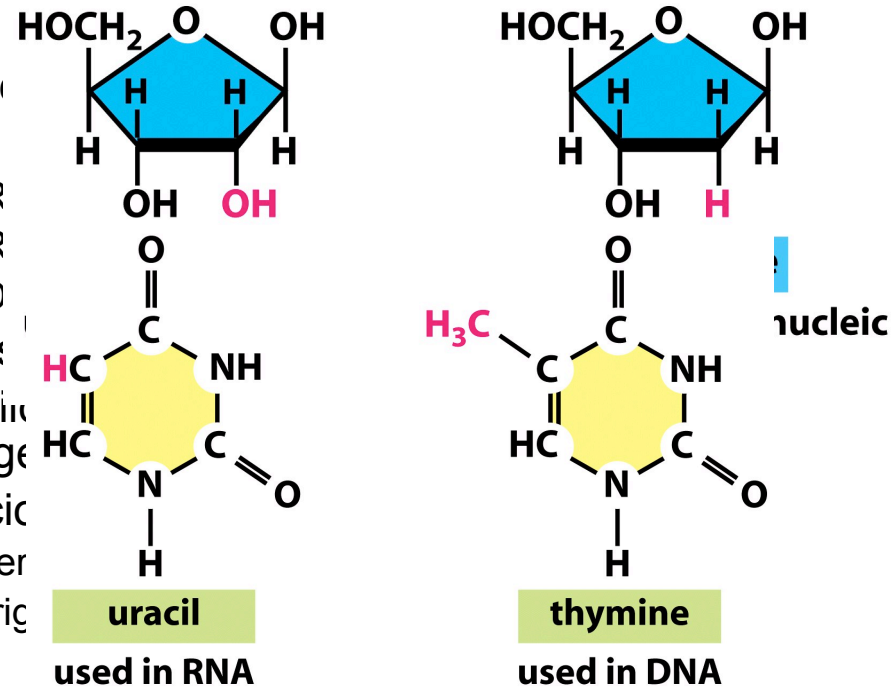
Sesión 8:
Transcripción y Traducción

Transcripción

- Vamos desde ADN a ARN
- Catalizan: polimerasas de ARN.
  - Decidir donde unirse a ADN
  - Abrir la hélice de ADN
  - Copiar las bases de una hebra de AND a una molécular de pre-ARNm
  - Cerrar el ADN



- Una
- Más
  - AR
  - AR
  - AD
- Ribos
- Uraci
  nitroge
- Funcio
  - inter
  - Dirig



nucleic

TRANSCRIPTION START IN PROCARYOTES

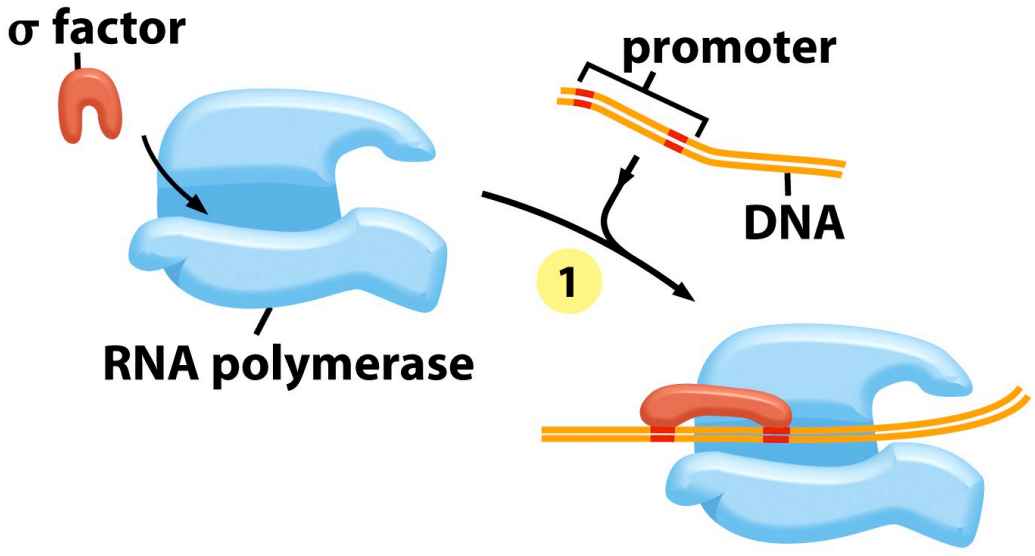


Figure 6-11 (part 1 of 7) *Molecular Biology of the Cell* (© Garland Science 2008)

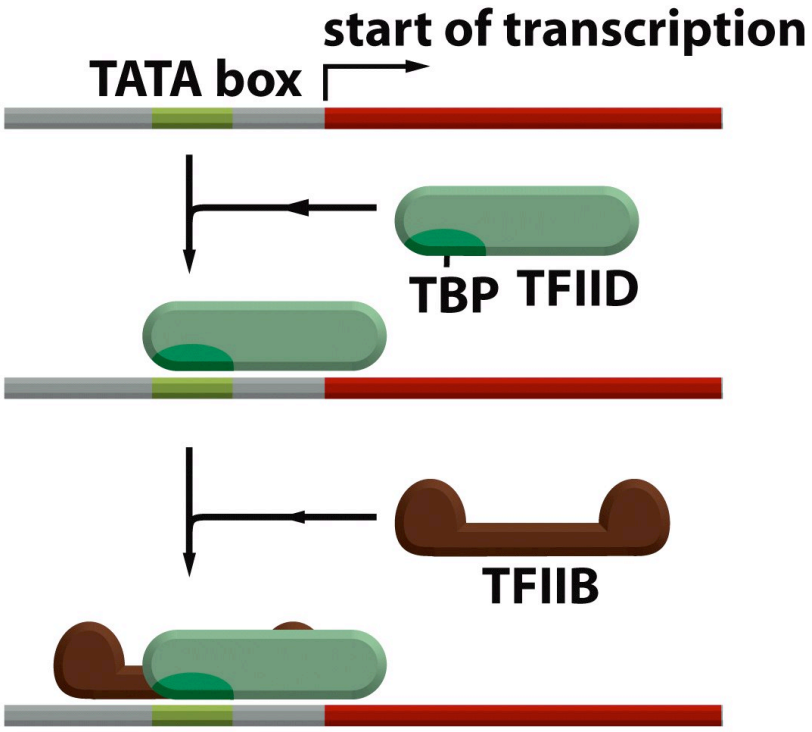
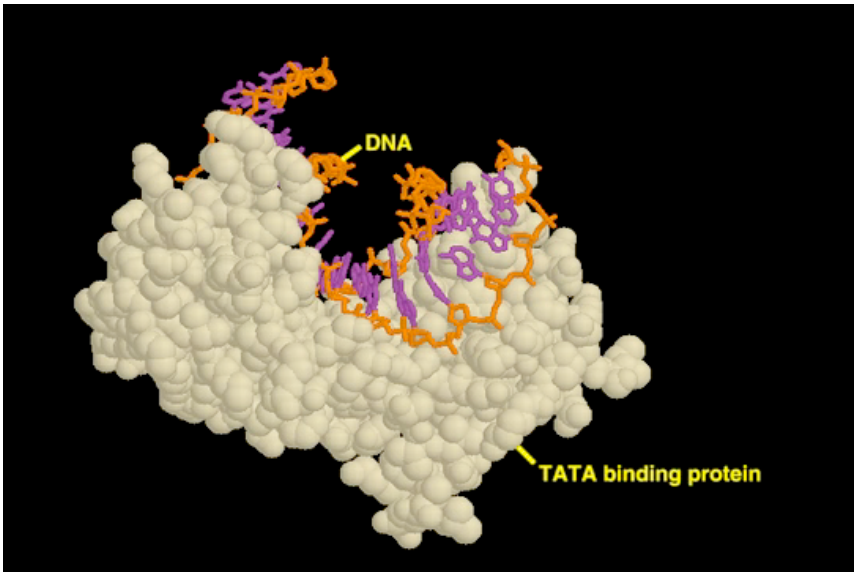


Figure 6-16 (part 1 of 3) *Molecular Biology of the Cell* (© Garland Science 2008)



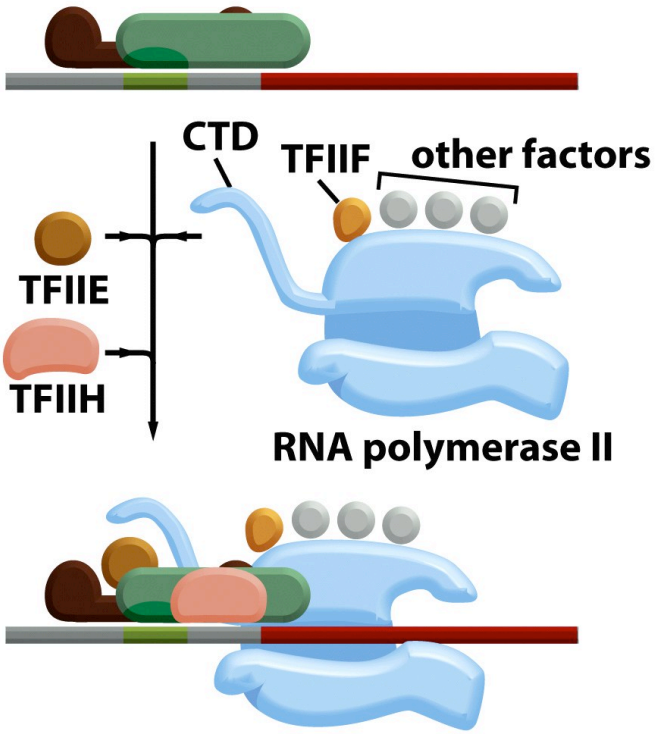


Figure 6-16 (part 2 of 3) *Molecular Biology of the Cell* (© Garland Science 2008)

