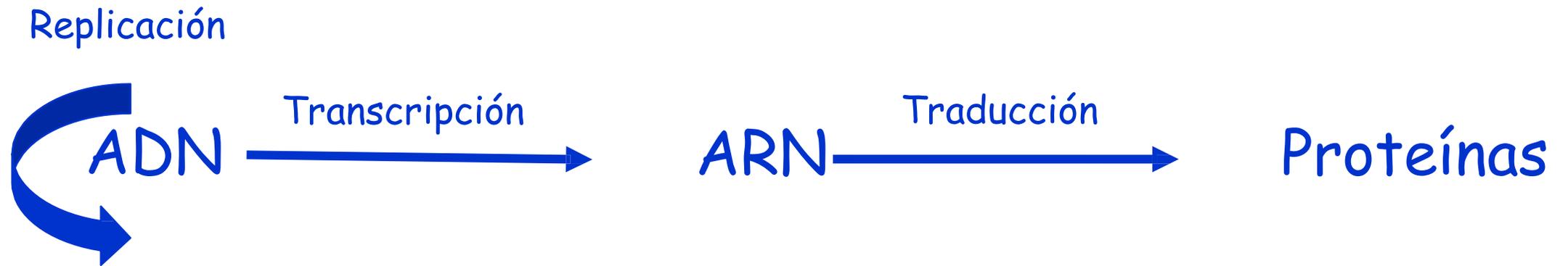


Transcripción

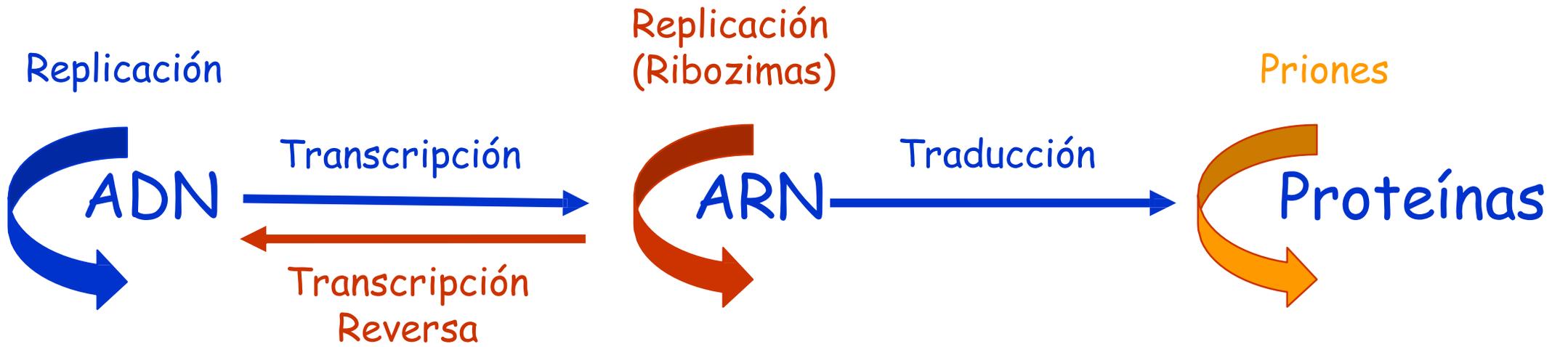
Soraya Gutiérrez Gallegos, PhD
Universidad de Concepción

Objetivo: Determinar la información que contiene el ADN, en relación con su expresión en ARN y proteínas.

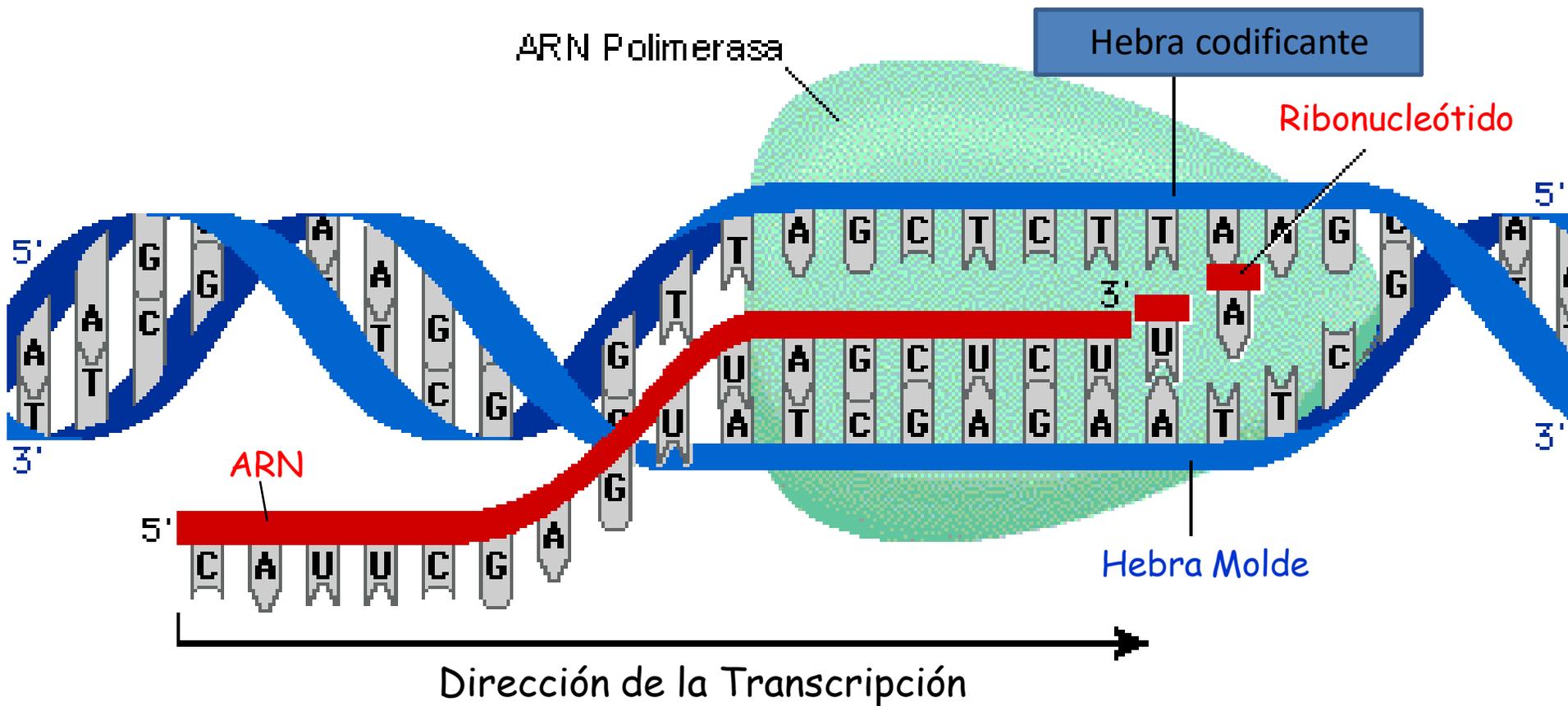
Modelo Propuesto por Crick: Dogma de la Biología Molecular



Modelo Actual



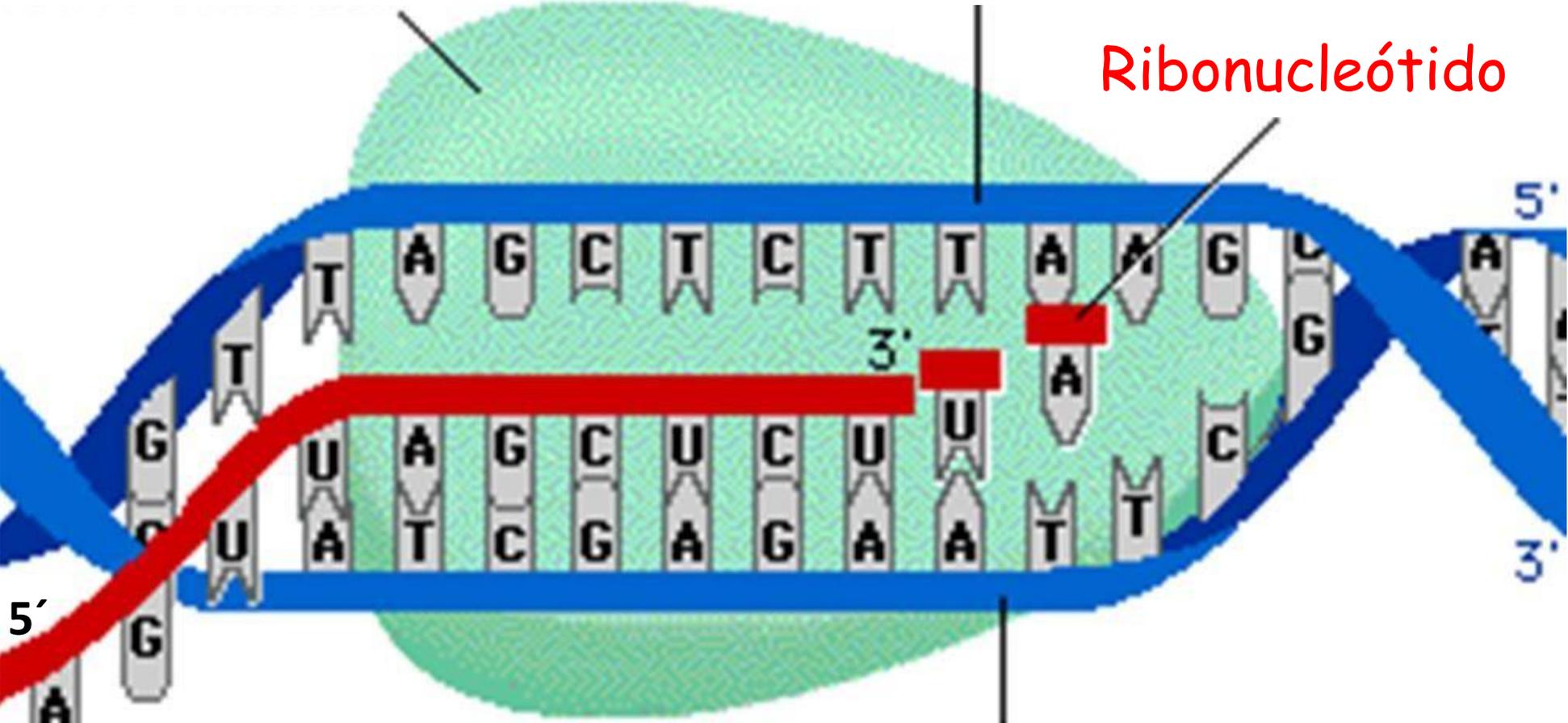
ADN $\xrightarrow{\text{Transcripción}}$ ARN



