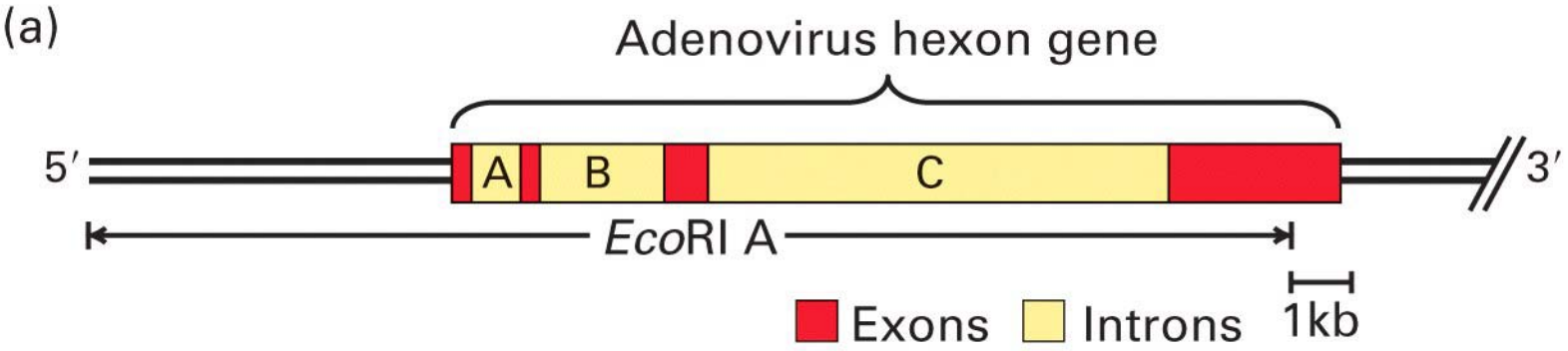
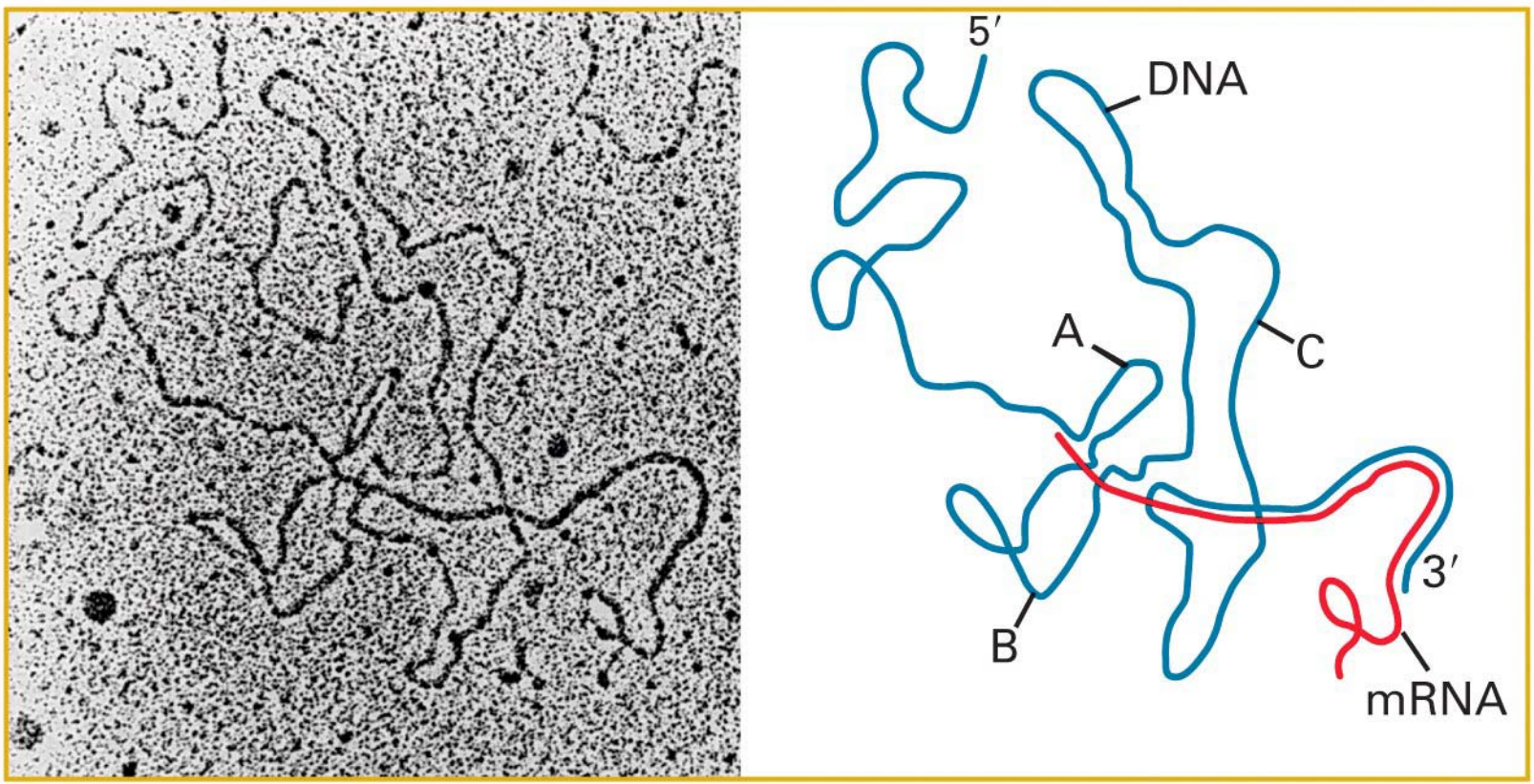
Chapitre 6:

Maturation des ARN

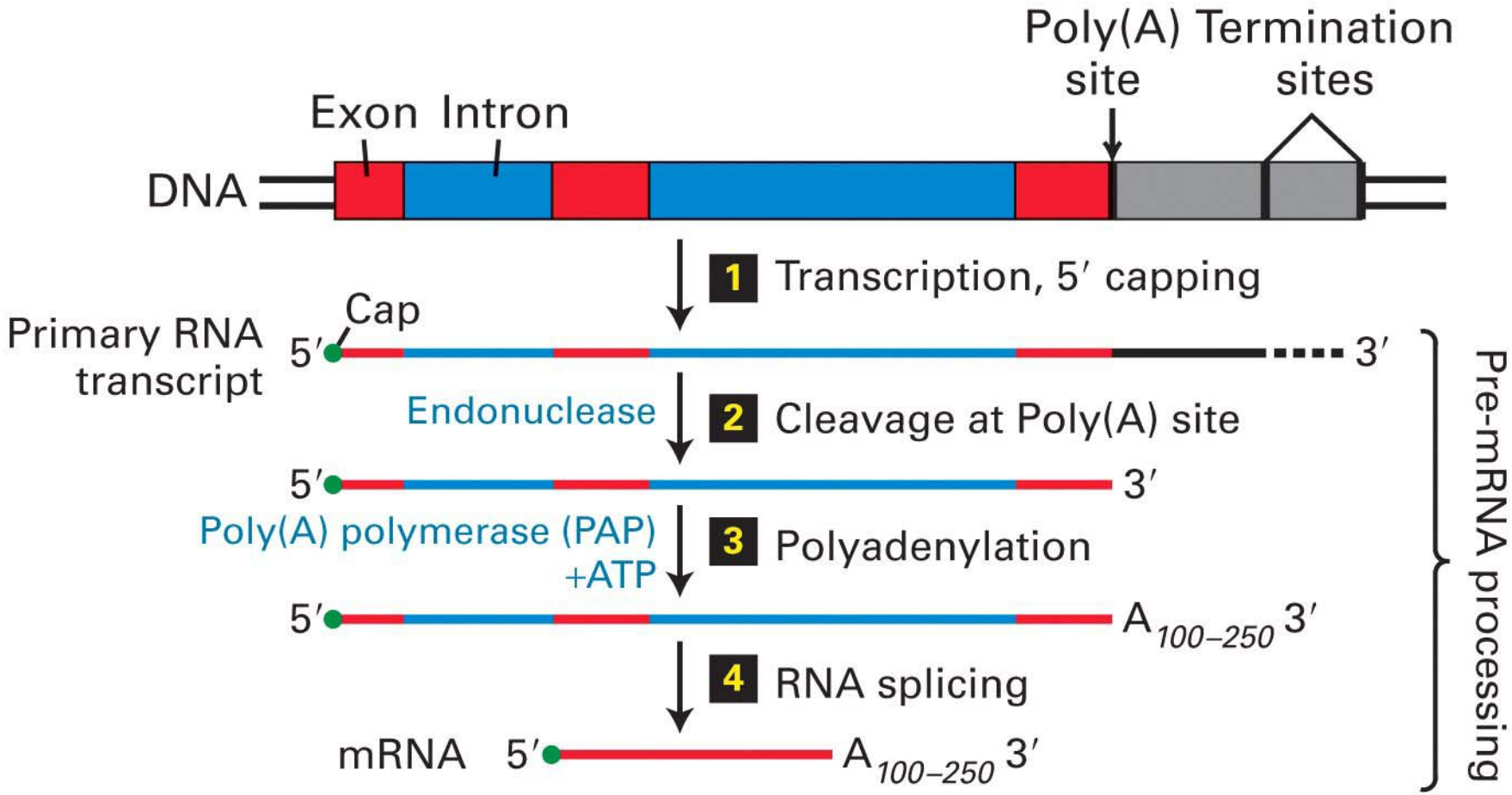
BOUCLES FORMEES PAR HYBRIDATION D'UN ARN MESSAGER EUCARYOTE AVEC L'ADN GENOMIQUE