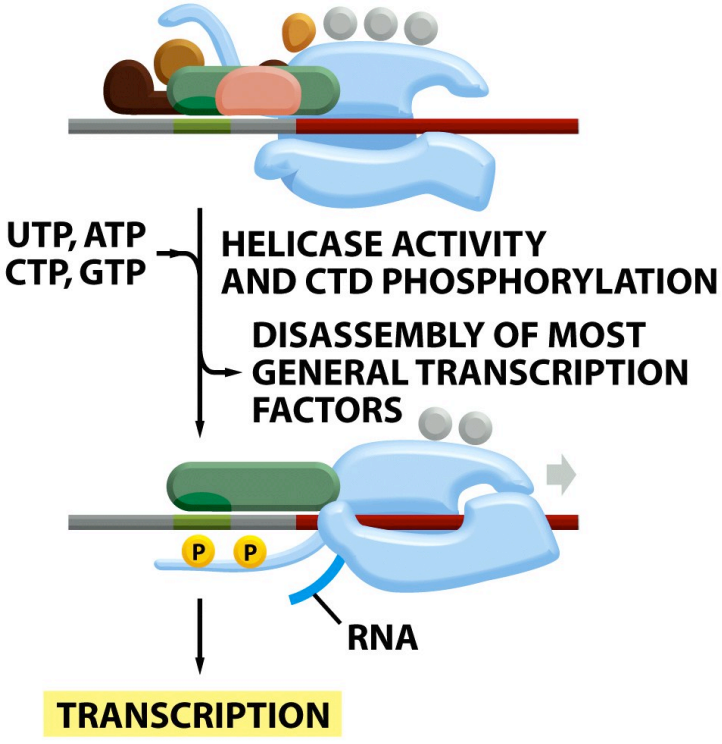


Figure 6-16 (part 3 of 3) *Molecular Biology of the Cell* (© Garland Science 2008)

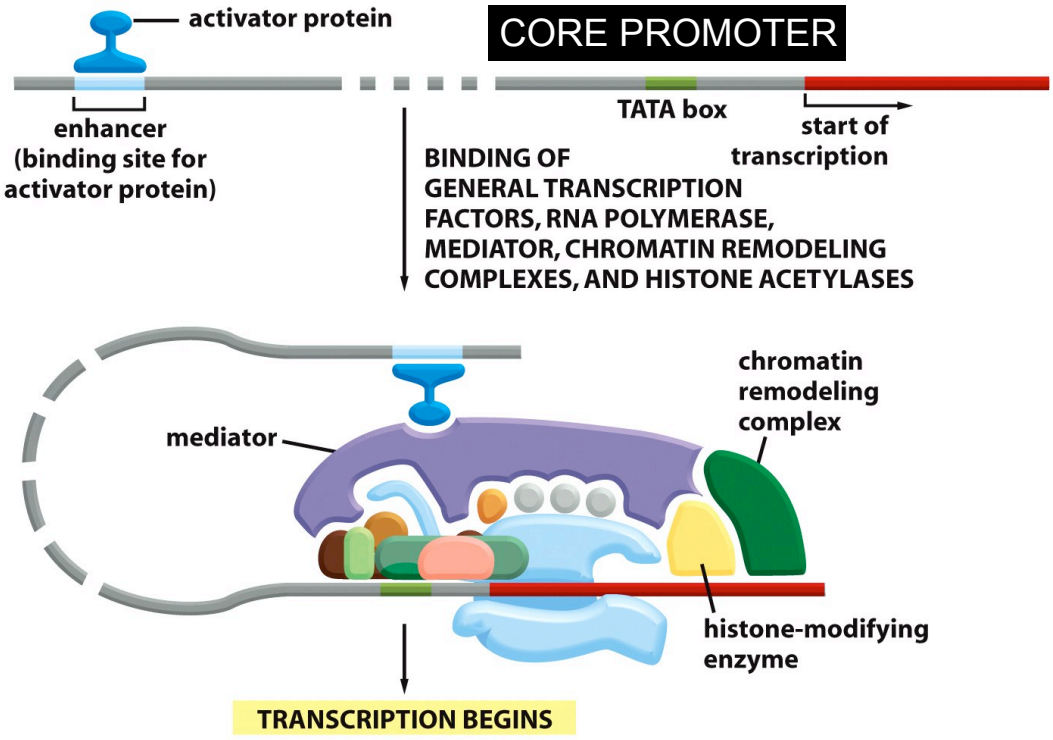
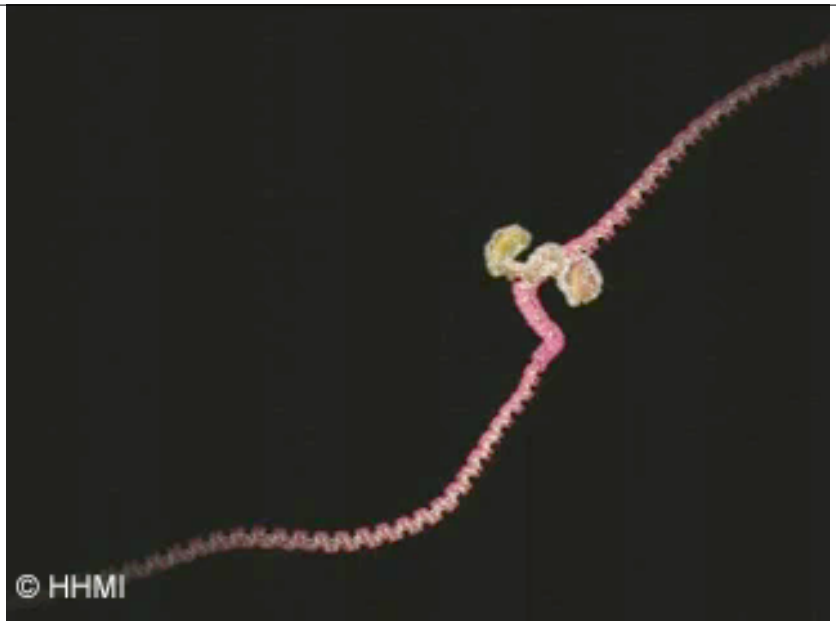


Figure 6-19 *Molecular Biology of the Cell* (© Garland Science 2008)



- Factores que se asocian al principo del gen (secuencia lineal de intrucciones en ADN).
- Notese la alta concentración de nucleótidos

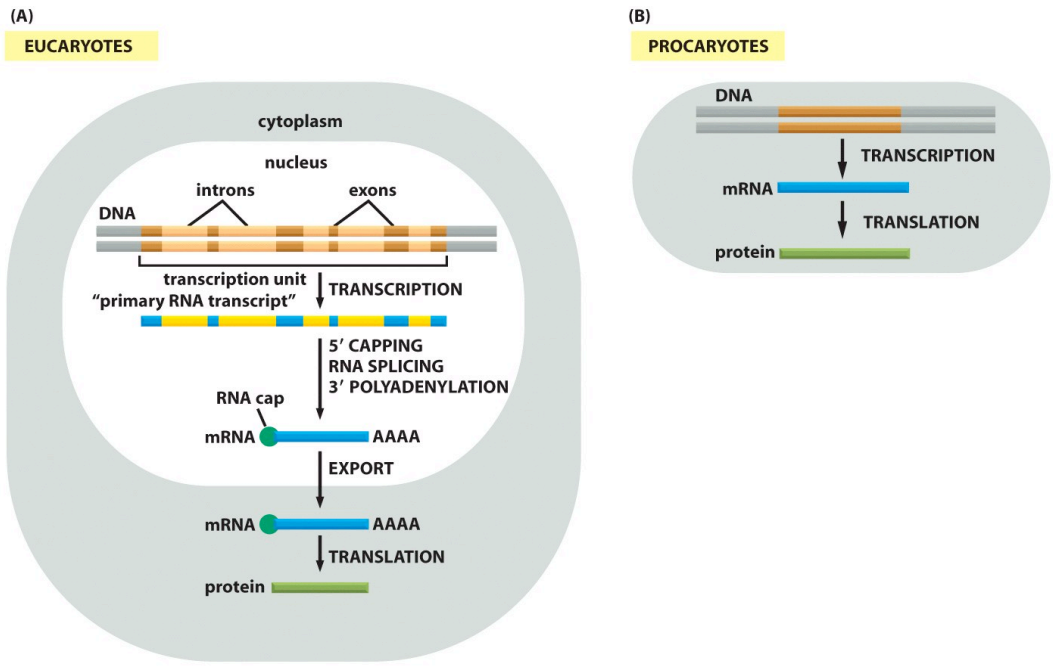


Figure 6-21 *Molecular Biology of the Cell* (© Garland Science 2008)