ARN Polimerasa

Hebra Codificante

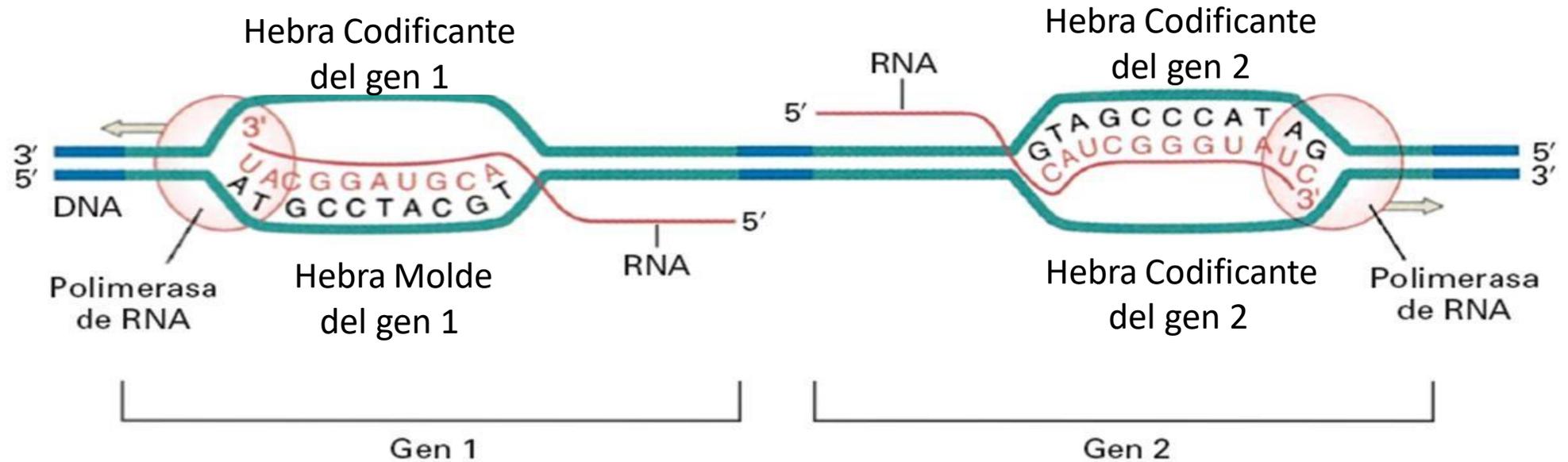
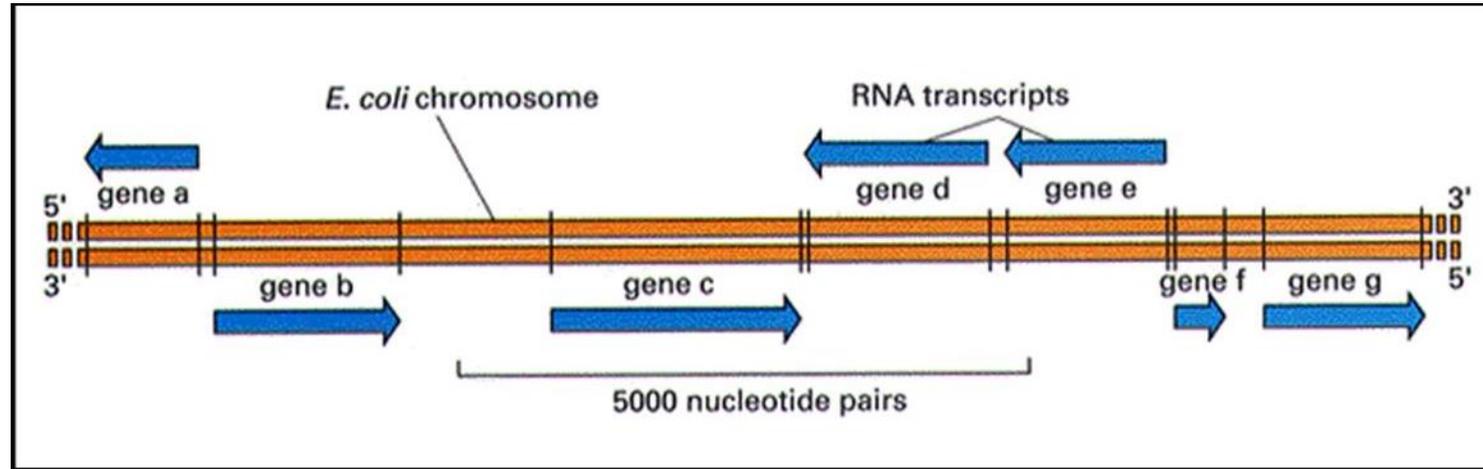
Ribonucleótido



ARN

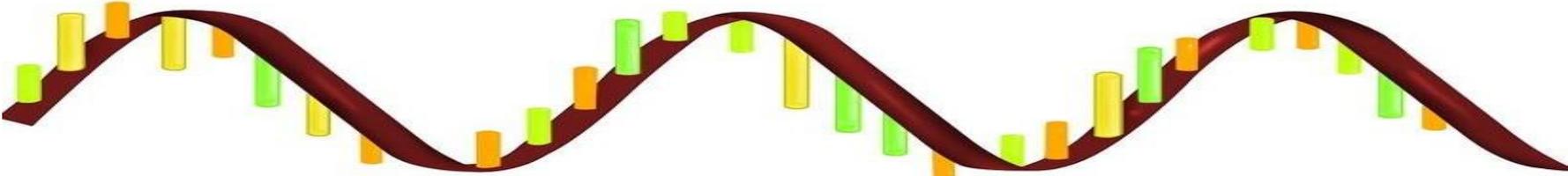
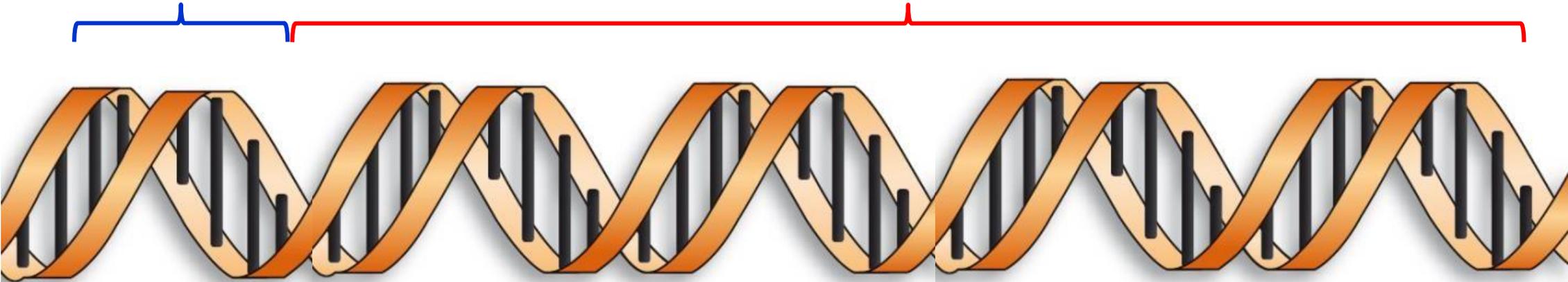
Hebra Molde

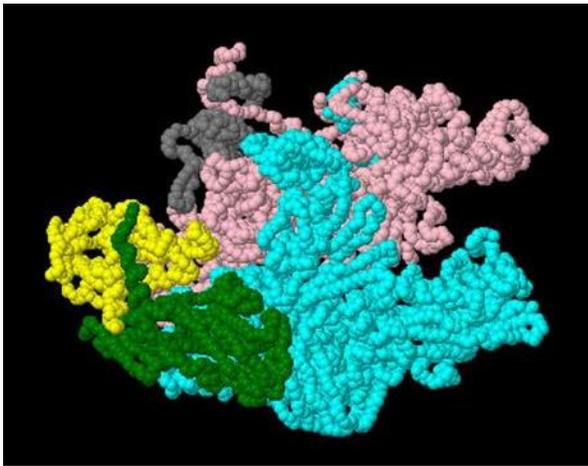
¿Cuál hebra es la codificante?