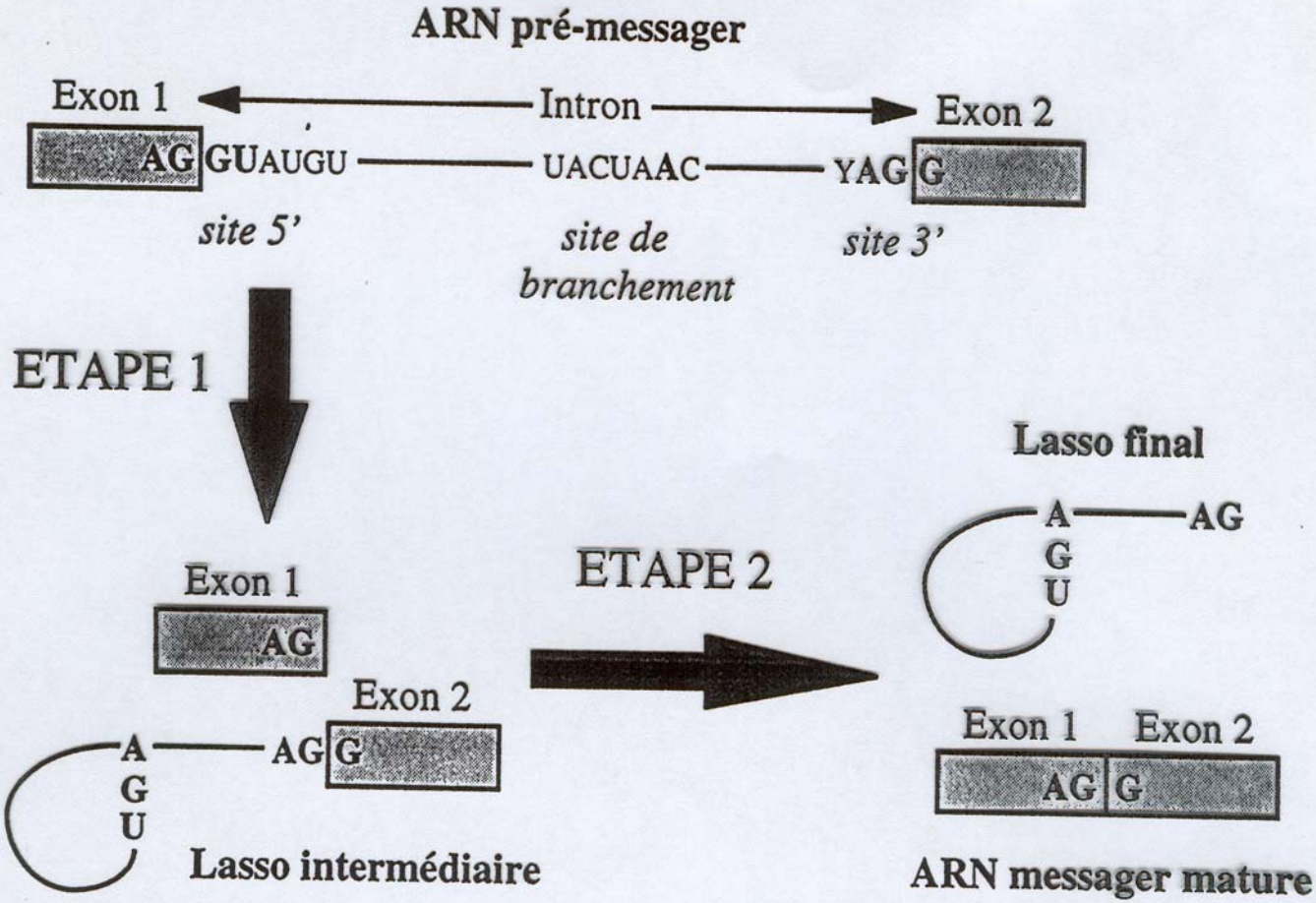
(b)



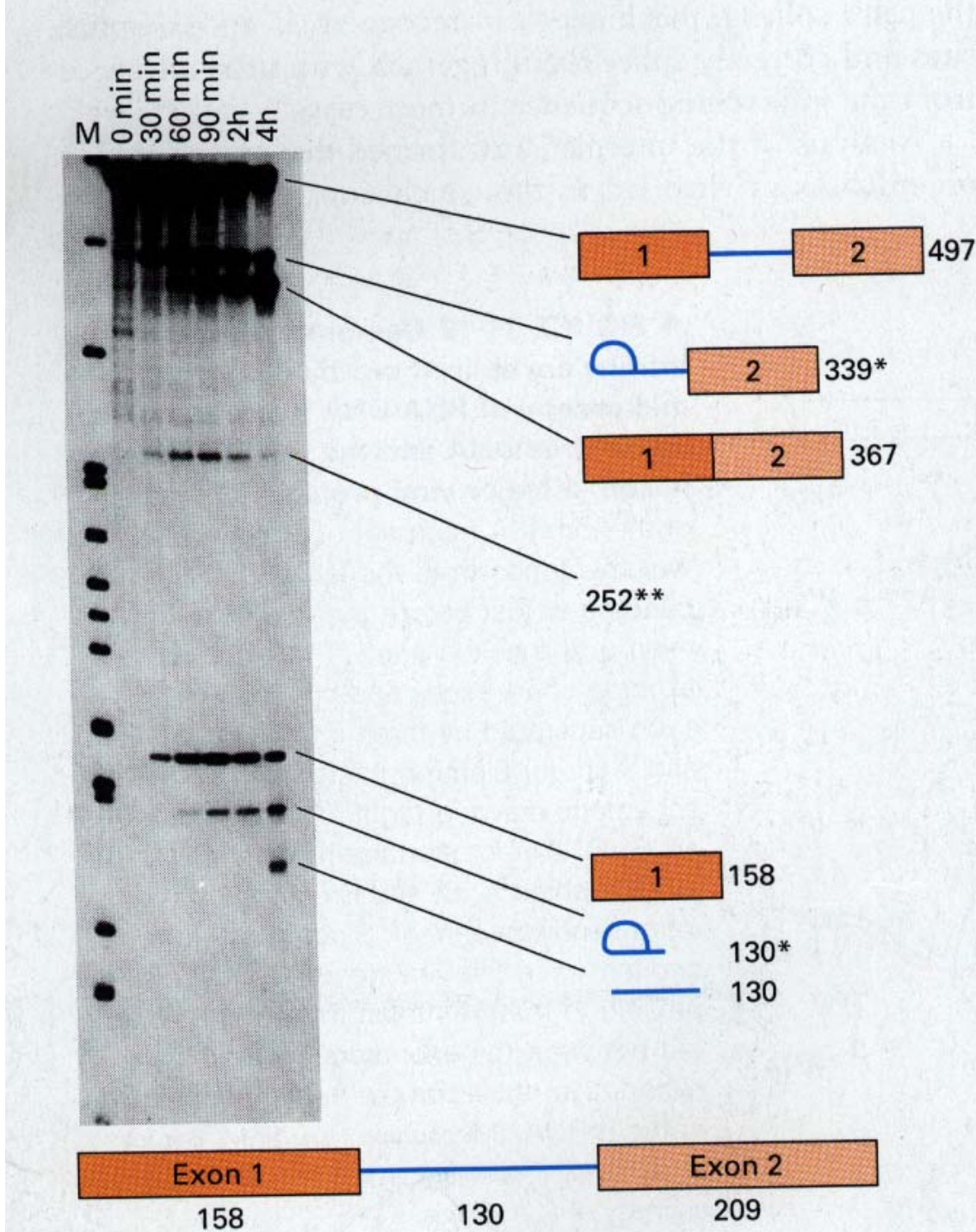
Etapes nécessaires pour faire ARN messager mature