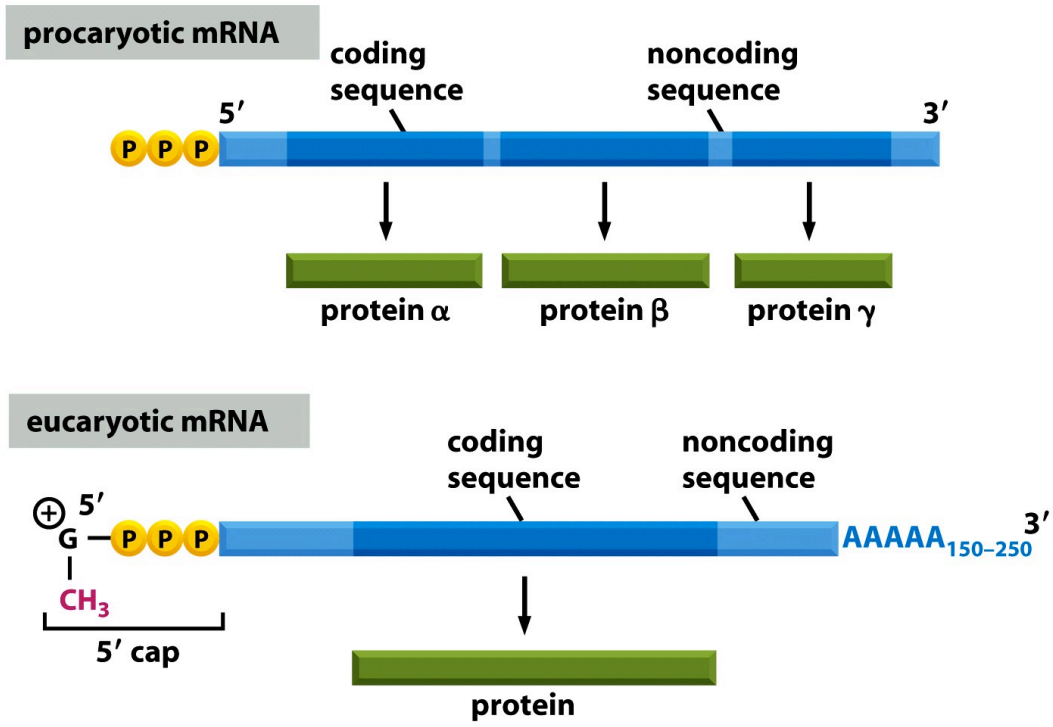


Figure 6-22a *Molecular Biology of the Cell* (© Garland Science 2008)

ALTERNATIVE SPLICING

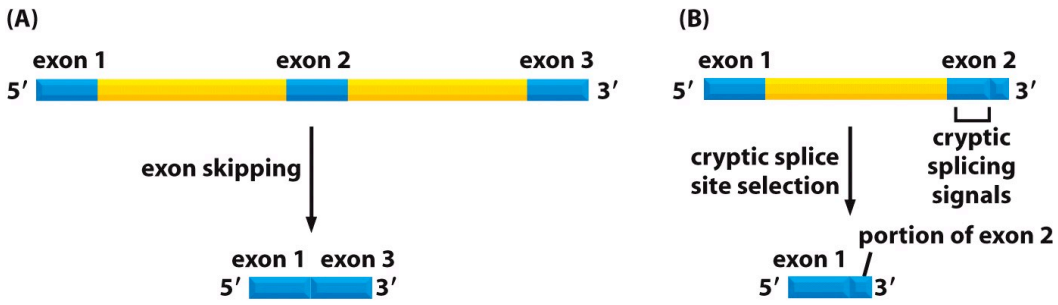


Figure 6-31 *Molecular Biology of the Cell* (© Garland Science 2008)

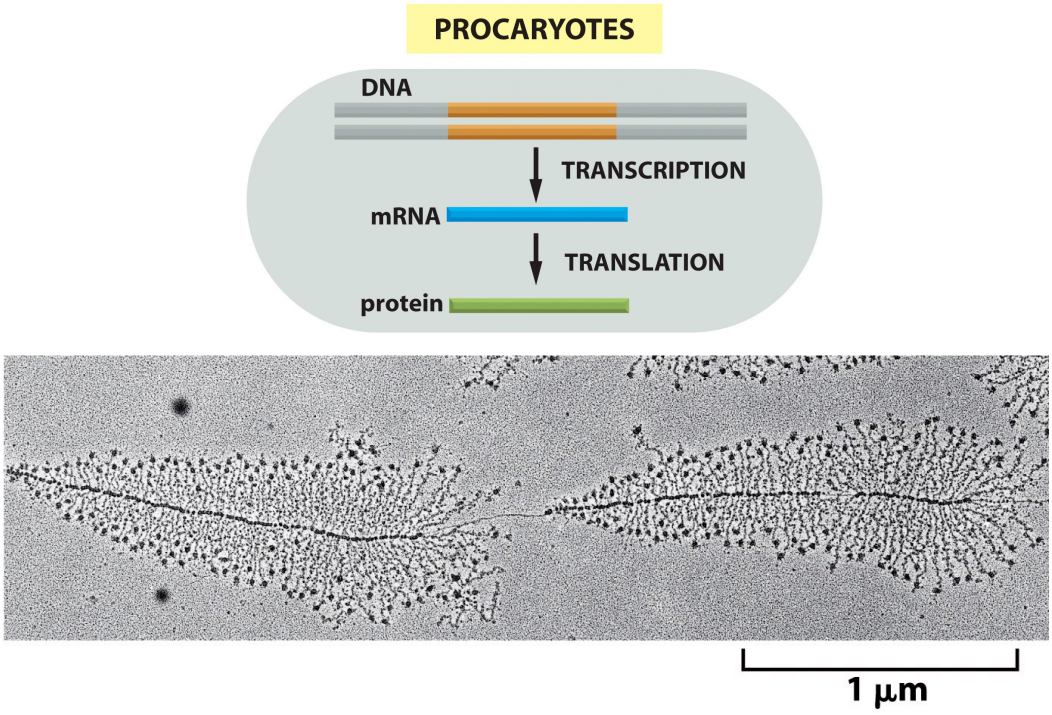


Figure 6-9 *Molecular Biology of the Cell* (© Garland Science 2008)

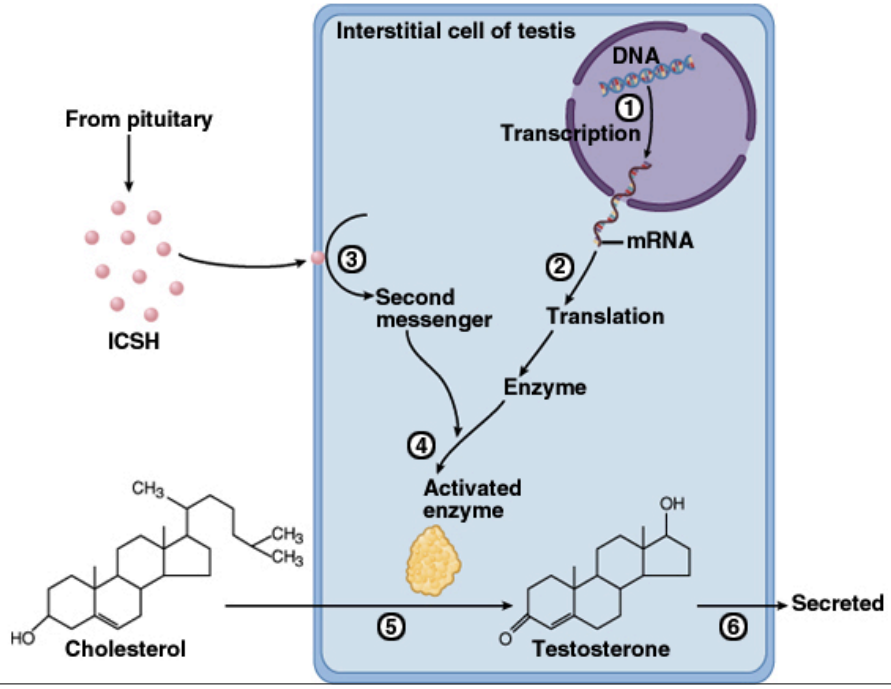
Table 6–2 The Three RNA Polymerases in Eucaryotic Cells

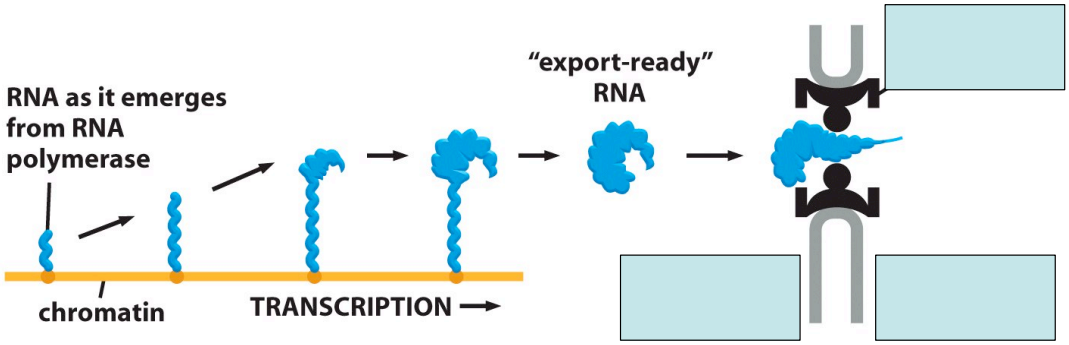
TYPE OF POLYMERASE	GENES TRANSCRIBED
RNA polymerase I	5.8S, 18S, and 28S rRNA genes
RNA polymerase II	all protein-coding genes, plus snoRNA genes, miRNA genes, siRNA genes, and most snRNA genes
RNA polymerase III	tRNA genes, 5S rRNA genes, some snRNA genes and genes for other small RNAs

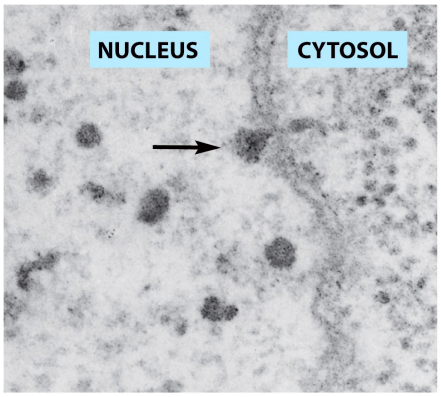
The rRNAs are named according to their "S" values, which refer to their rate of sedimentation in an ultracentrifuge. The larger the S value, the larger the rRNA.