Promotor

Región Transcrita



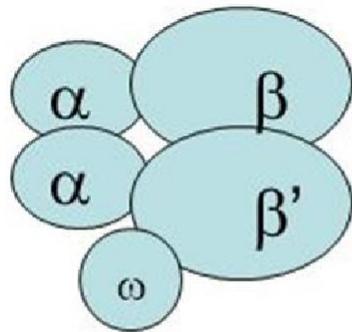


APOENZIMA = 4 subunidades

ARN polimerasa

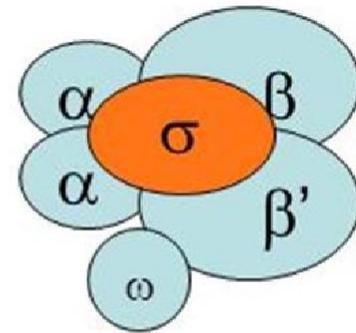
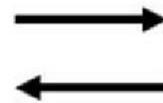
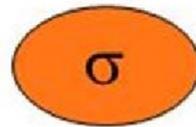
PROCARIOTAS

- 2 subunidades α = ensamblan el enzima y promueven interacciones
- β = actividad catalítica
- β' = se une al DNA
- ω = ensamblaje y regulación expresión
- σ = Se une a las regiones promotoras y posiciona a la holoenzima en el sitio de inicio



Enzima Core

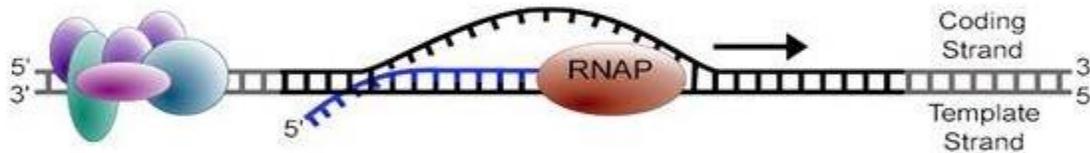
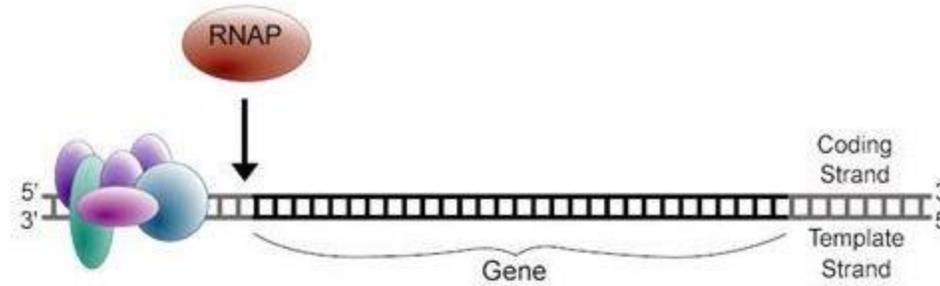
+