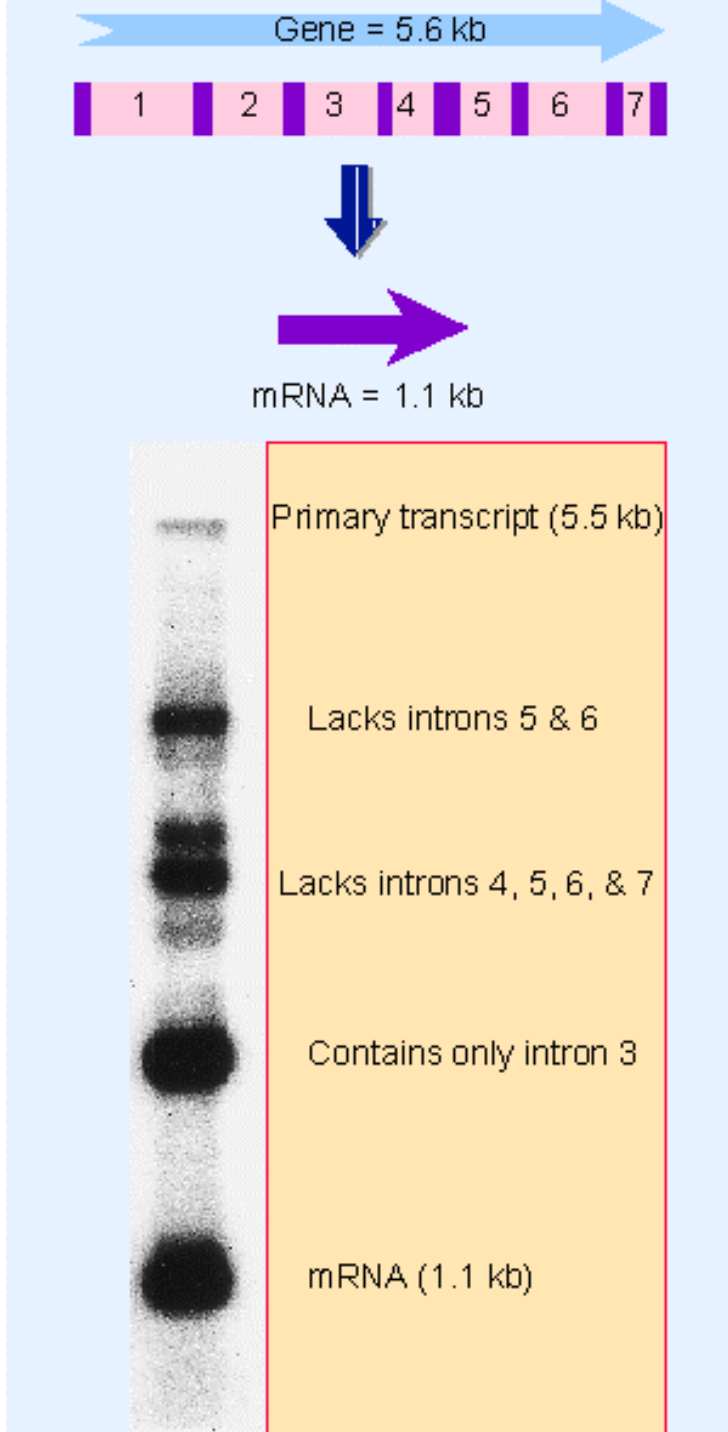
DEUX ETAPES DANS LA REACTION CATALYTIQUE D'EPISSAGE

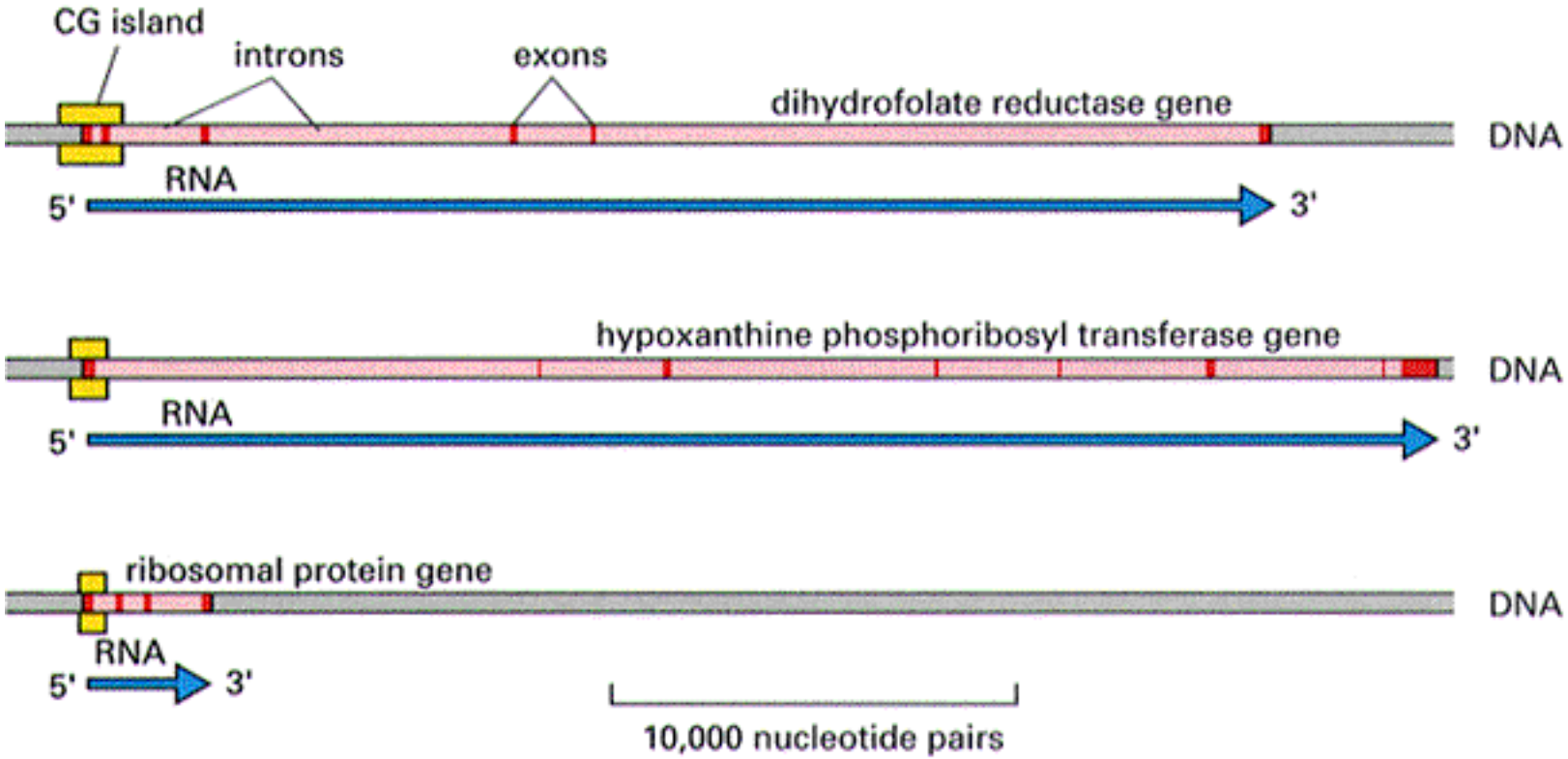


EPISSAGE IN VITRO D'UN ARN : MISE EN EVIDENCE SUR GEL DES PRODUITS INTERMEDIAIRES