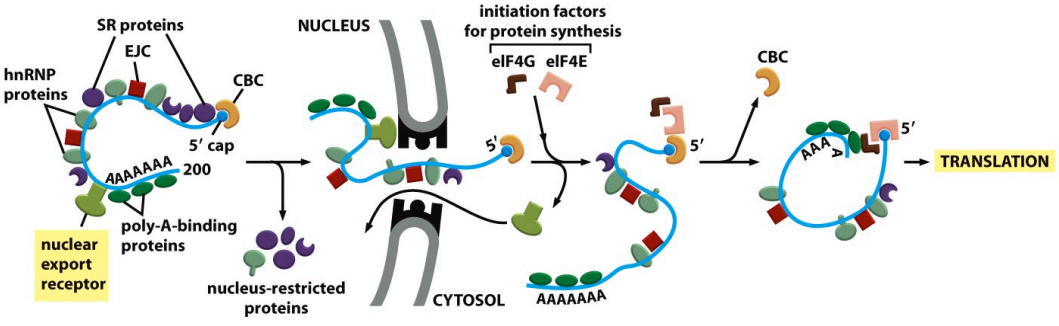
Table 6-2 *Molecular Biology of the Cell* (© Garland Science 2008)

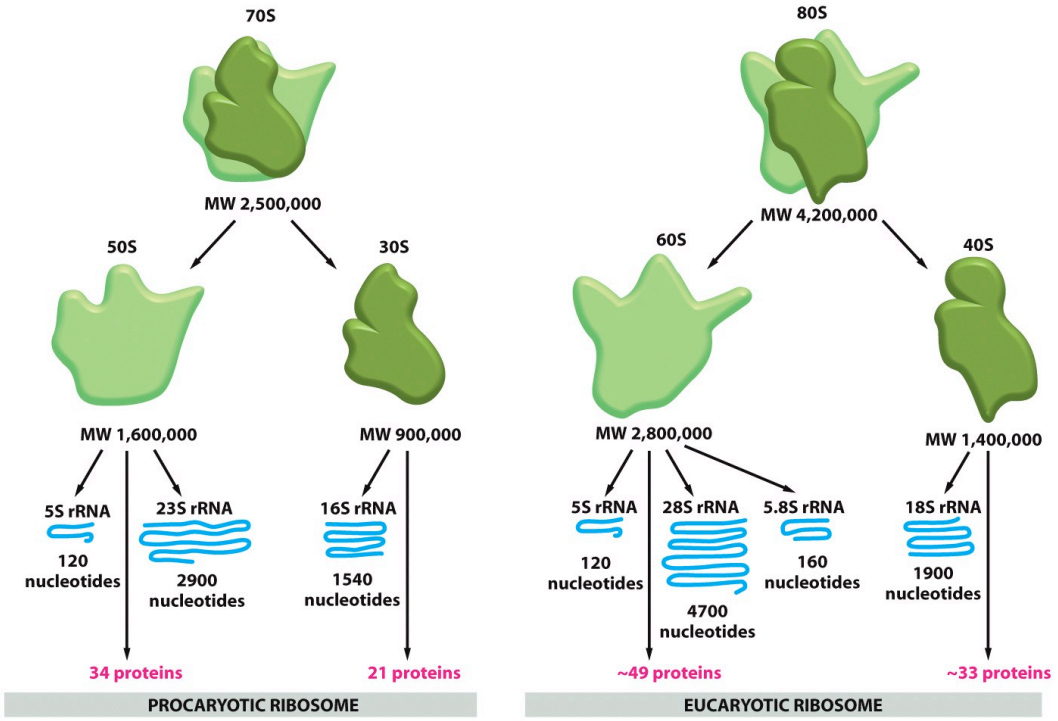
Indirect Control of Nonprotein Synthesis by DNA



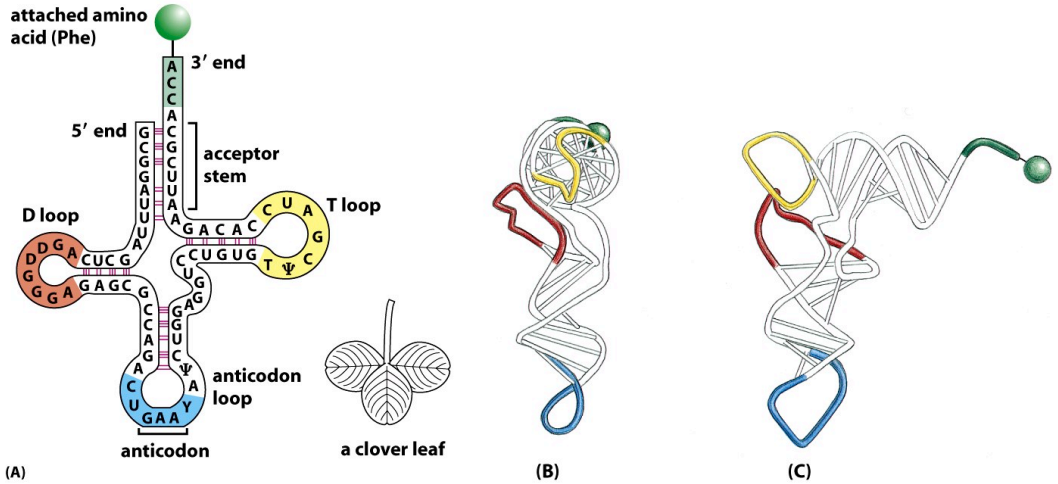

RNA as it emerges from RNA polymerase
chromatin
TRANSCRIPTION
"export-ready" RNA


NUCLEUS
CYTOSOL

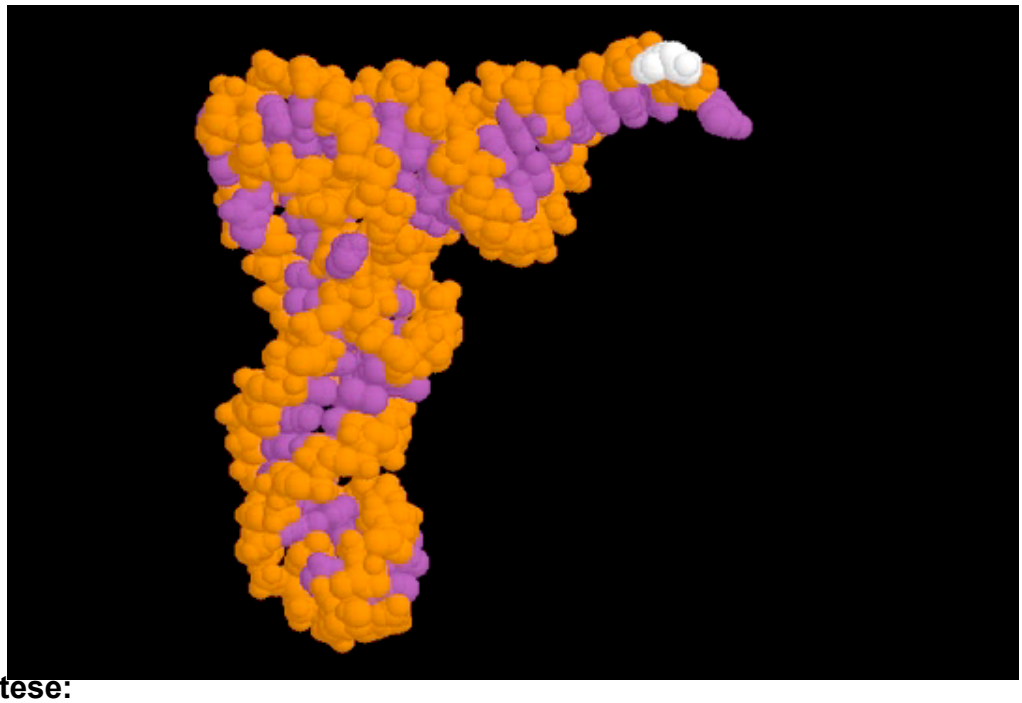

SR proteins
EJC
hnRNP proteins
CBC
5′ cap
AAAAAAA
200
poly-A-binding proteins
nuclear export receptor
nucleus-restricted proteins
NUCLEUS
CYTOSOL
initiation factors for protein synthesis
eIF4G
eIF4E
5′
AAAAAAA
CBC
AAA
A
TRANSLATION