Holoenzima

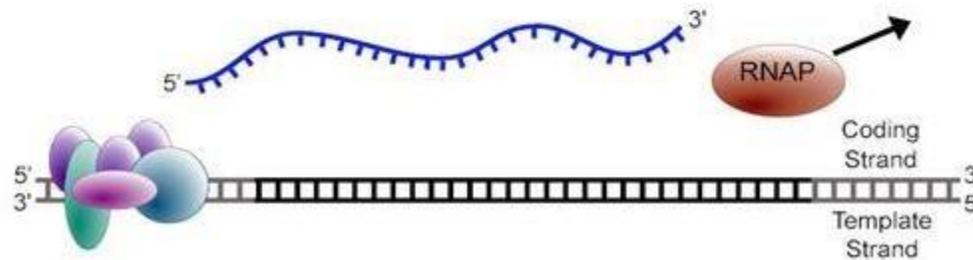
Etapas de la Transcripción

Iniciación

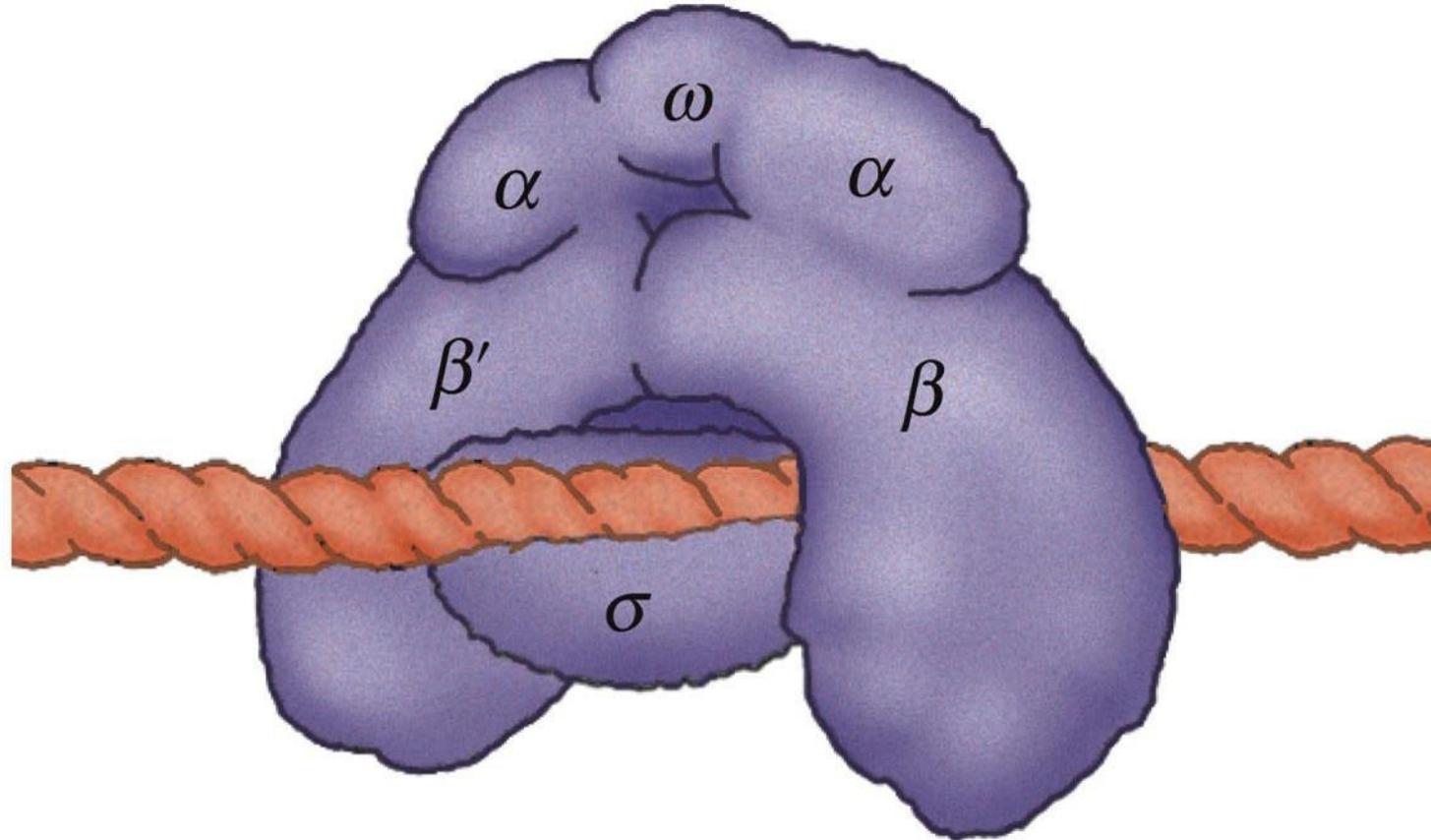


Elongación

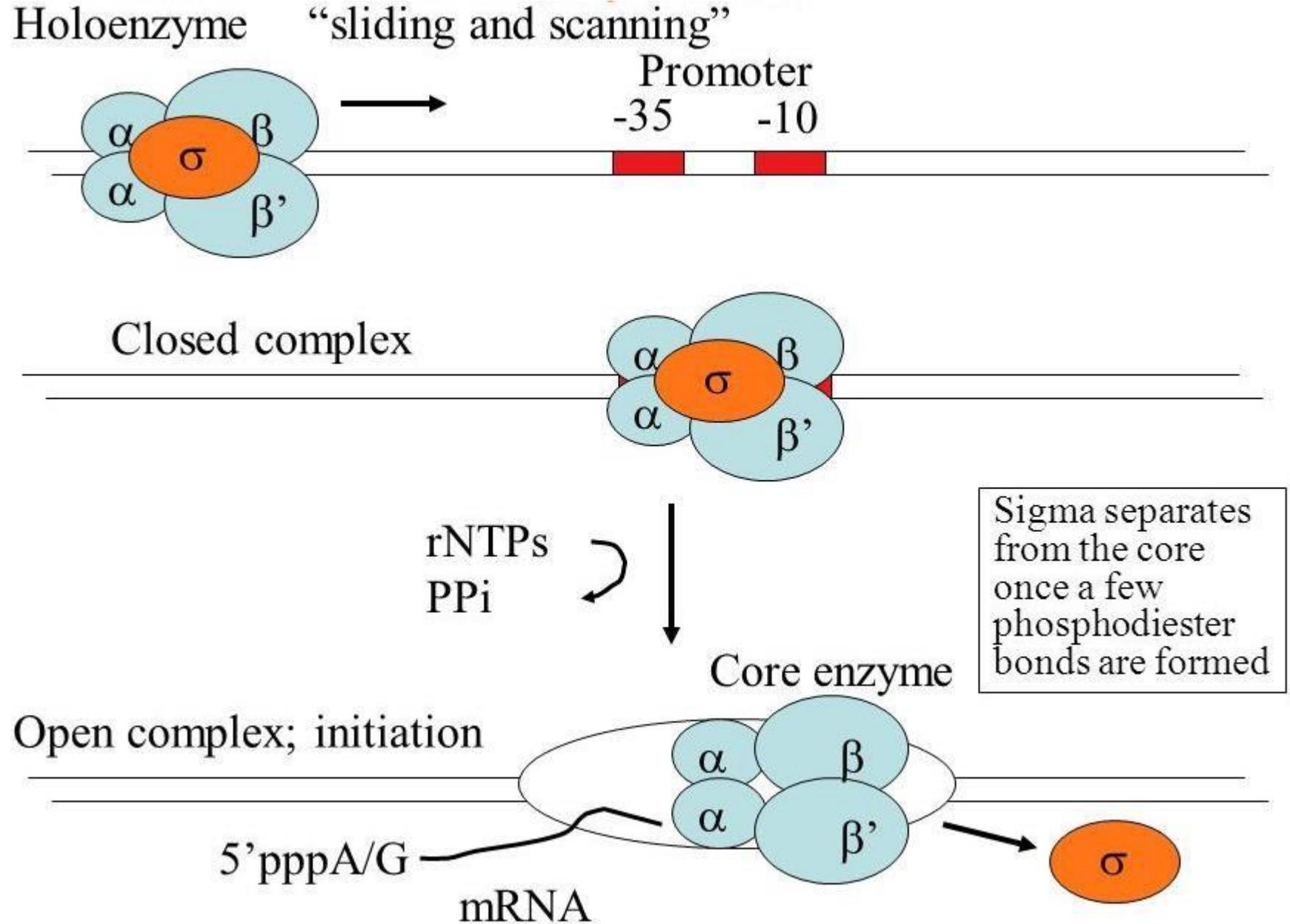
Término



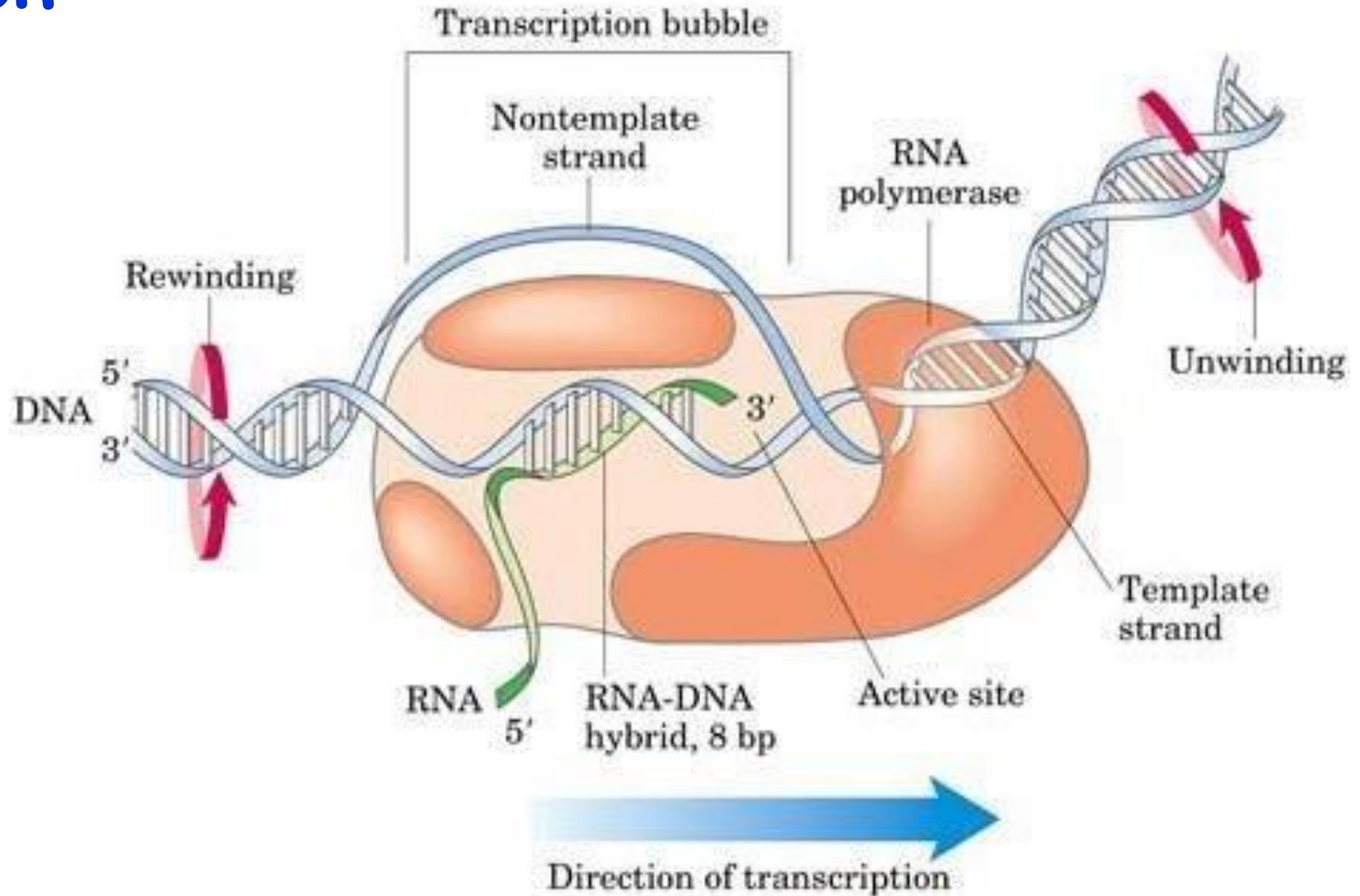
Iniciación



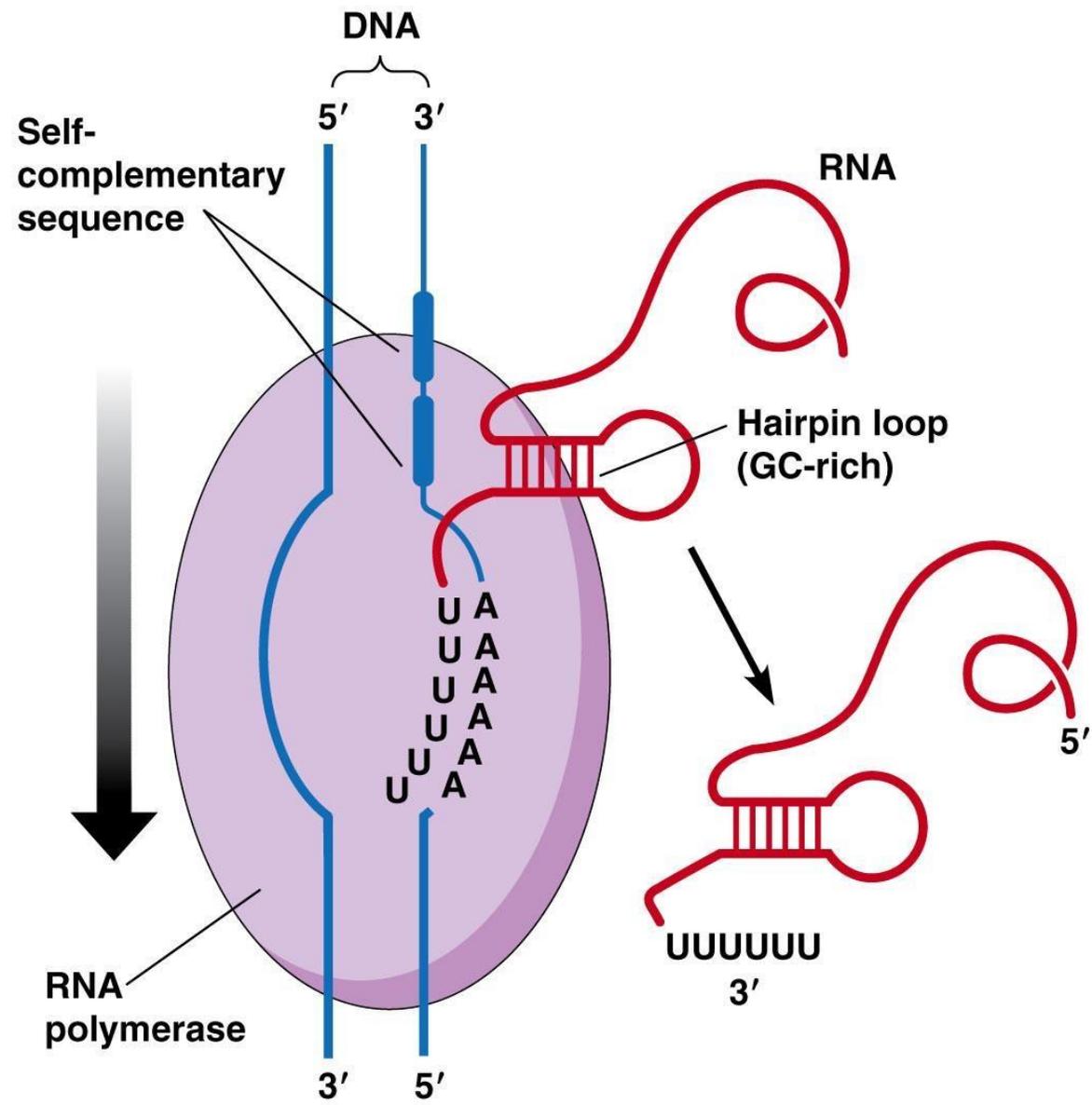
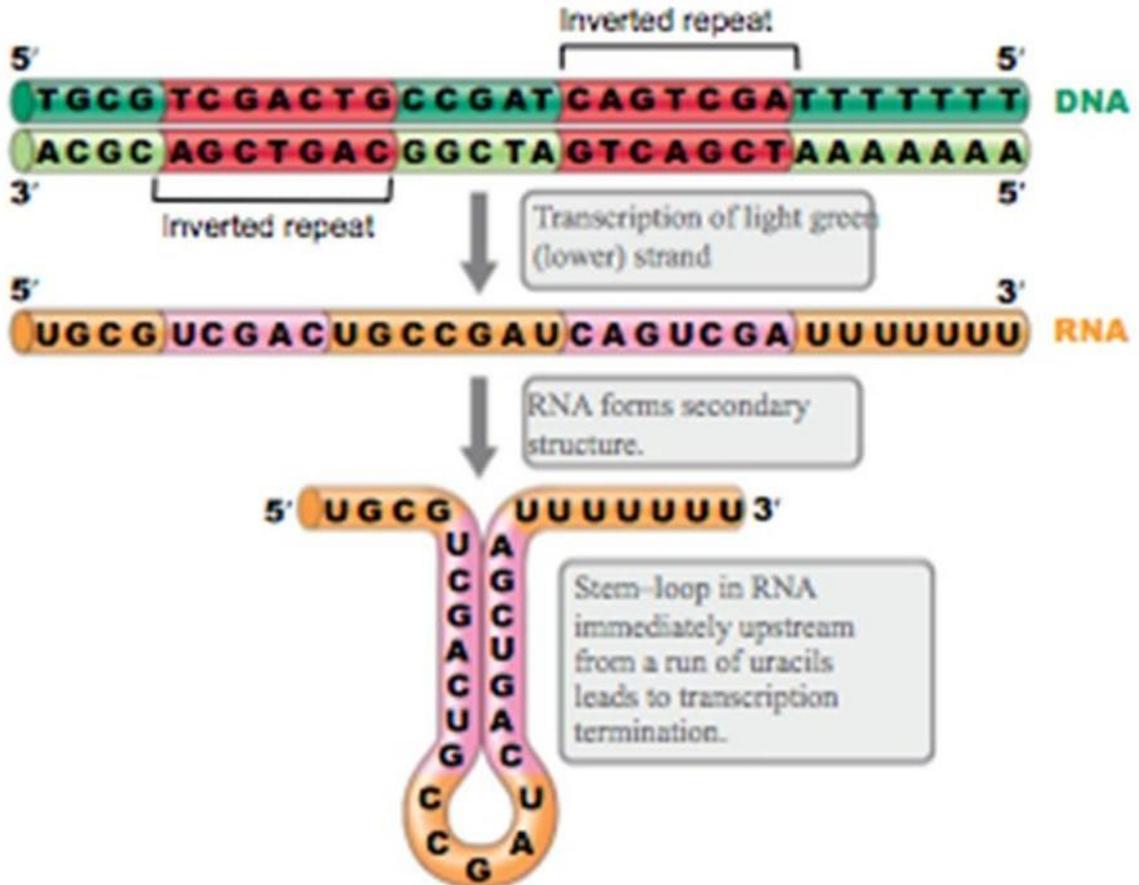
Iniciación