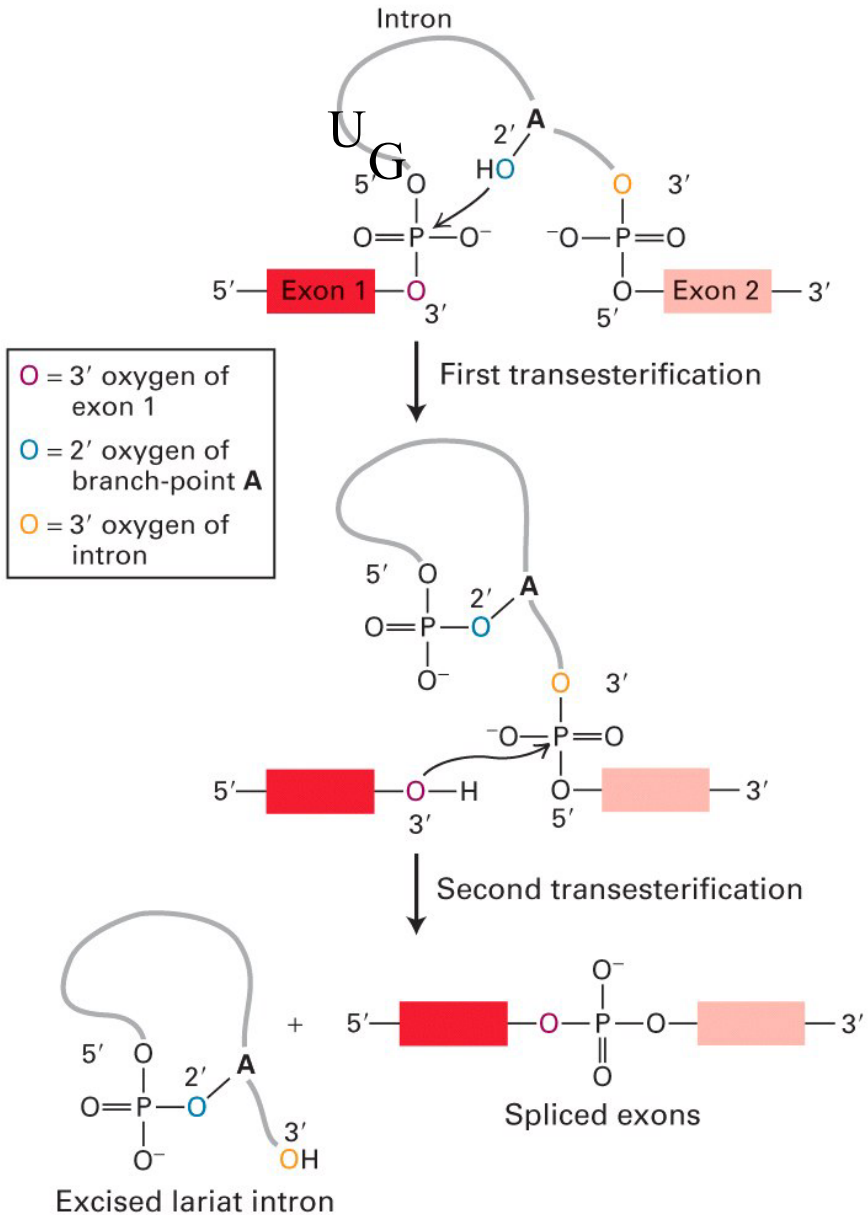


PRODUITS INTERMEDIAIRES OBTENUS AU COURS DE LA MATURATION DES ARN

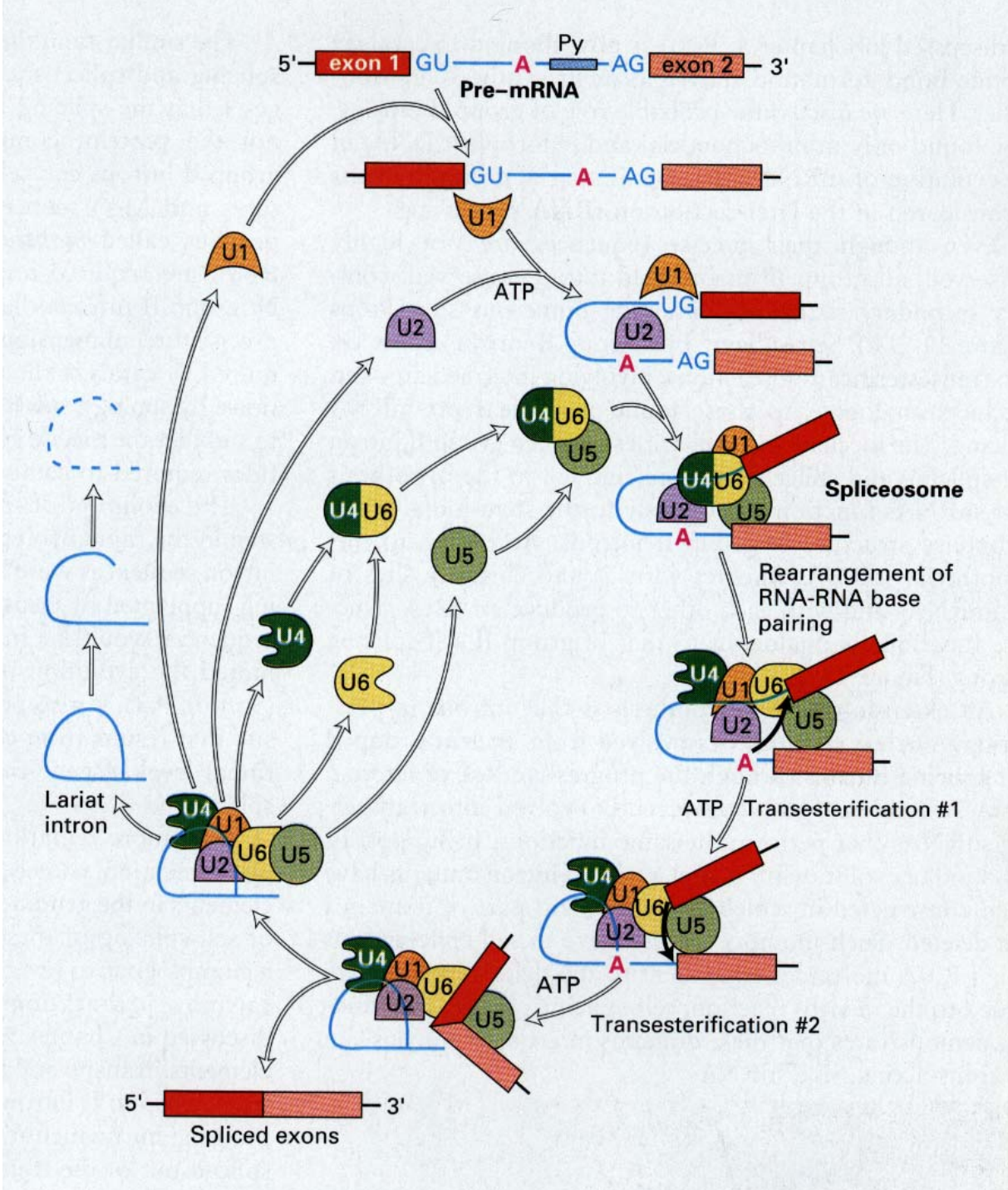




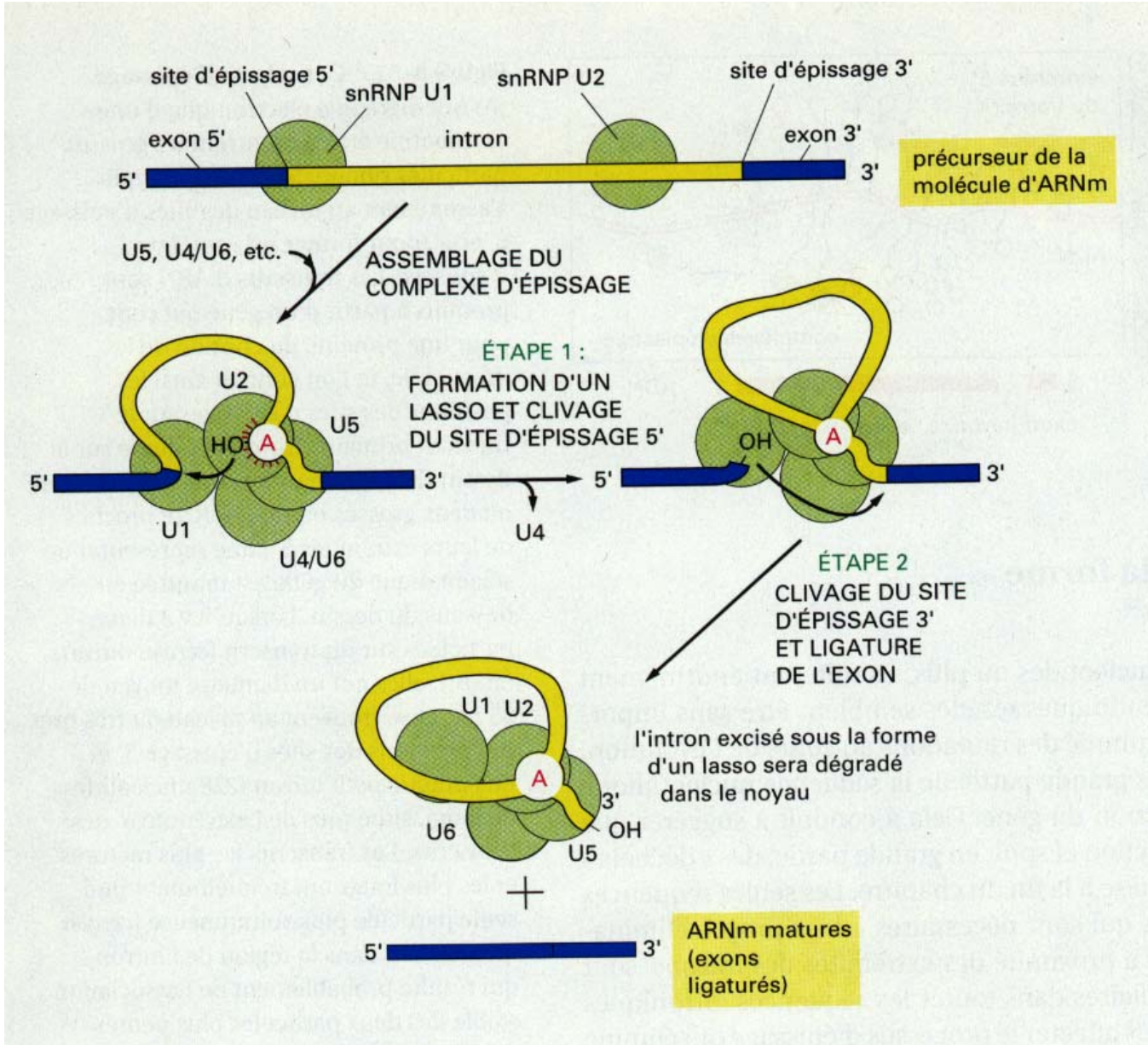
Réaction de transestérification lors de l'épissage des introns