GCA GCC GCG GCU	AGA AGG CGA CGC CGG CGU	GAC GAU	AAC AAU	UGC UGU	GAA GAG	CAA CAG	GGA GGC GGG GGU	CAC CAU	AUA AUC AUU	UUA UUG CUA CUC CUG CUU	AAA AAG	AUG	UUC UUU	CCA CCC CCG CCU	AGC AGU UCA UCC UCG UCU	ACA ACC ACG ACU	UGG	UAC UAU	GUA GUC GUG GUU	UAA UAG UGA
Ala	Arg	Asp	Asn	Cys	Glu	Gln	Gly	His	Ile	Leu	Lys	Met	Phe	Pro	Ser	Thr	Trp	Tyr	Val	stop
A	R	D	N	C	E	Q	G	H	I	L	K	M	F	P	S	T	W	Y	V	



5′ GCGGAUUUAGCUCAGDDGGGAGAGCGCCAGACUGAAYAΨCUGGAGGUCCUGUGTΨCGAUCCACAGAAUUCGCACCA 3′
(D)
anticodon



Notese:

1. **sitio deasociación a aa.**
2. **Posición del anticodon y su exposición**

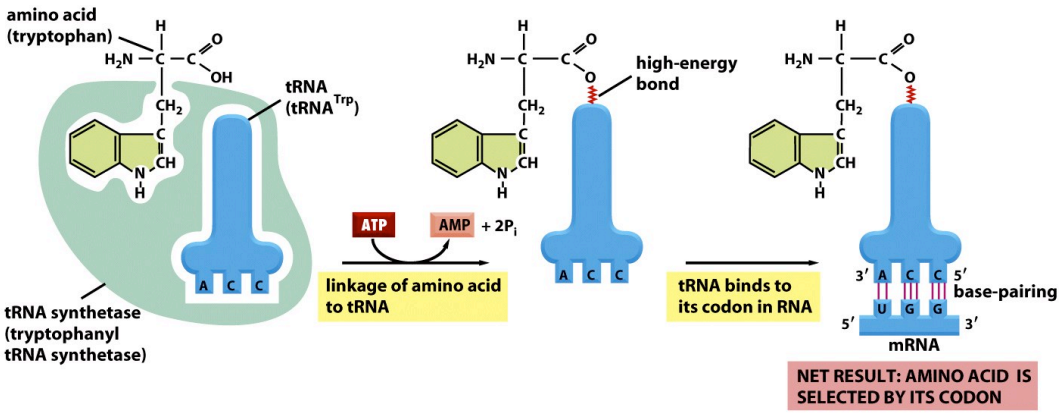


Figure 6-58 *Molecular Biology of the Cell* (© Garland Science 2008)

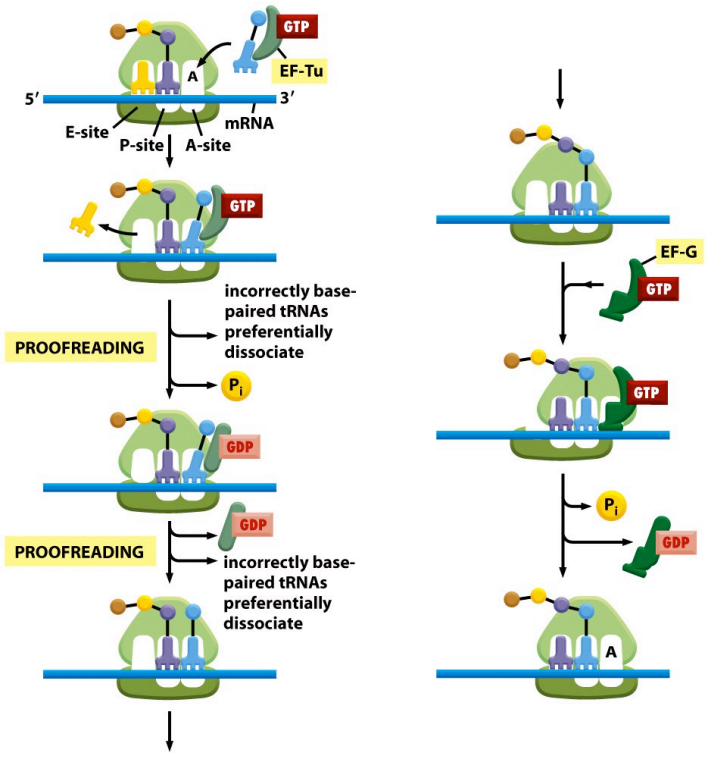
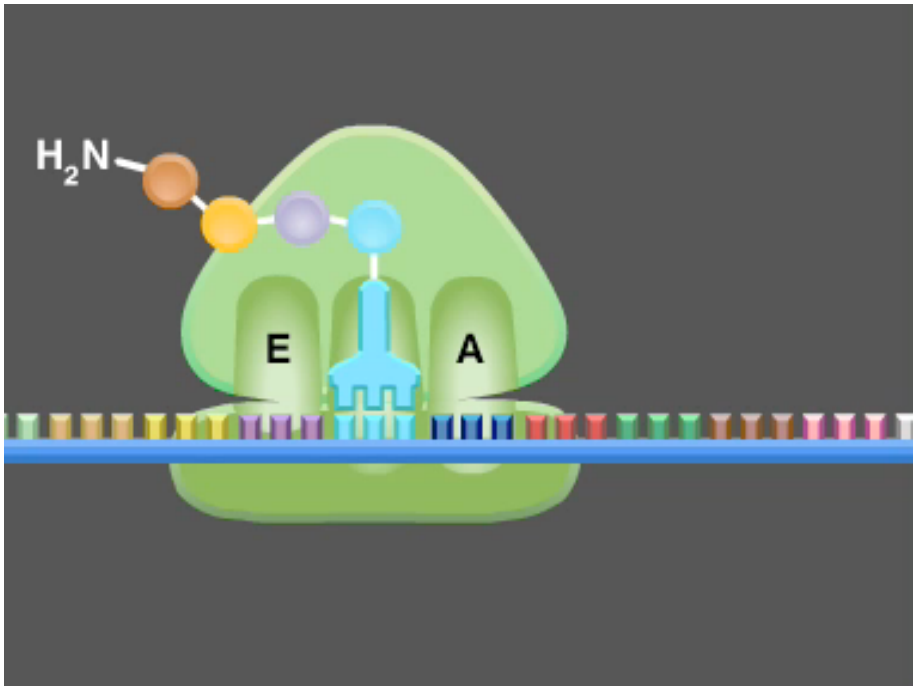
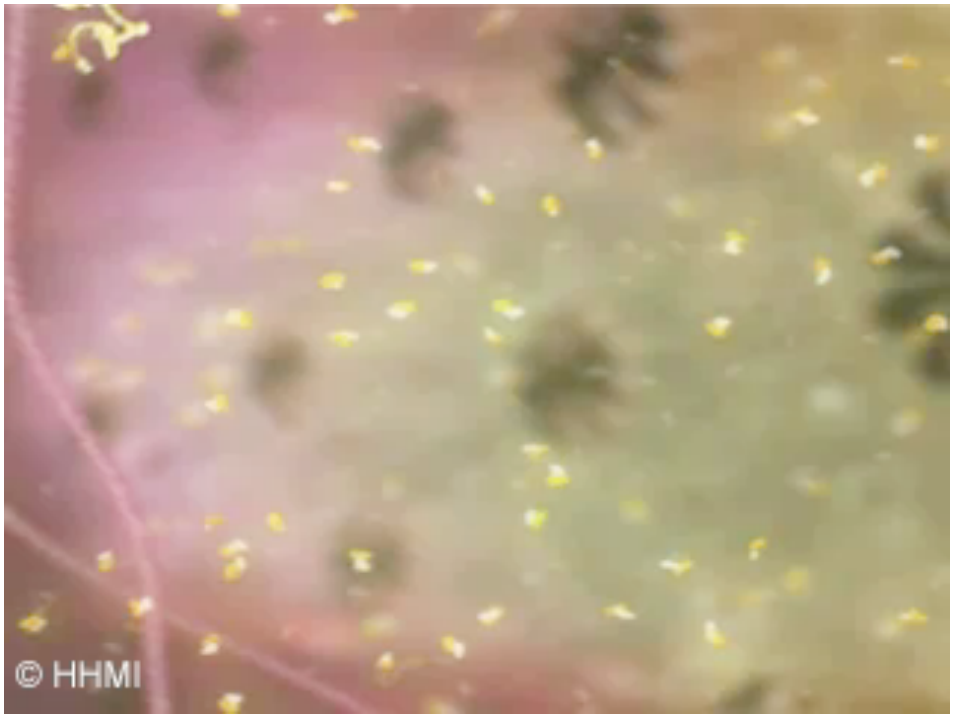


Figure 6-67 *Molecular Biology of the Cell* (© Garland Science 2008)