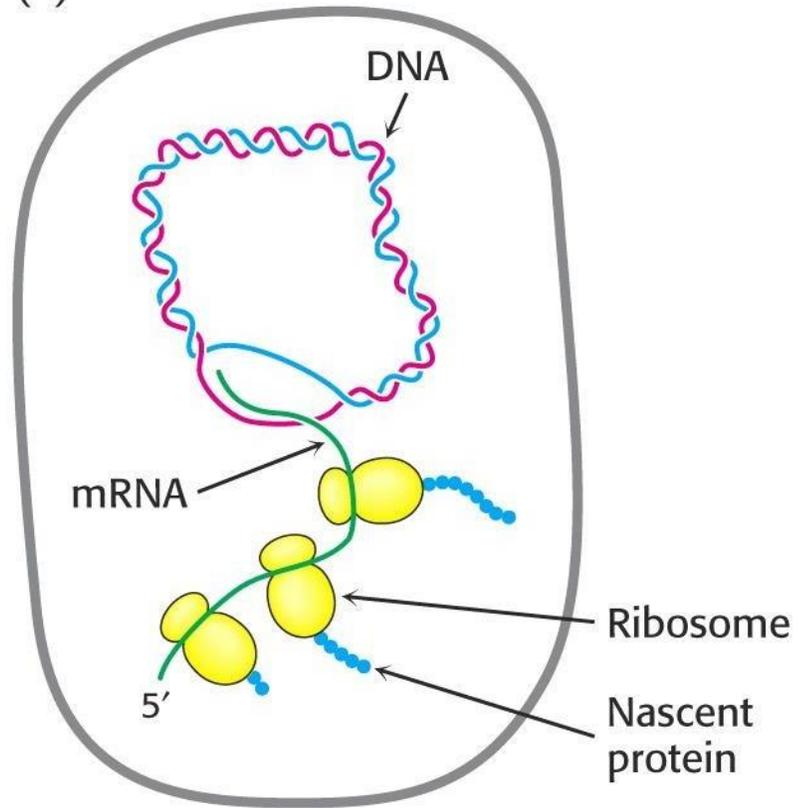
Elongación



Término independiente de ρ

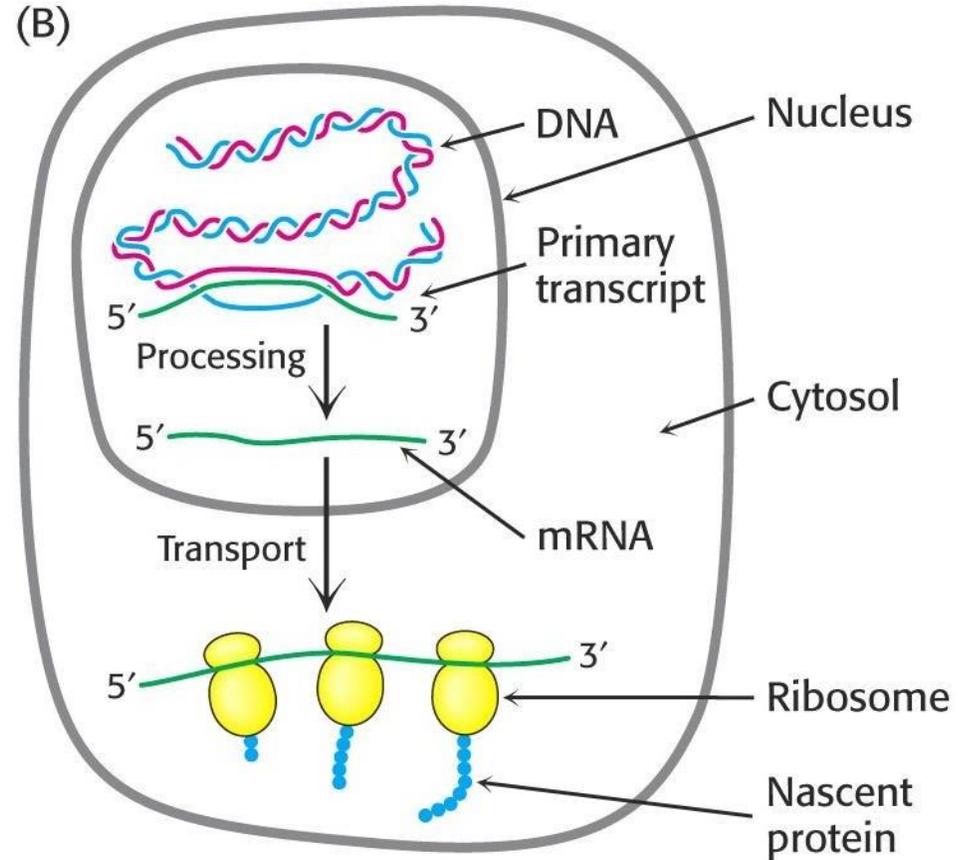


(A)

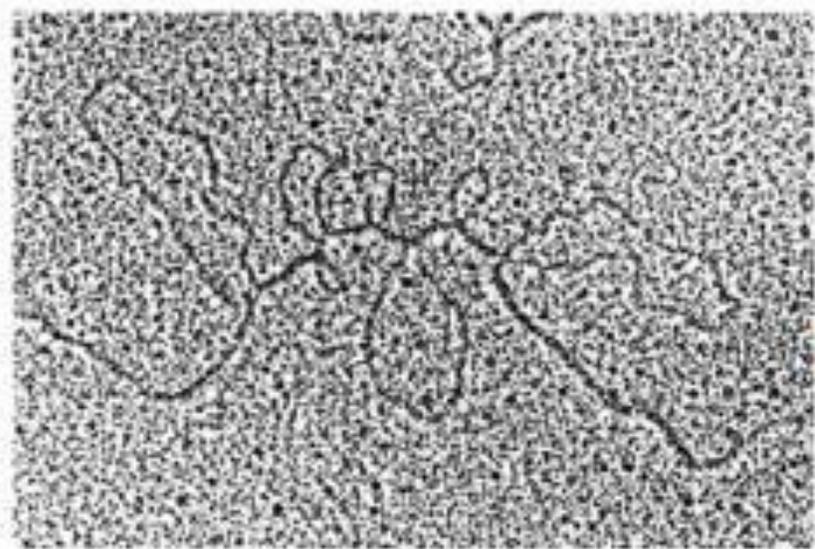


PROKARYOTE

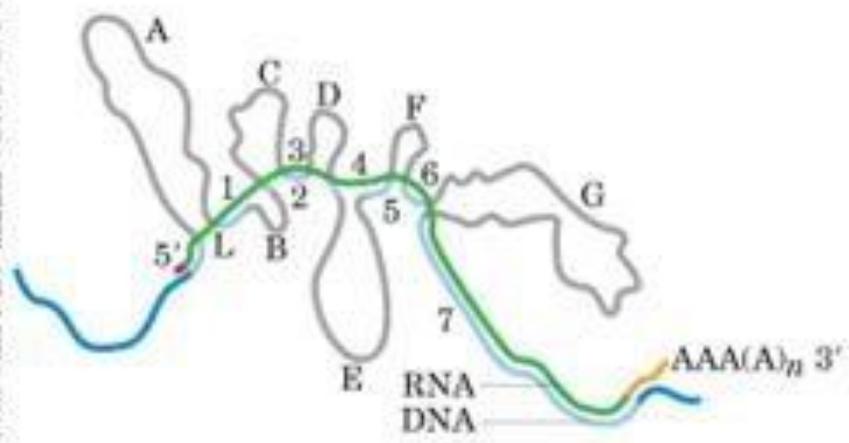
(B)