FORMATION ET RECYCLAGE DU SPLICEOSOME

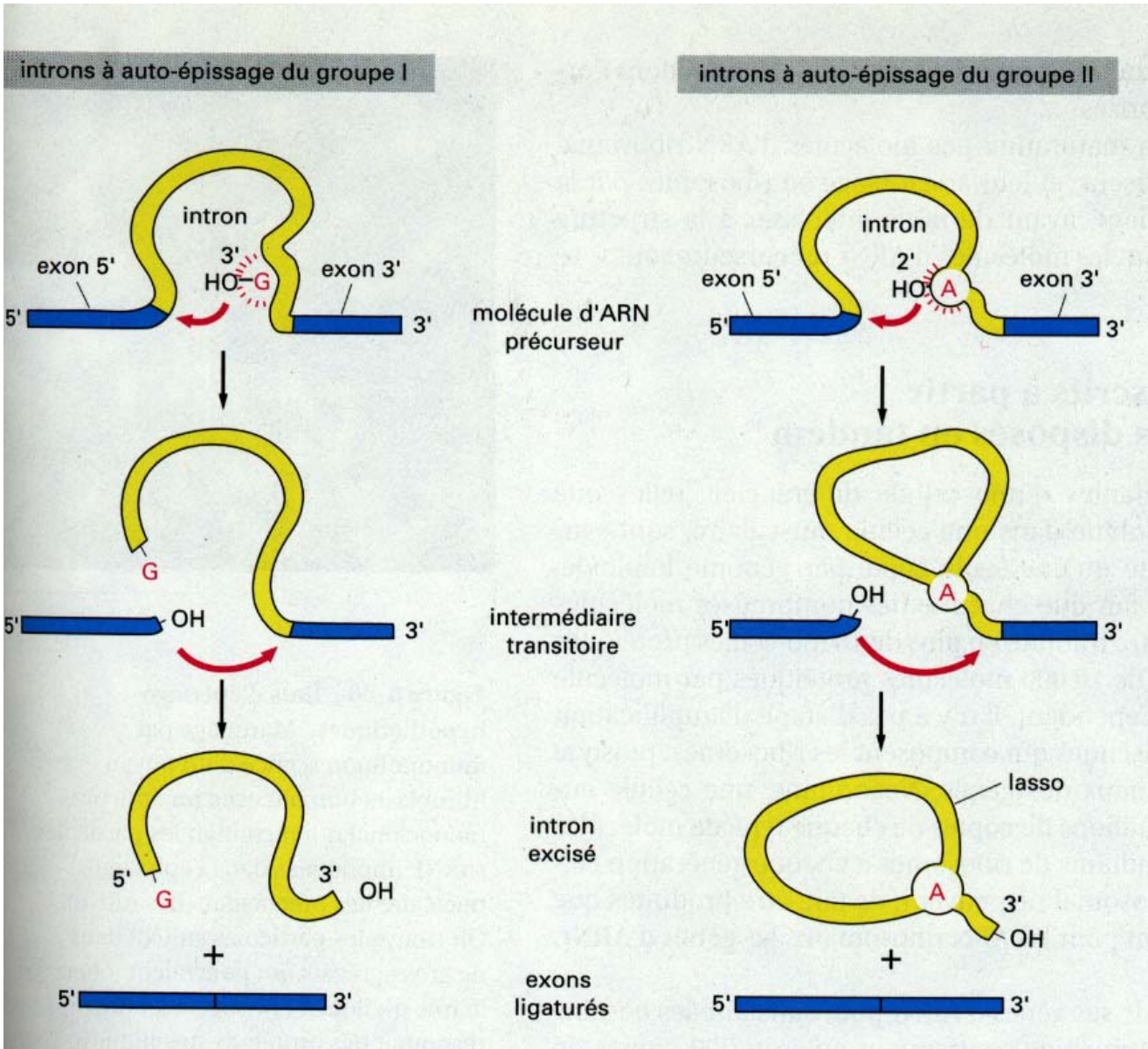


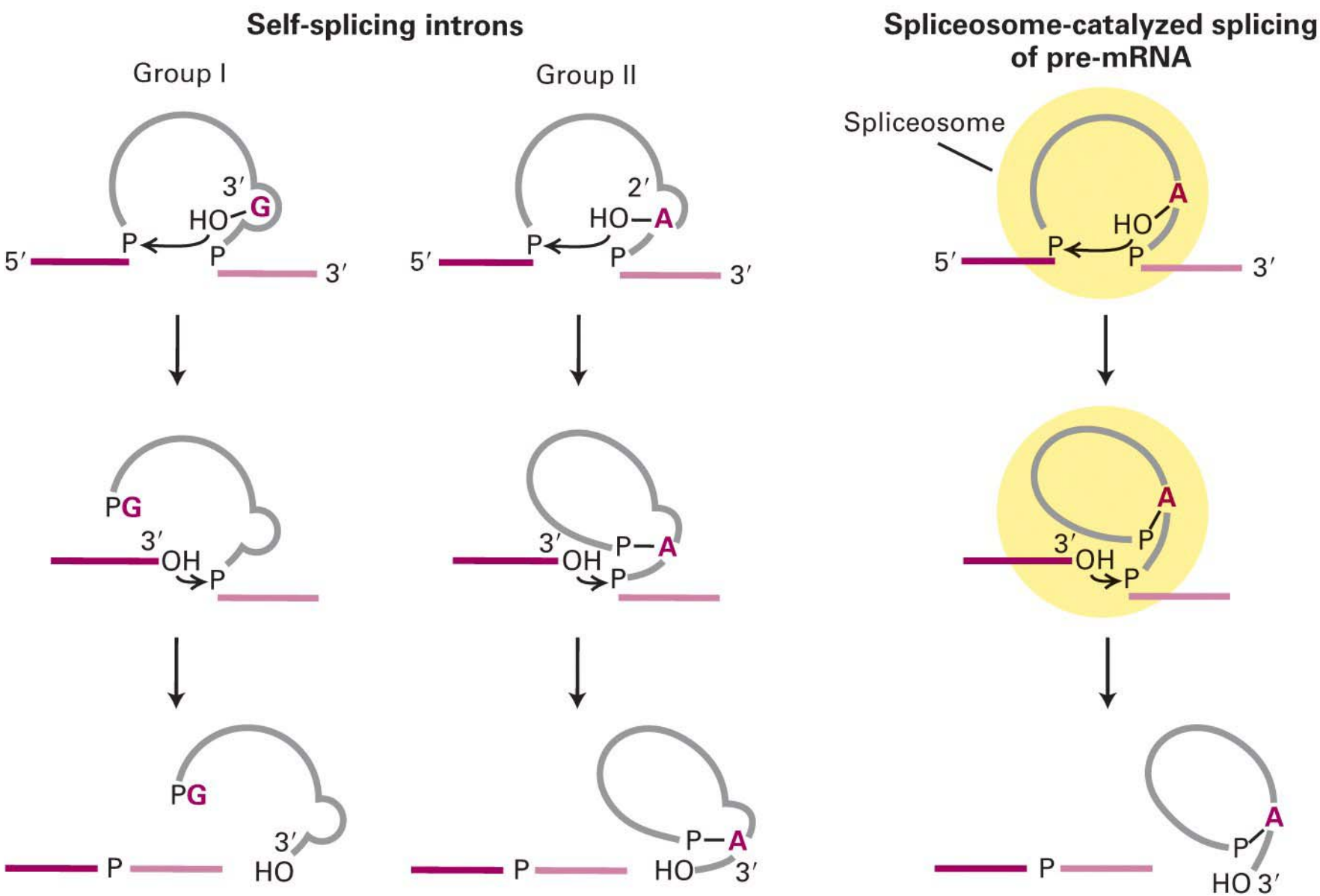
CATALYSE DE L'EPISSAGE PAR UN COMPLEXE CONTENANT RNPsn U1, U2, U5, U4/U6



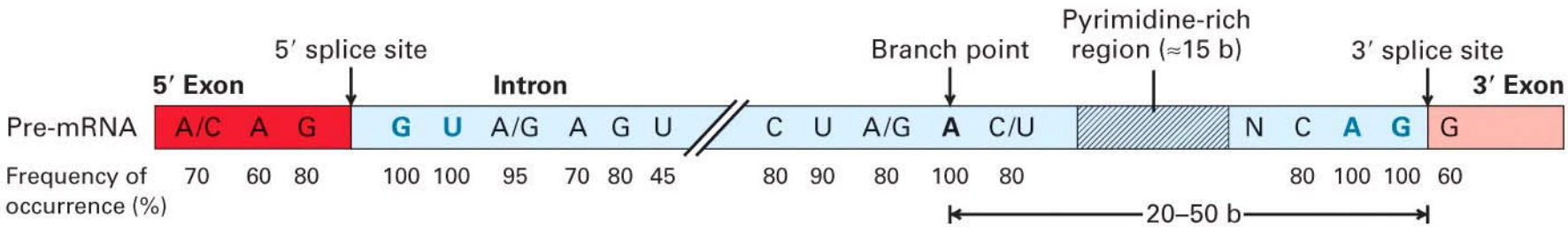
AUTOEPISSAGE DES INTRONS DE CLASSE I ET DE CLASSE II

(GMP)