H_2N
E
A


© HHMI

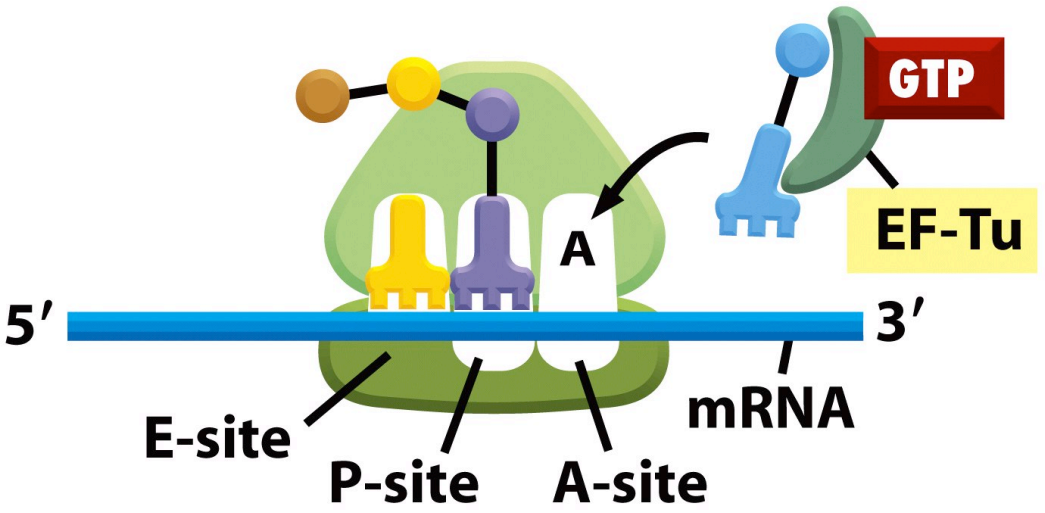


Figure 6-67 (part 1 of 7) *Molecular Biology of the Cell* (© Garland Science 2008)

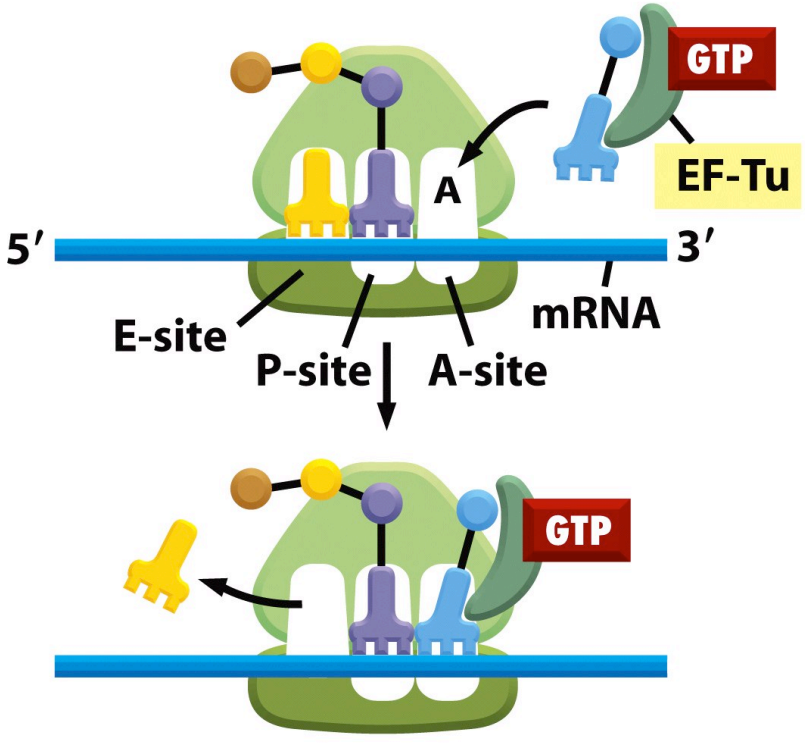


Figure 6-67 (part 2 of 7) *Molecular Biology of the Cell* (© Garland Science 2008)

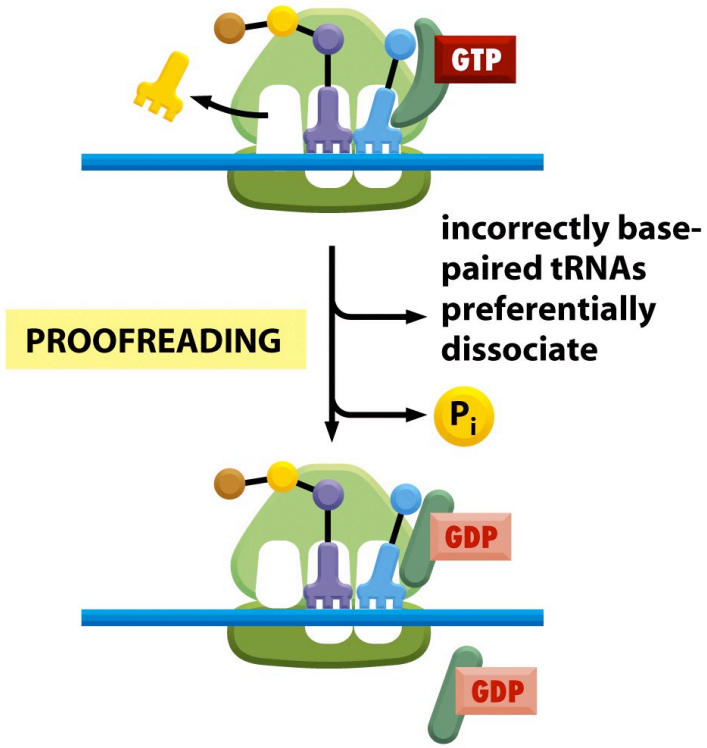


Figure 6-67 (part 3 of 7) *Molecular Biology of the Cell* (© Garland Science 2008)

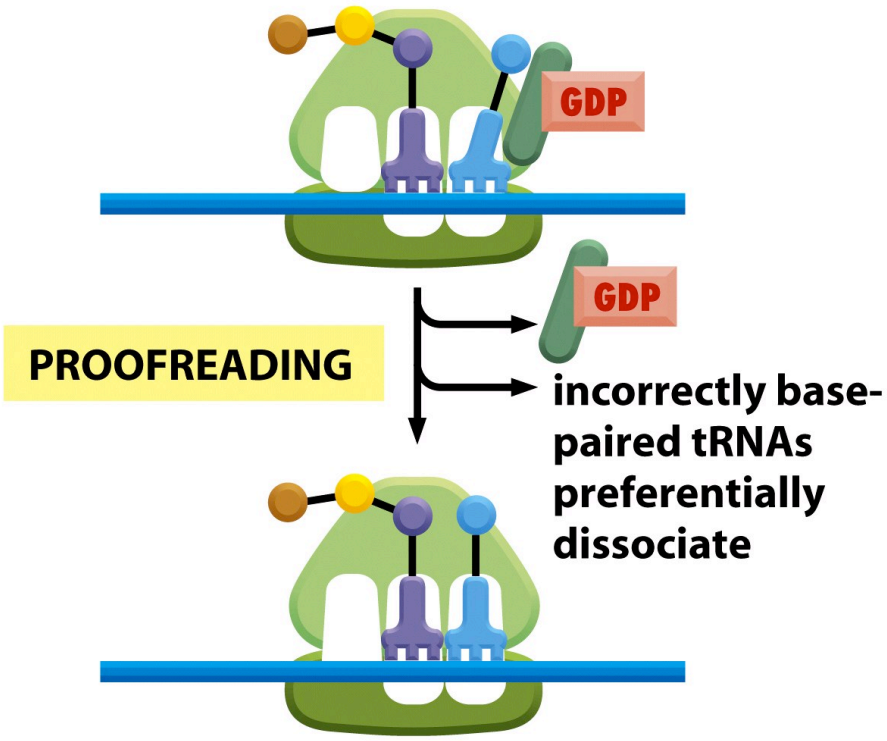


Figure 6-67 (part 4 of 7) *Molecular Biology of the Cell* (© Garland Science 2008)

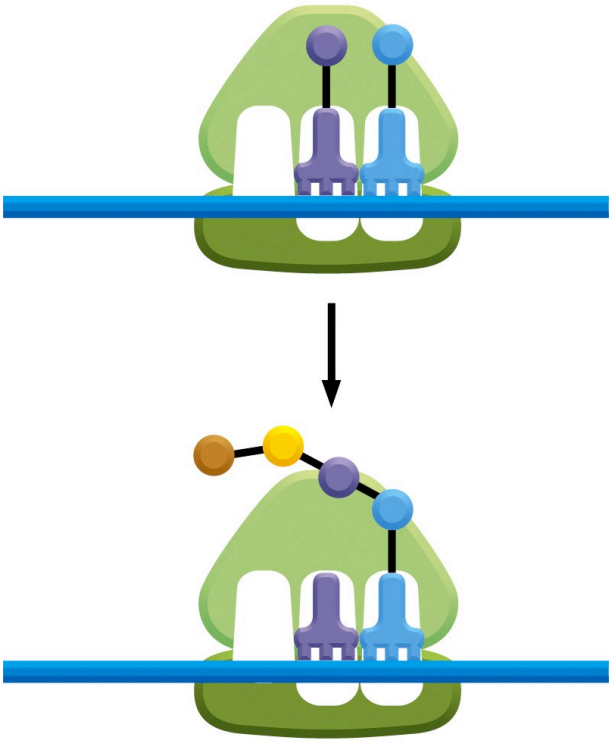


Figure 6-67 (part 5 of 7) *Molecular Biology of the Cell* (© Garland Science 2008)