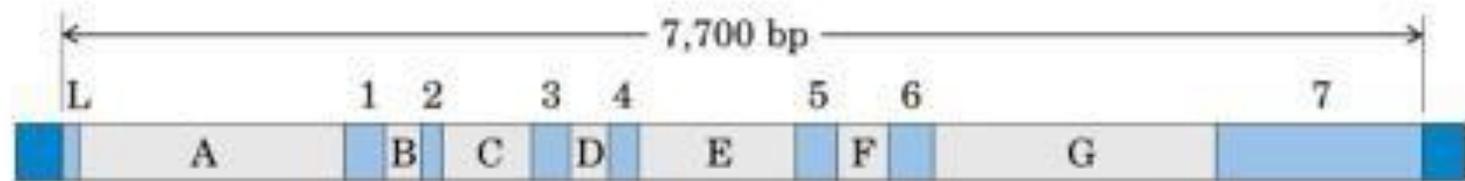
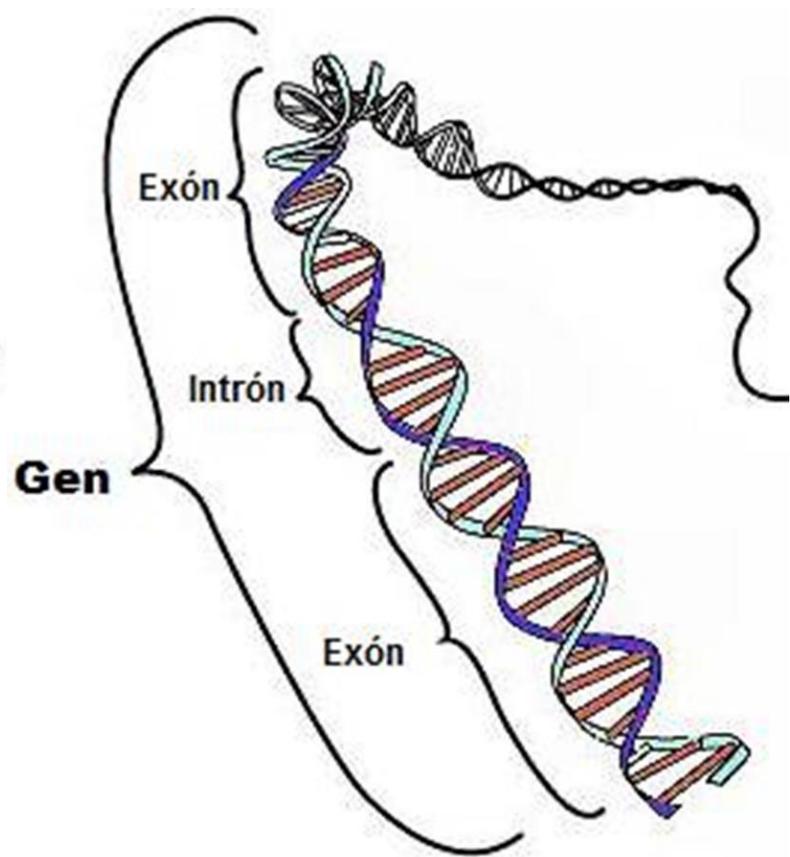
EUKARYOTE



(a)

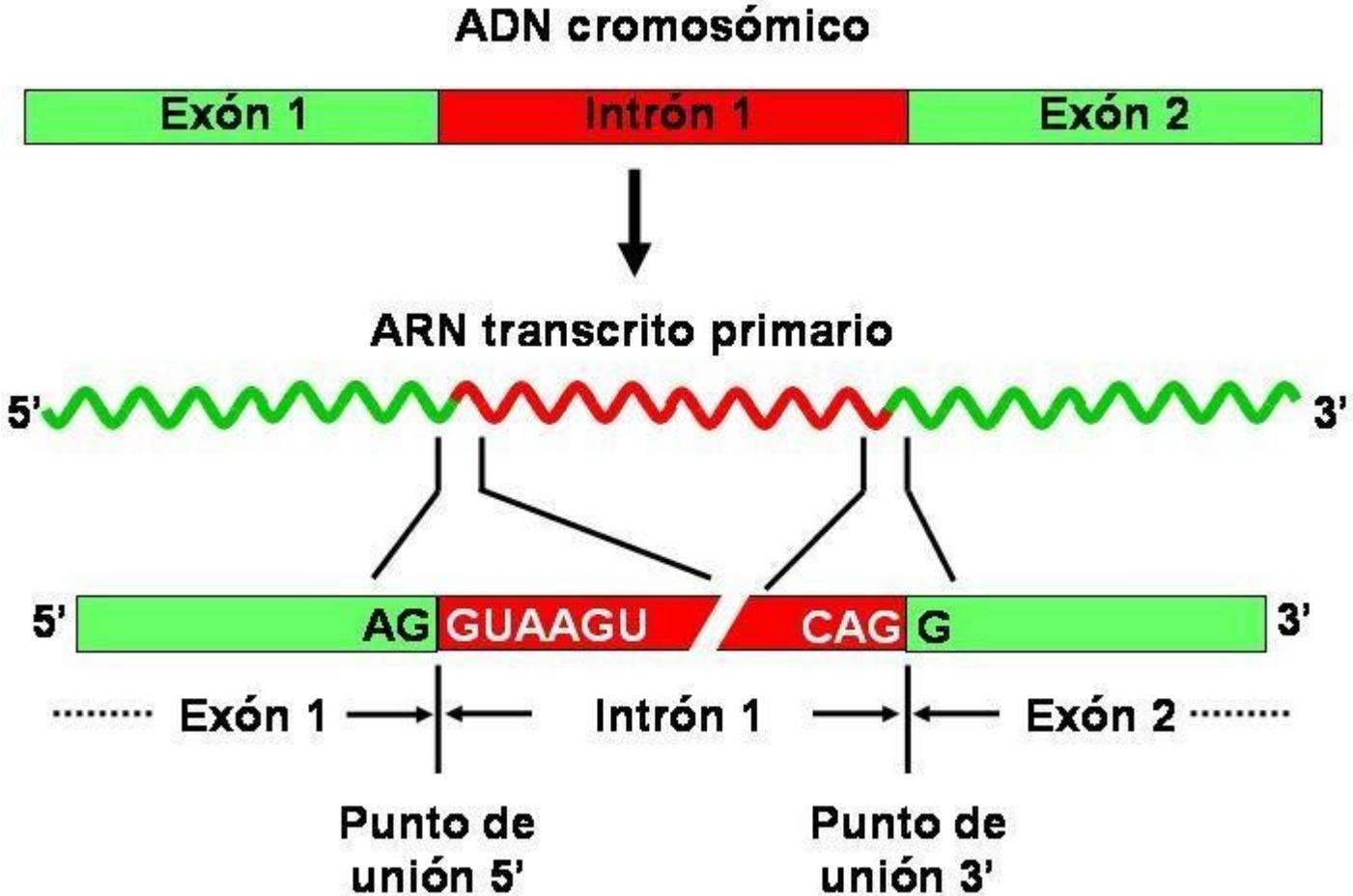


(b)

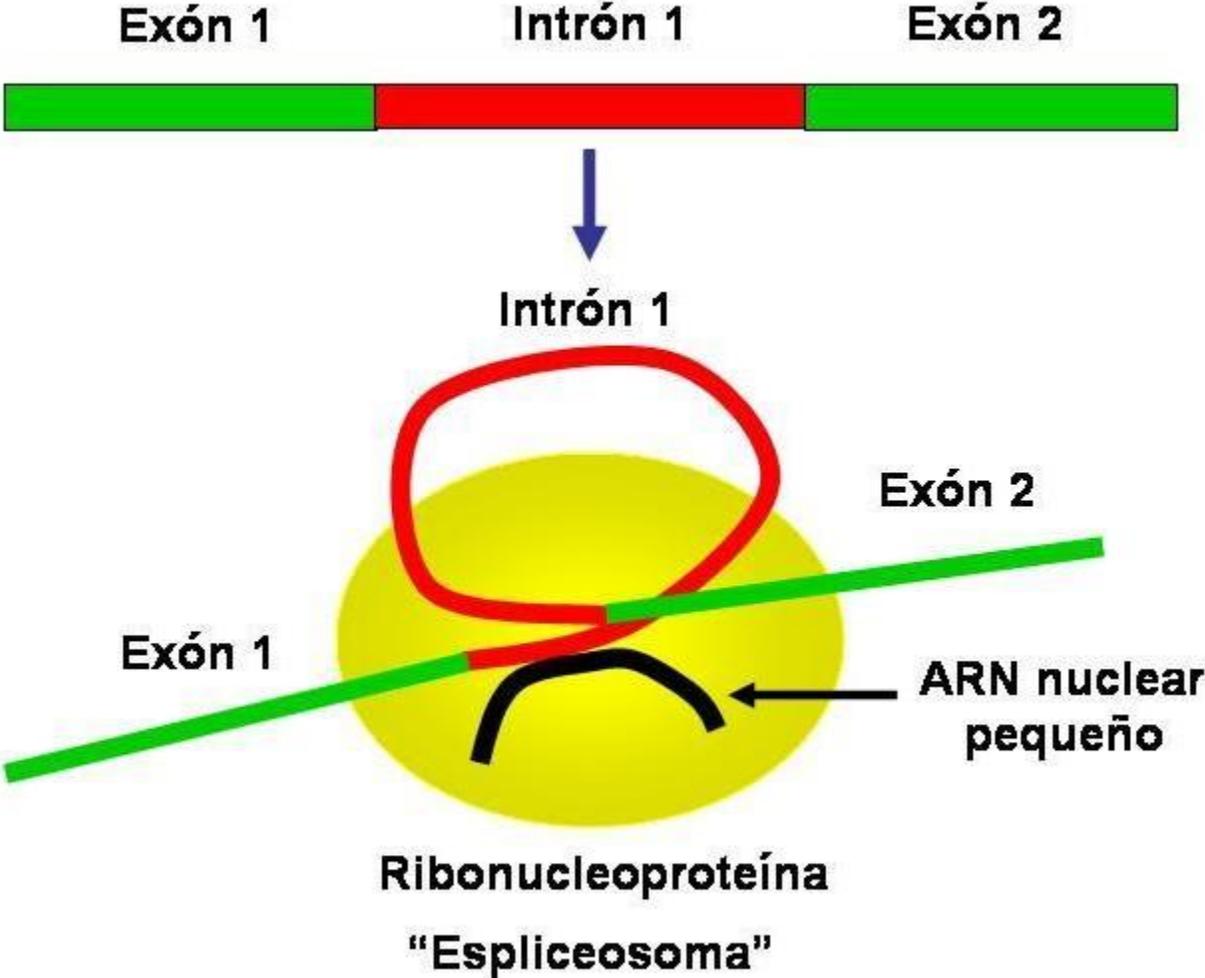


(c)