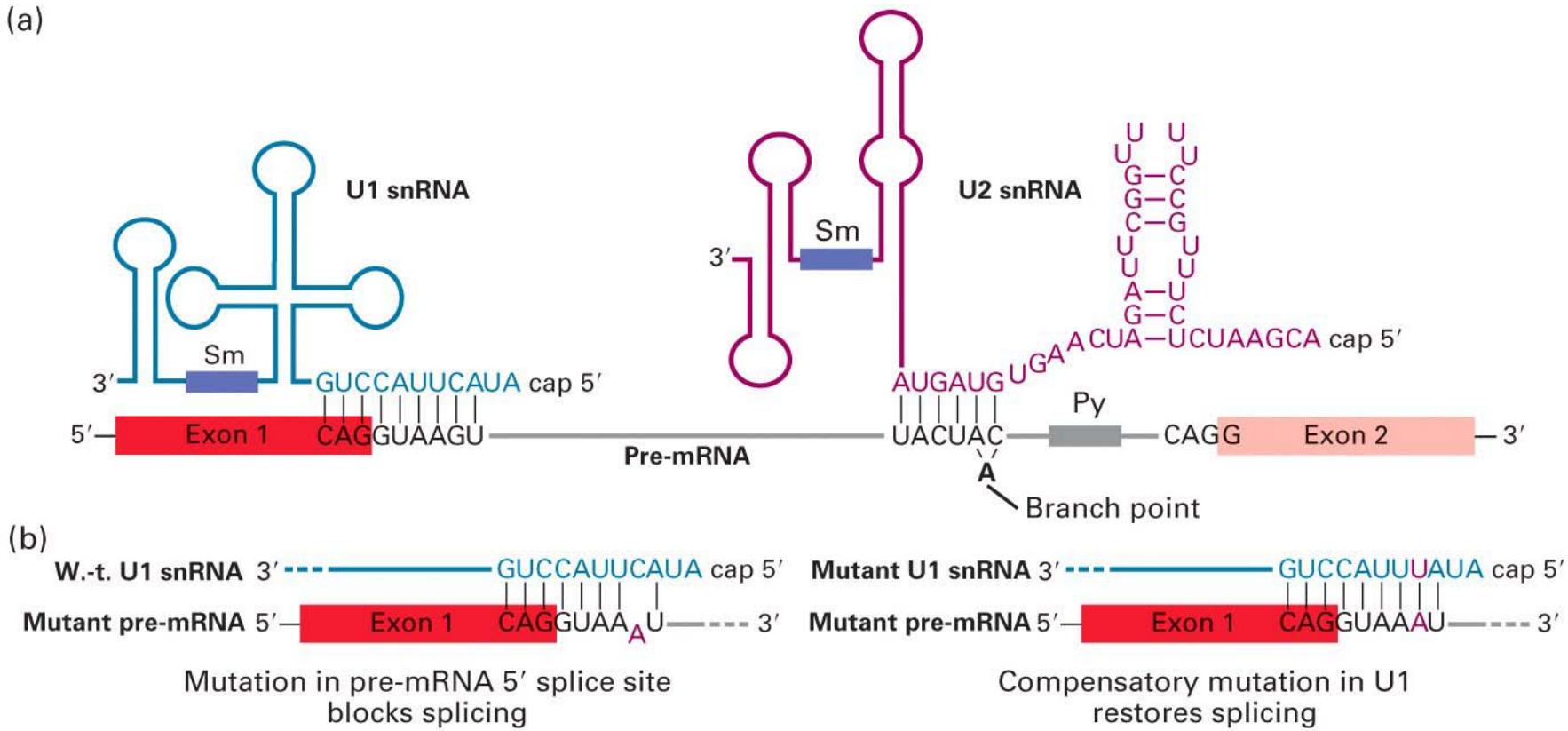



Self-splicing introns
Group I
Group II
Spliceosome-catalyzed splicing of pre-mRNA
Spliceosome
5′
3′
HO
G
P
2′
A
PG
OH
P—A
HO 3′

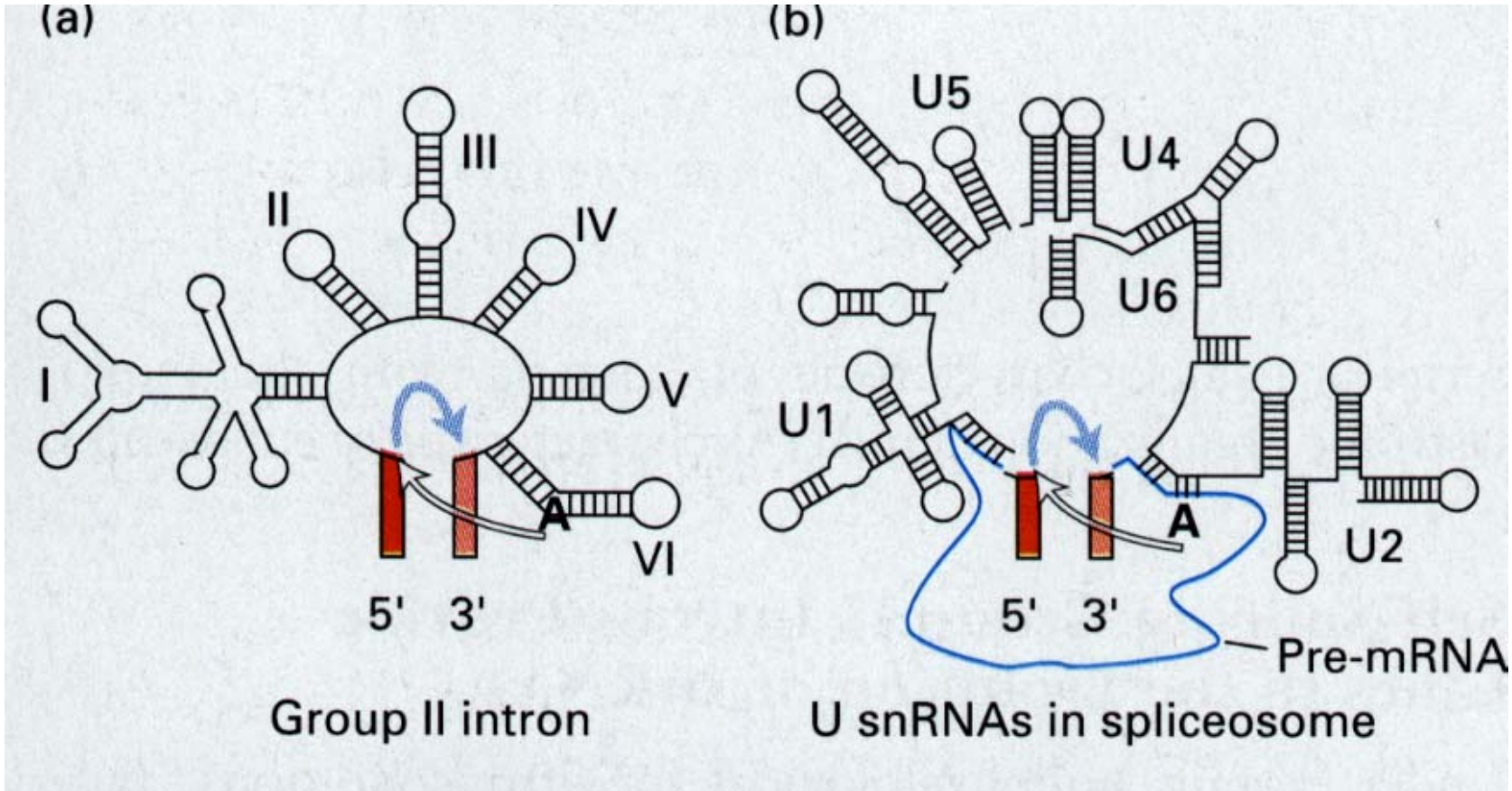
Séquences impliquées dans la maturation d'un précurseur d'ARN messager