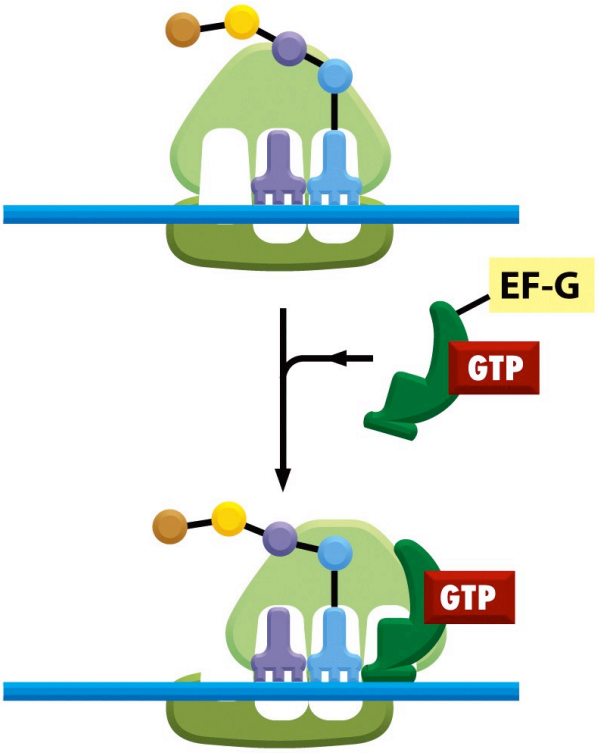


Figure 6-67 (part 6 of 7) *Molecular Biology of the Cell* (© Garland Science 2008)

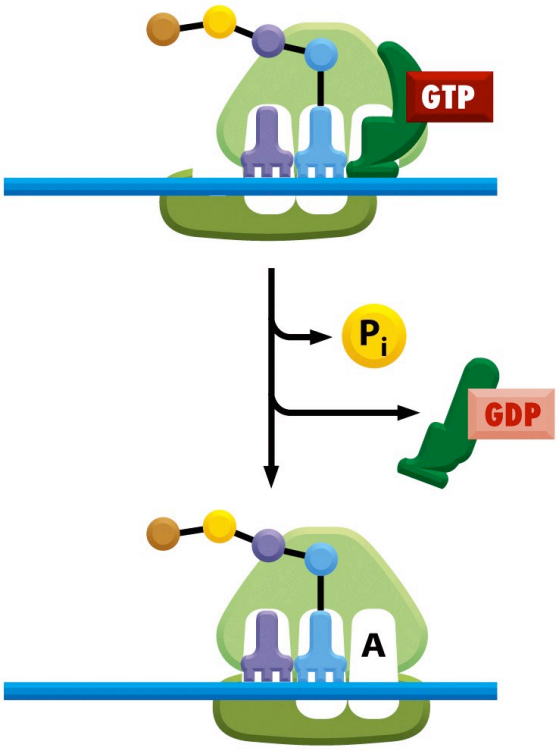


Figure 6-67 (part 7 of 7) *Molecular Biology of the Cell* (© Garland Science 2008)

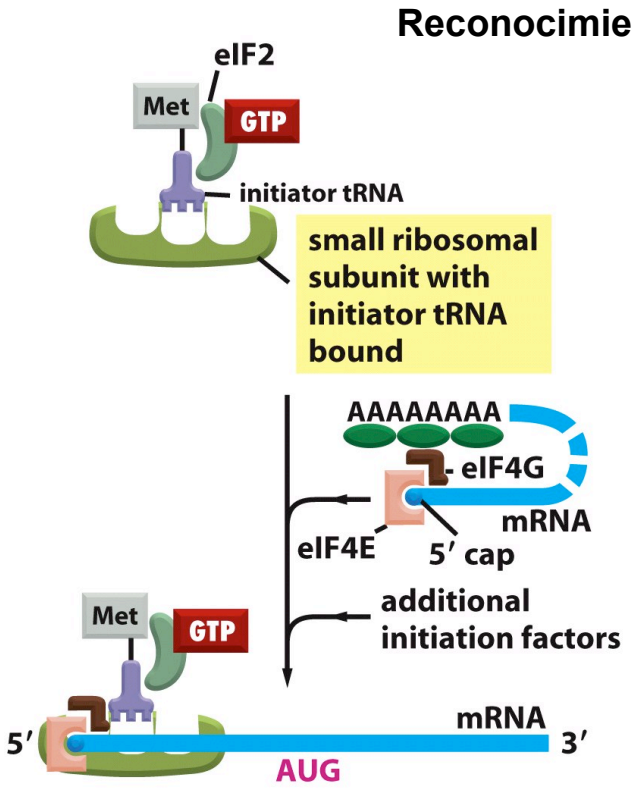


Figure 6-72 (part 1 of 5) *Molecular Biology of the Cell* (© Garland Science 2008)

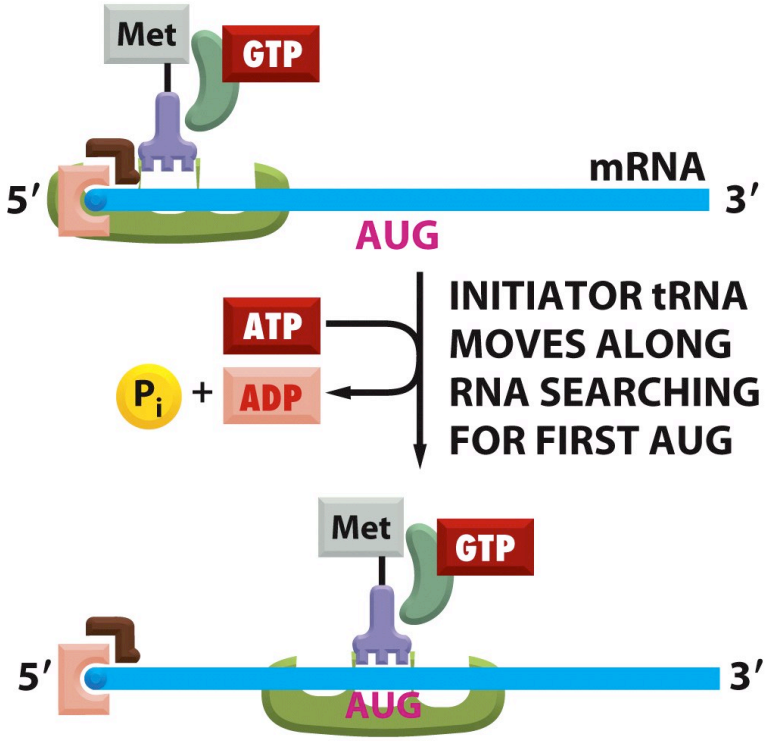


Figure 6-72 (part 2 of 5) *Molecular Biology of the Cell* (© Garland Science 2008)

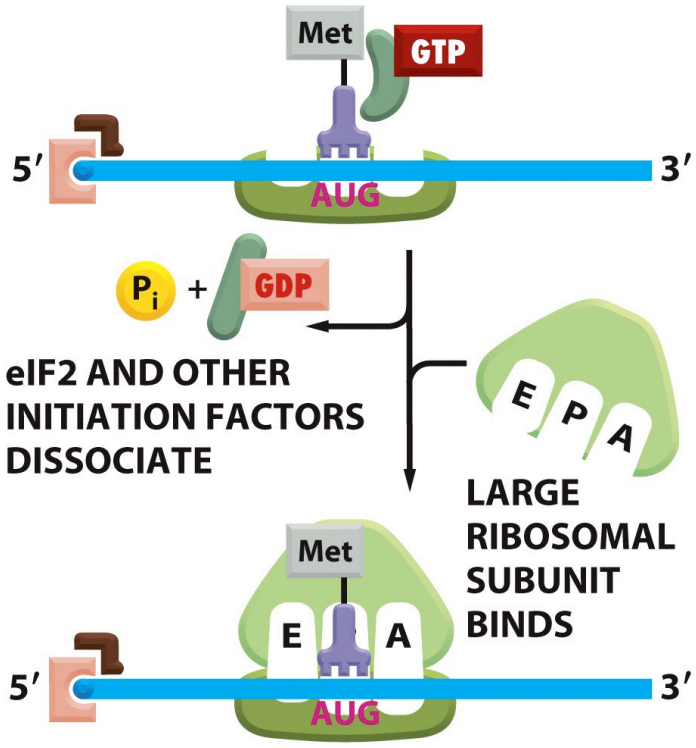


Figure 6-72 (part 3 of 5) *Molecular Biology of the Cell* (© Garland Science 2008)

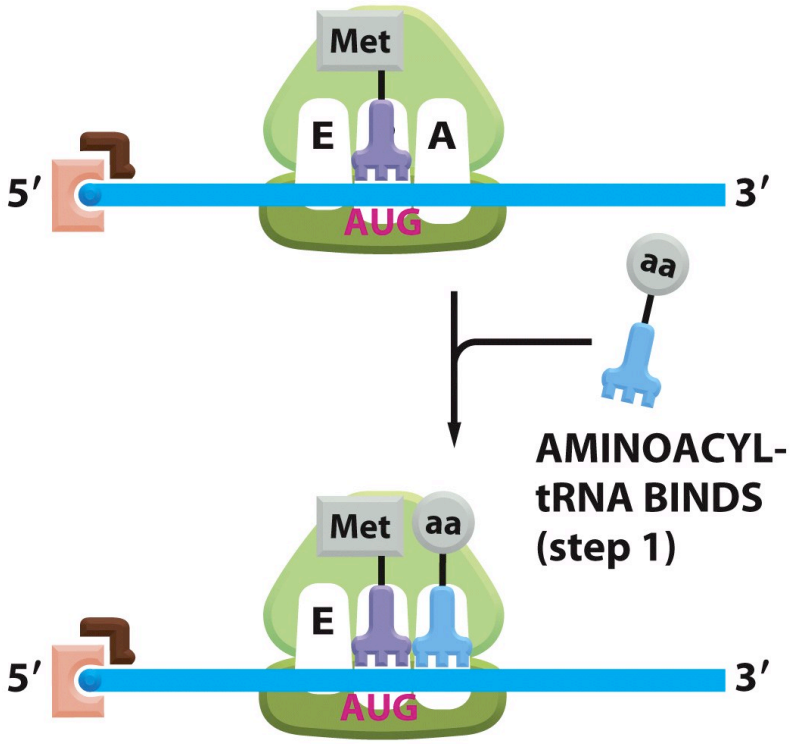


Figure 6-72 (part 4 of 5) *Molecular Biology of the Cell* (© Garland Science 2008)