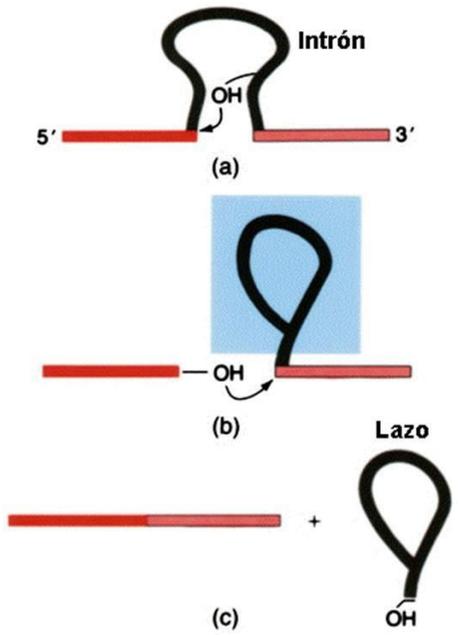
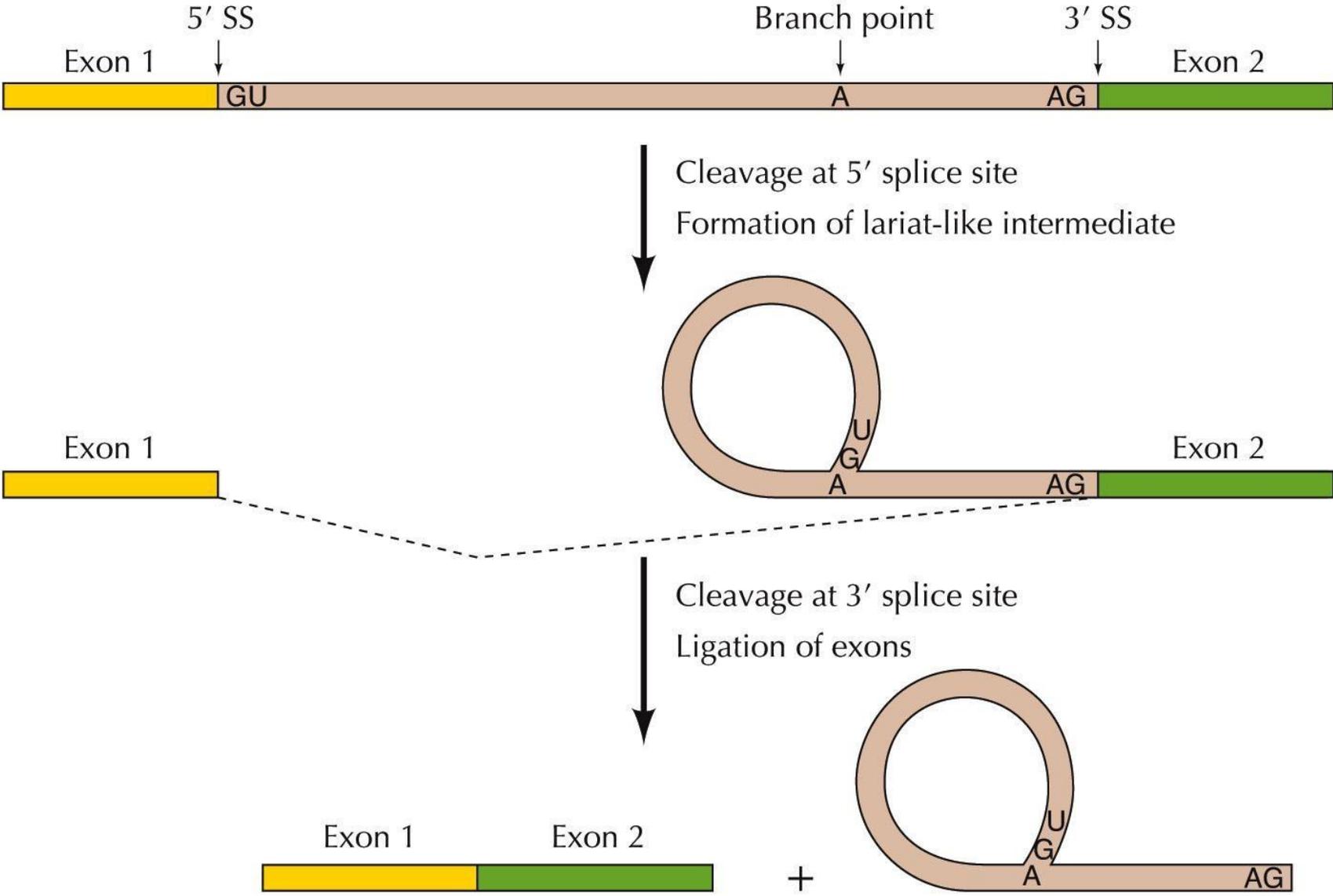
Procesamiento: Splicing