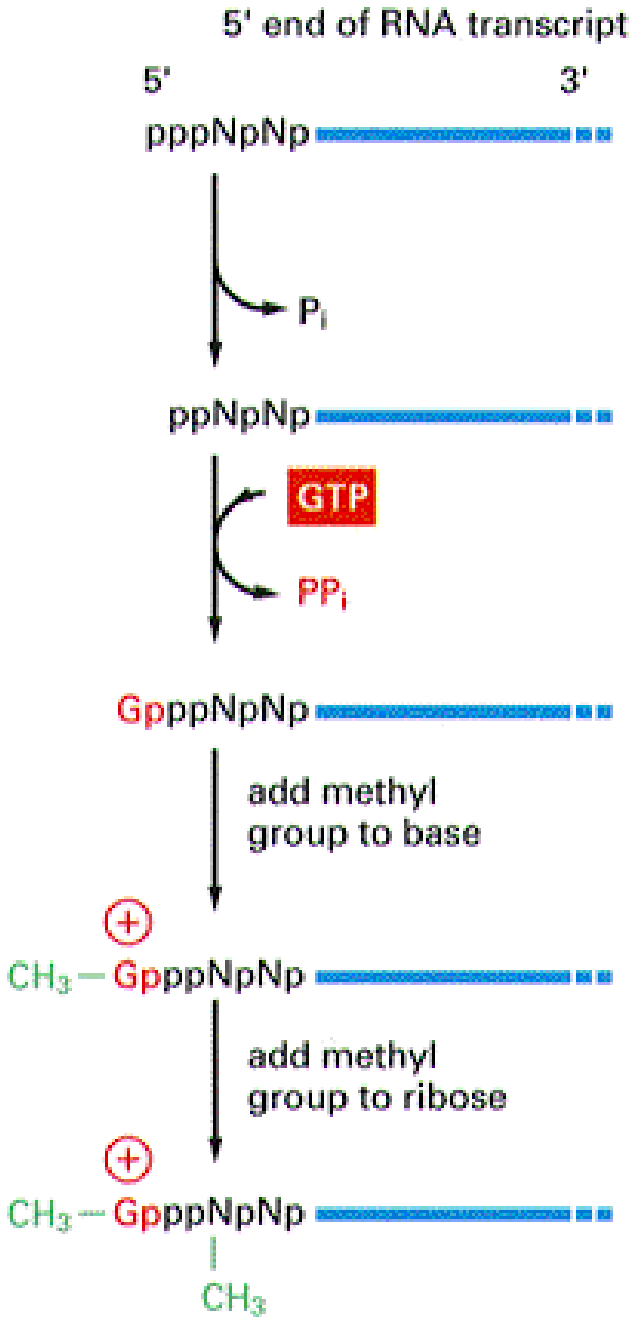
INTERACTIONS DE L'ARN PREMESSAGER AVEC LES snRNA DE U1 ET U2 DANS LES ETAPES PRECOCES DE L'EPISSAGE



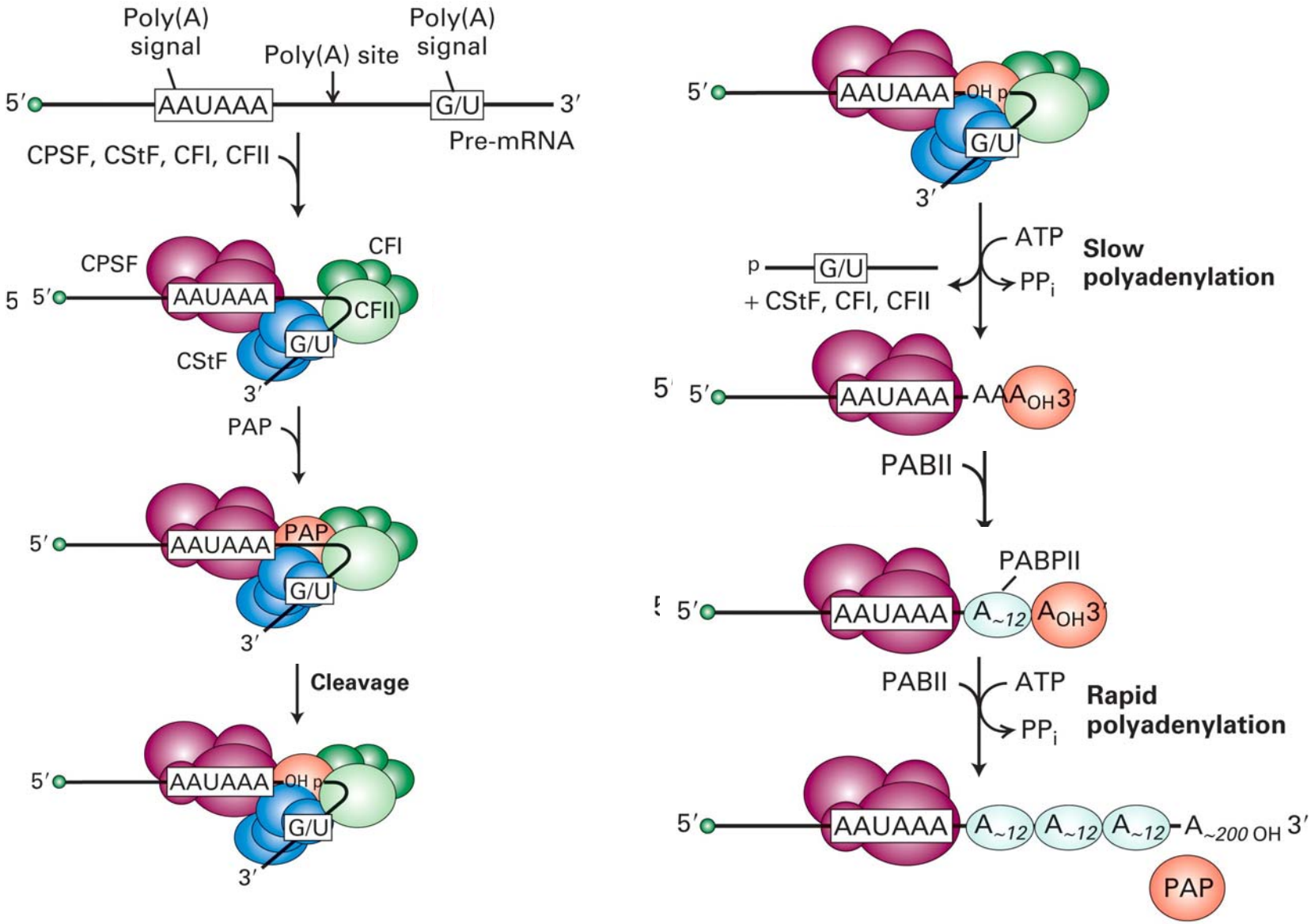
COMPARAISON DE LA STRUCTURE DES INTRONS DE CLASSE II ET DES snRNAs DU SPLICEOSOME



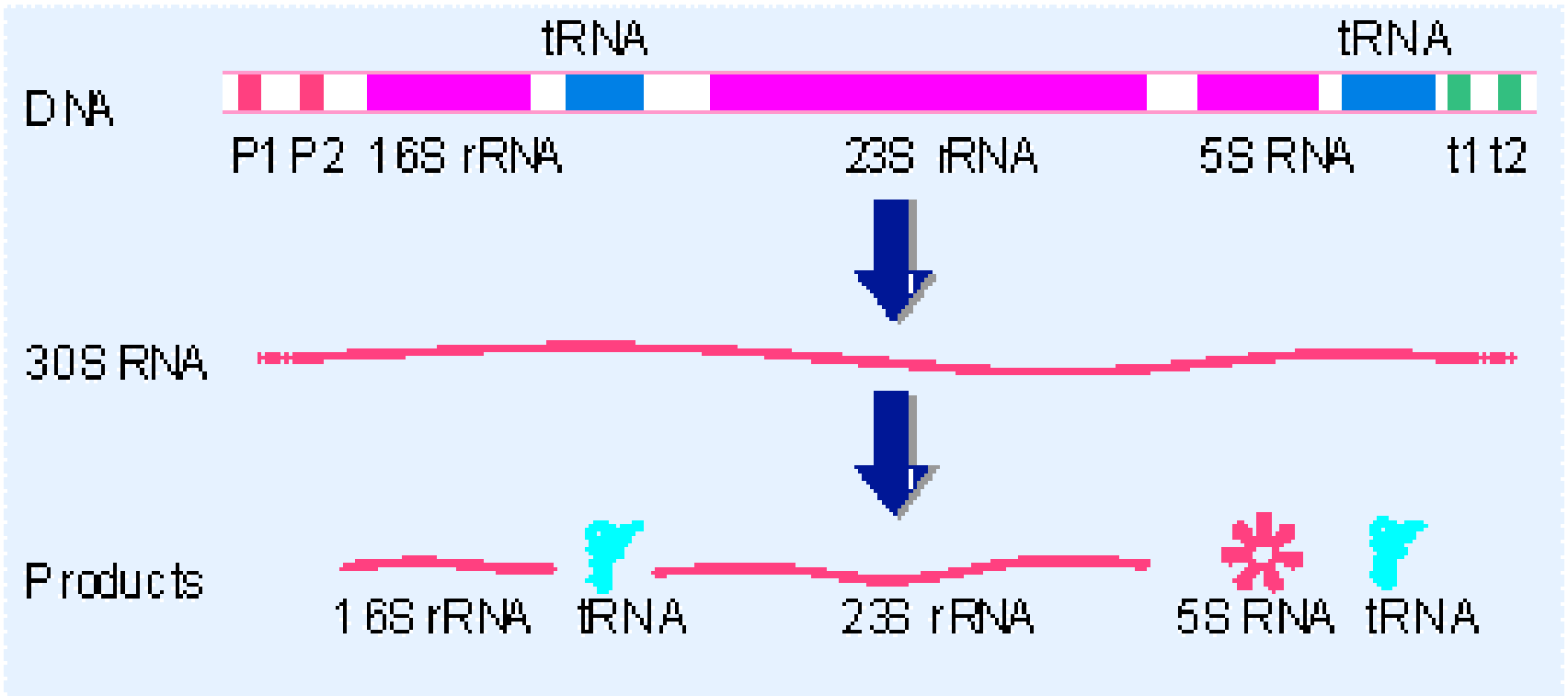
Coiffe de l'extrémité 5 ' du produit primaire de transcription