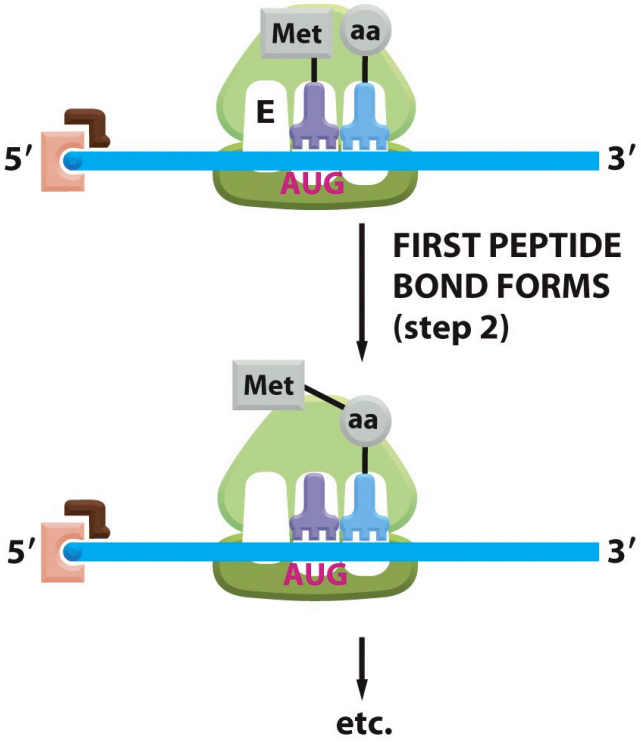
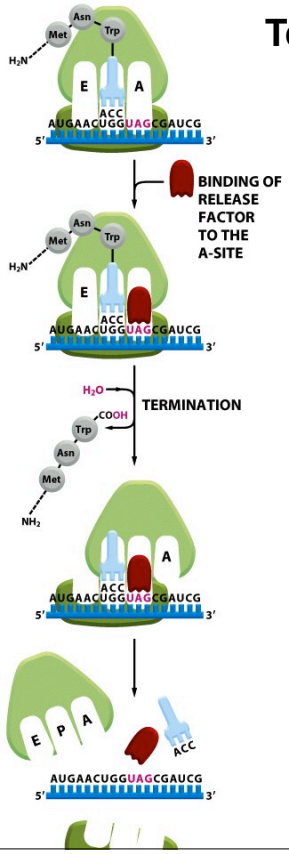
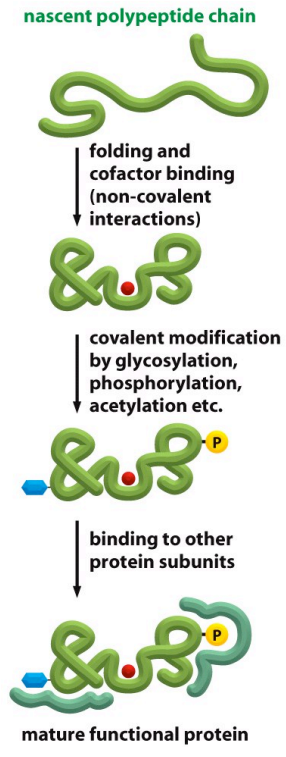


Figure 6-72 (part 5 of 5) *Molecular Biology of the Cell* (© Garland Science 2008)

Terminación





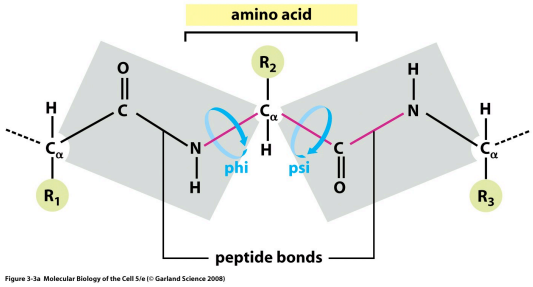


Figure 3-3a Molecular Biology of the Cell 5/e (© Garland Science 2008)

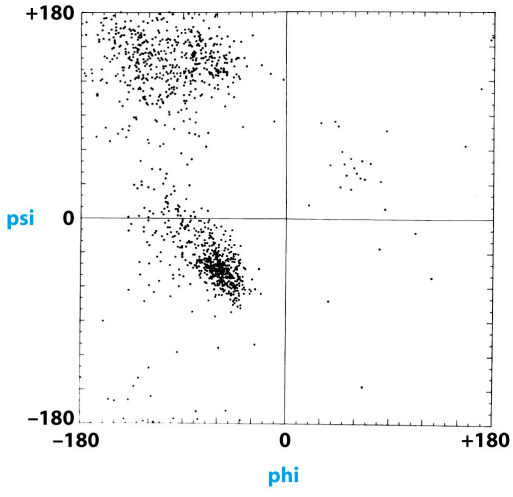


Figure 3-3b Molecular Biology of the Cell 5/e (© Garland Science 2008)

Figure 6-82 *Molecular Biology of the Cell* (© Garland Science 2008)

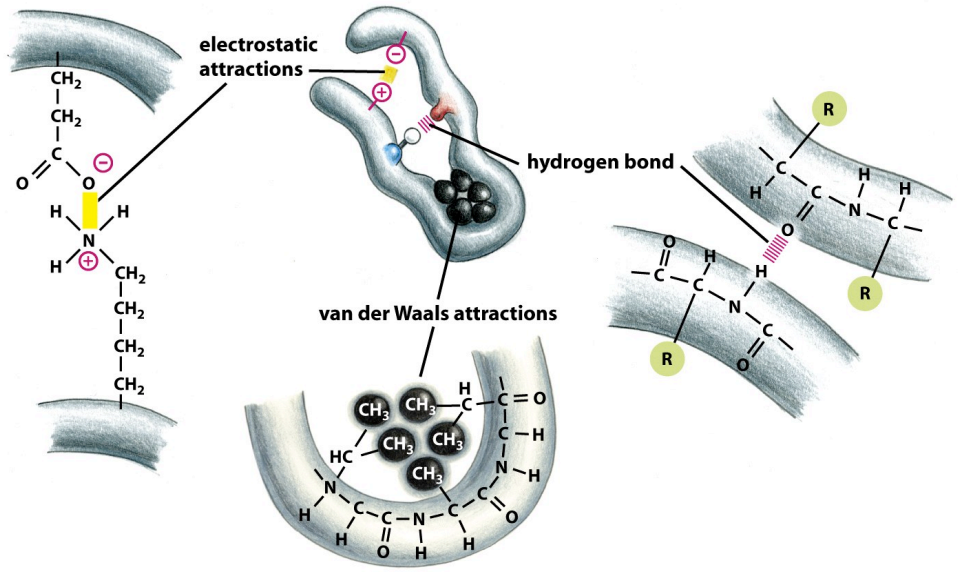


Figure 3-4 Molecular Biology of the Cell 5/e (© Garland Science 2008)

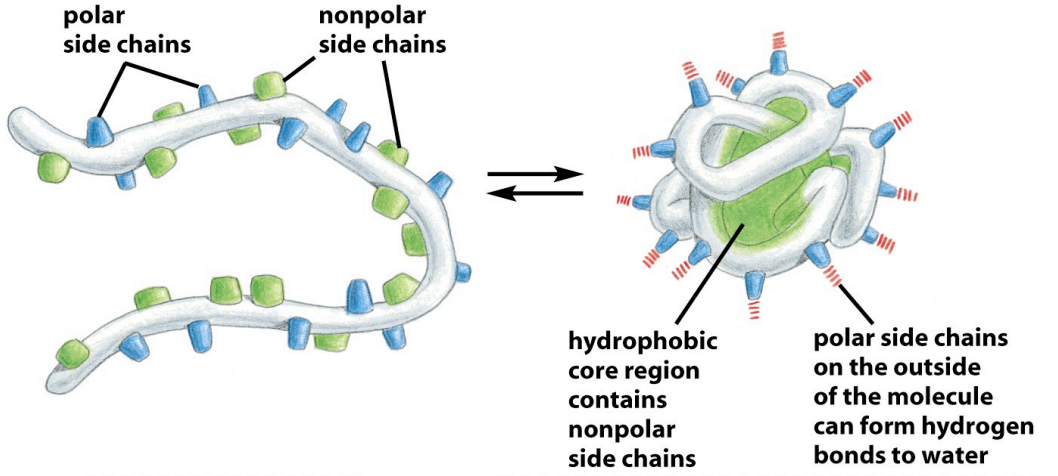


Figure 3-5 Molecular Biology of the Cell 5/e (© Garland Science 2008)