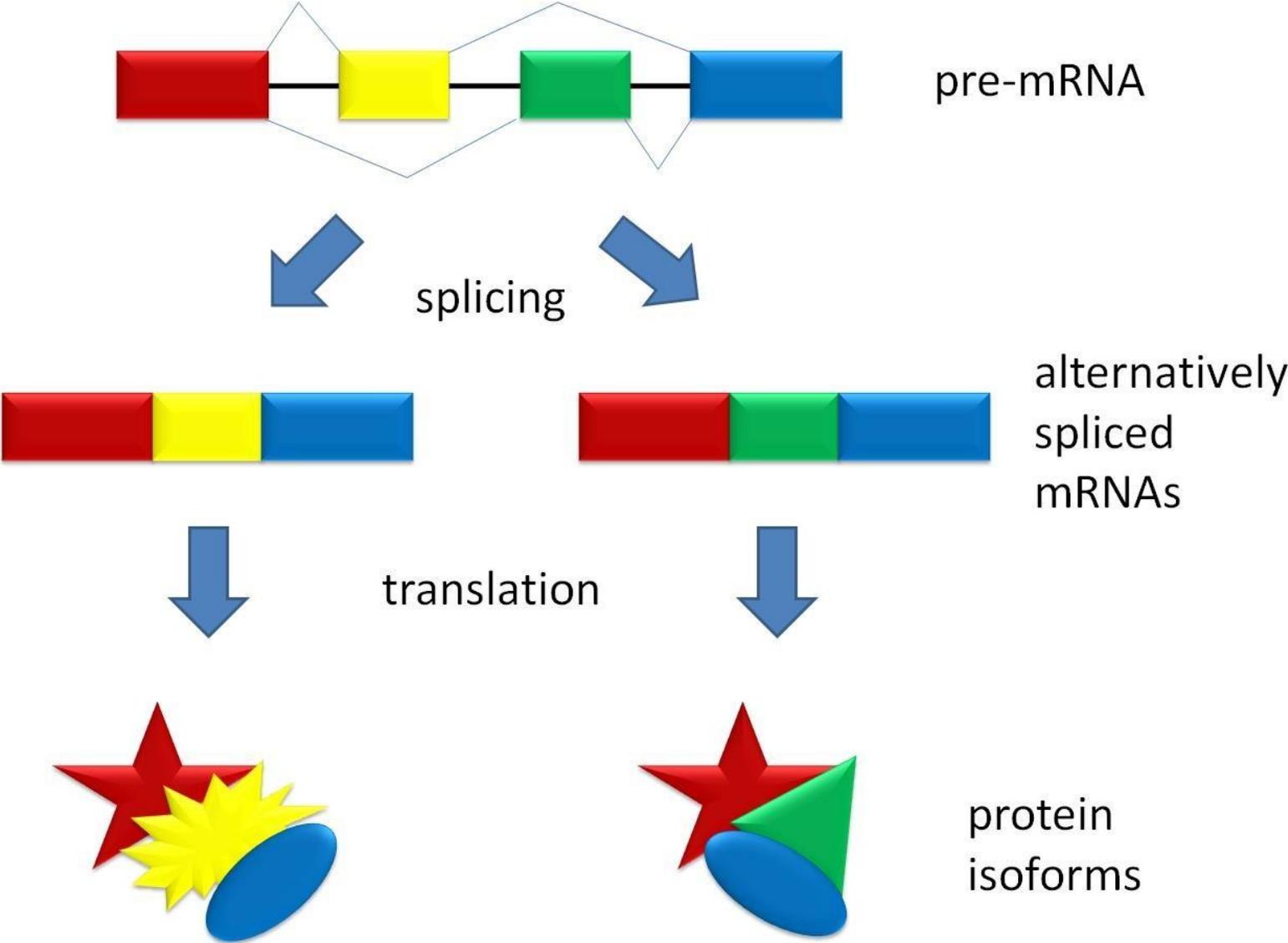
Procesamiento: Splicing



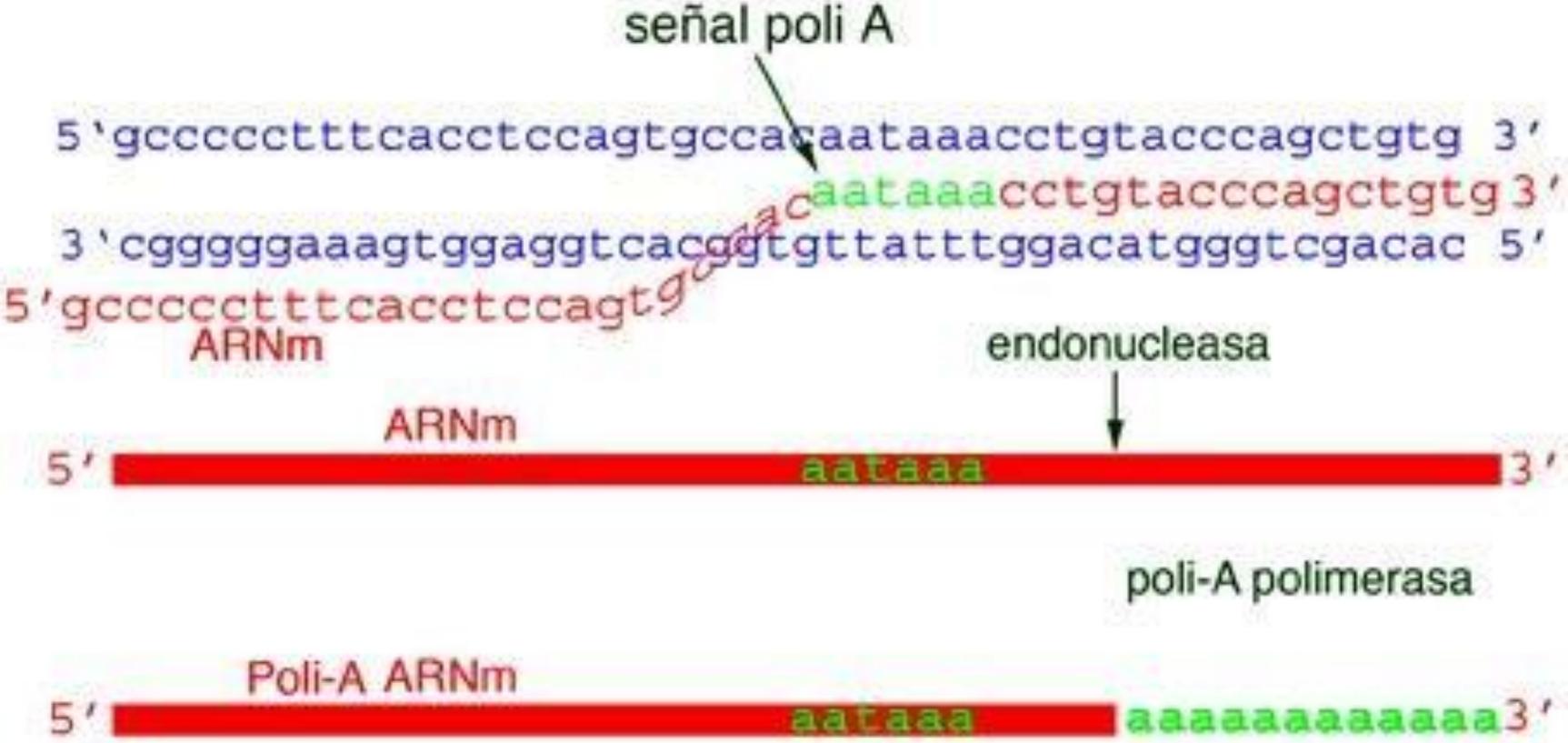
Procesamiento: Splicing



Procesamiento: Splicing

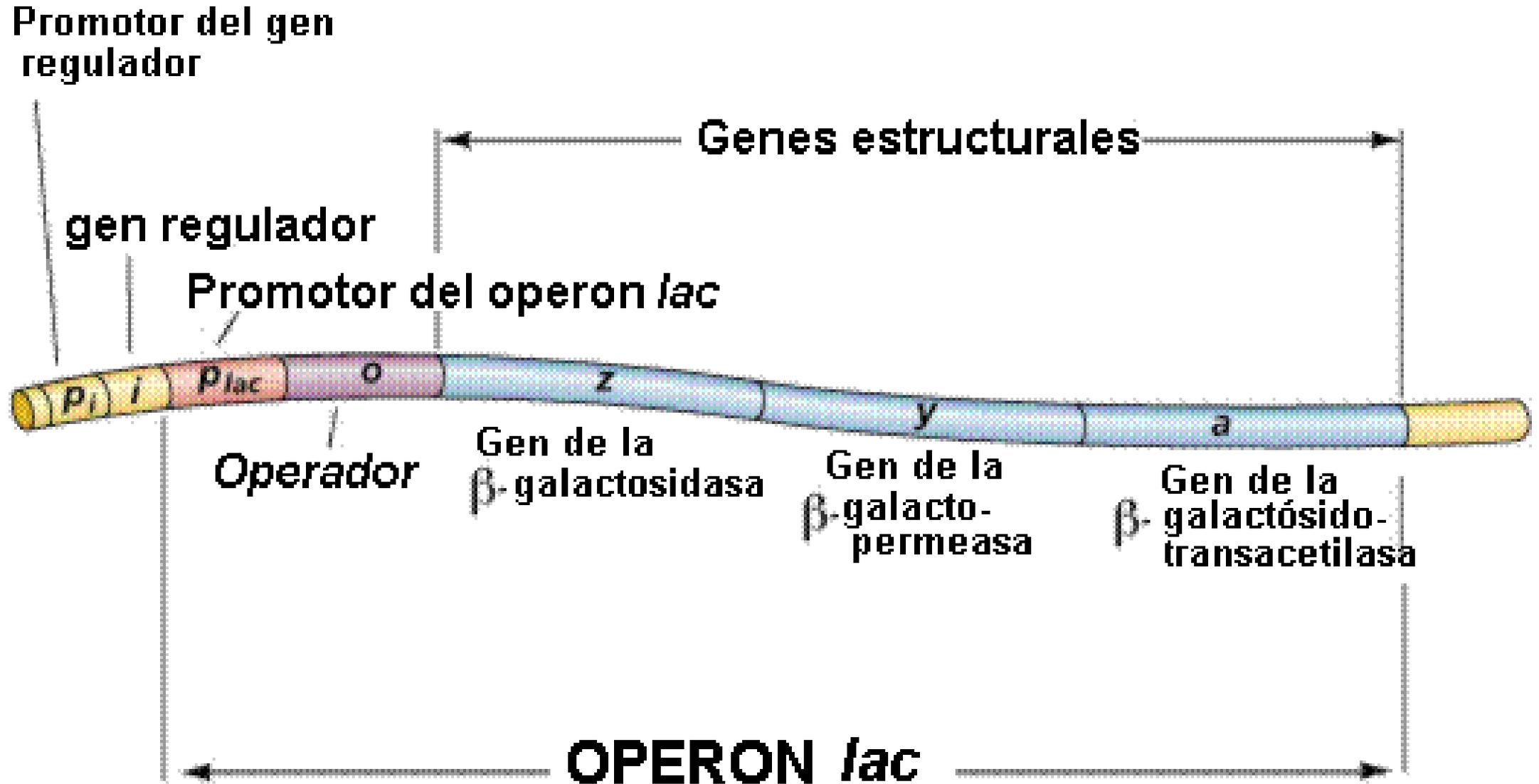


Procesamiento: Adición de cola poliA

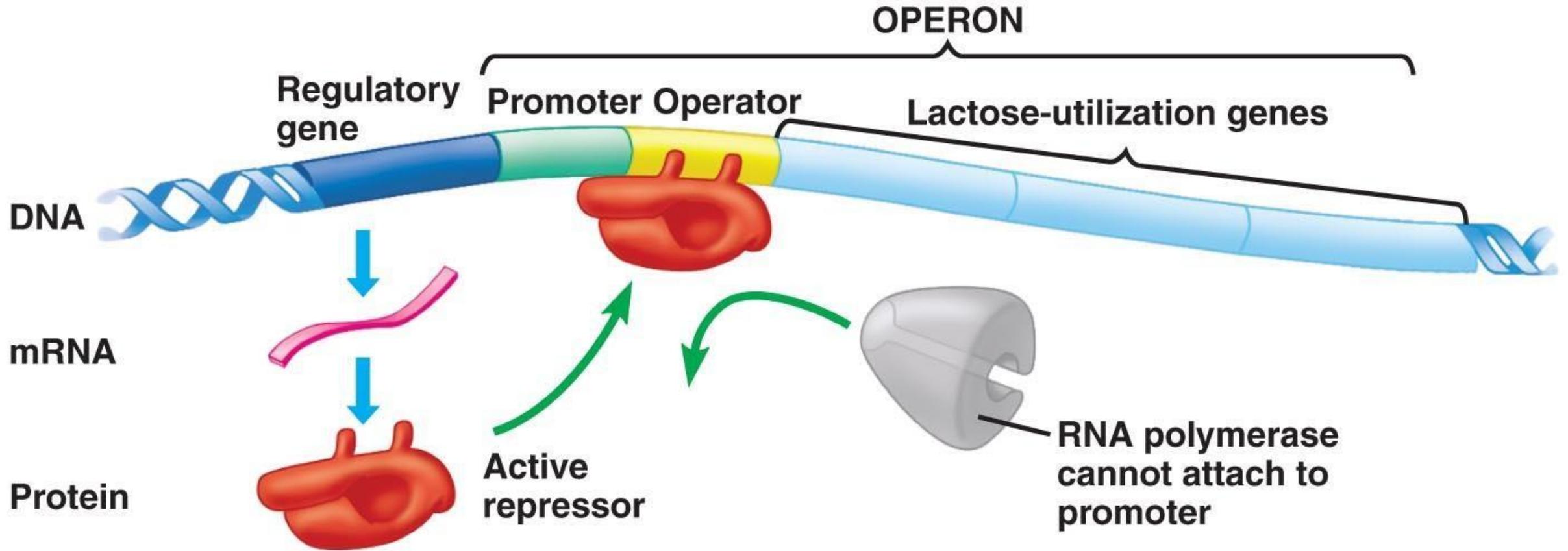


<u>Característica</u>	<u>Procariota</u>	<u>Eucariota</u>
<u>Promotor</u>	Cajas y zona operadora	Solo cajas
<u>Cistrón</u>	Policistrones	Monocistrones
<u>RNA polimerasa</u>	una sola, con 5 subunidades distintas	3 RNA polimerasas.
<u>Estabilización</u>	El RNA recién transcrito, no tiene.	Contiene, al comienzo de la cadena, 7-metil-guanosina o CAP, y al final de la cadena, una secuencia poli A.
<u>Comienzo</u>	RNA pol, se autoacopla al promotor	RNA pol, necesita la presencia de proteínas de iniciación, que se unan antes que ella al ADN.
<u>Intrones</u>	No tiene	Tiene y se eliminan mediante splicing (corte y empalme).
<u>Lugar de acción</u>	Inmediatamente, al ser creado	En el citoplasma.

Regulación de la Transcripción: Operón Lac



Regulación de la Transcripción: Operón Lac



Operon turned off (lactose absent)

Regulación de la Transcripción: Eucariontes