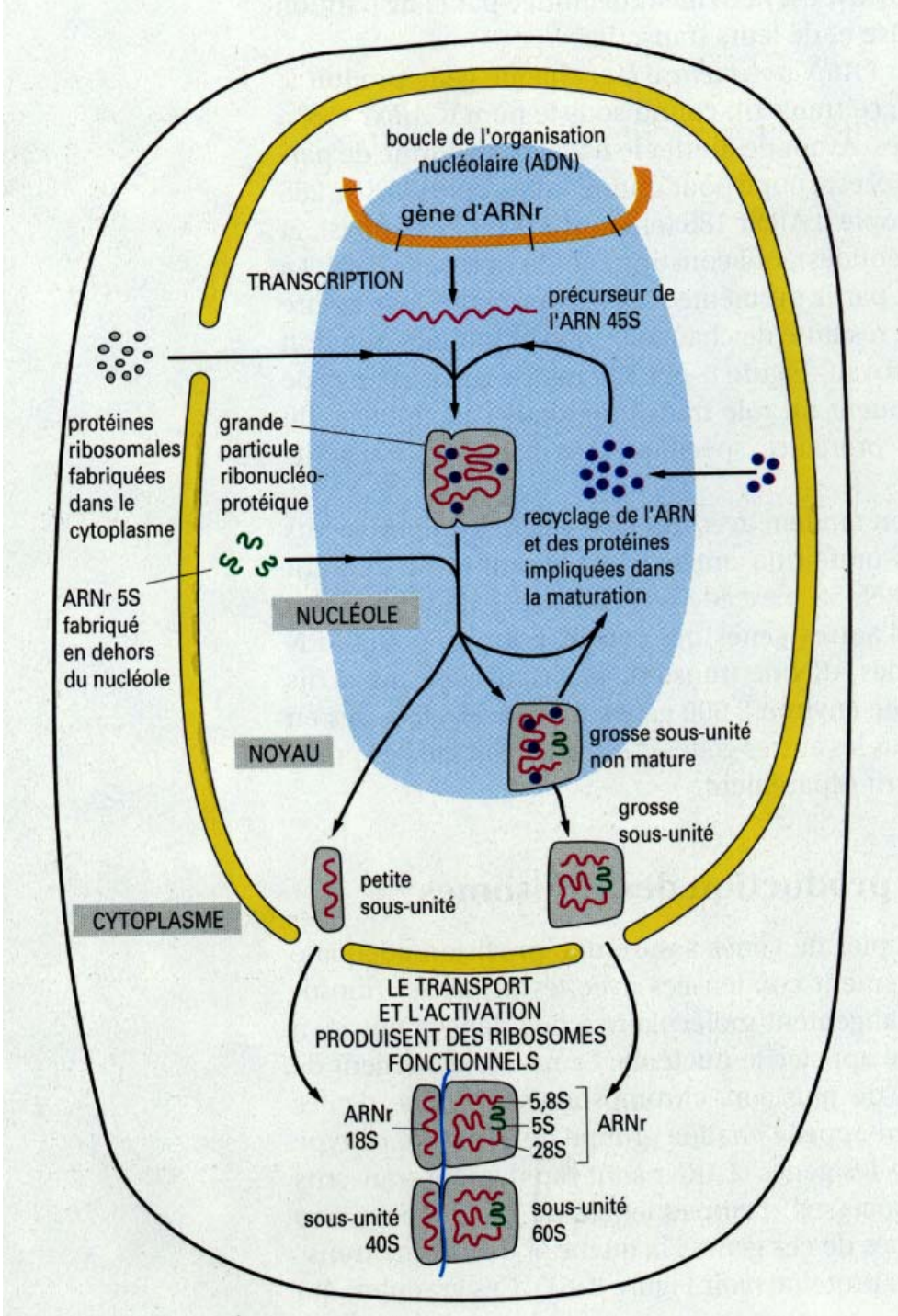
Mise en place de la queue polyA en 3' du messager



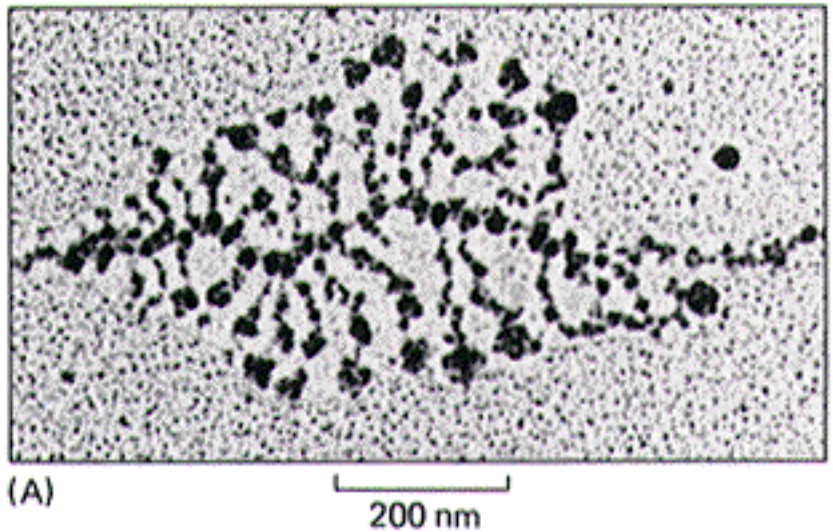
MATURATION DES ARNs PRECURSEURS DES ARN RIBOSOMIQUES ET DES ARNs DE TRANSFERT

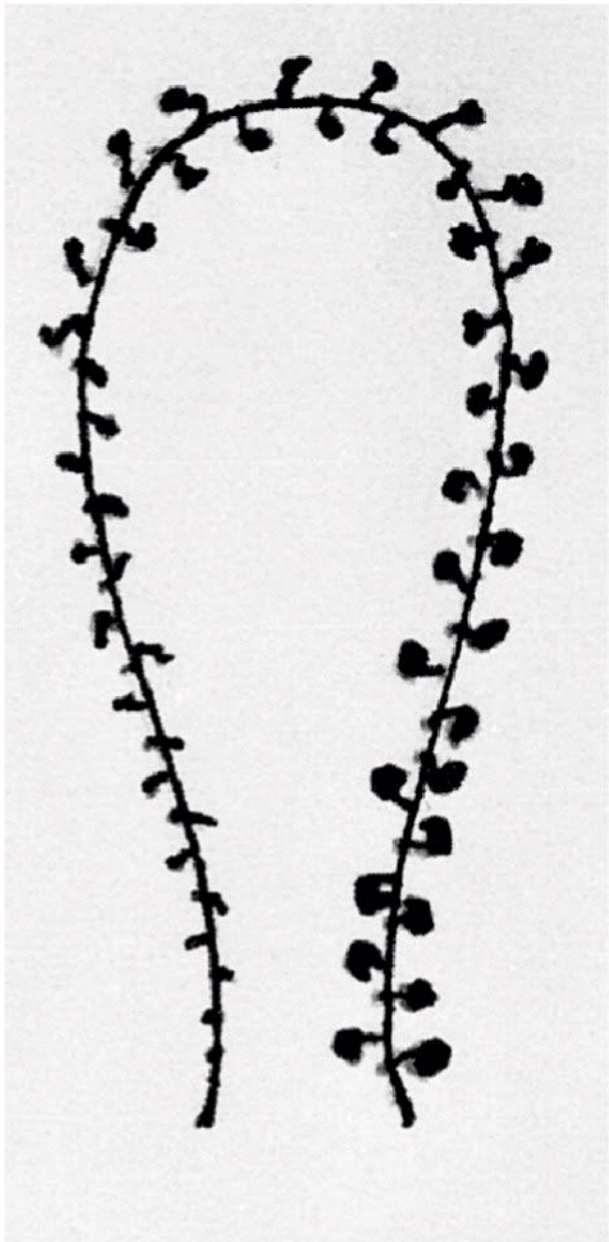


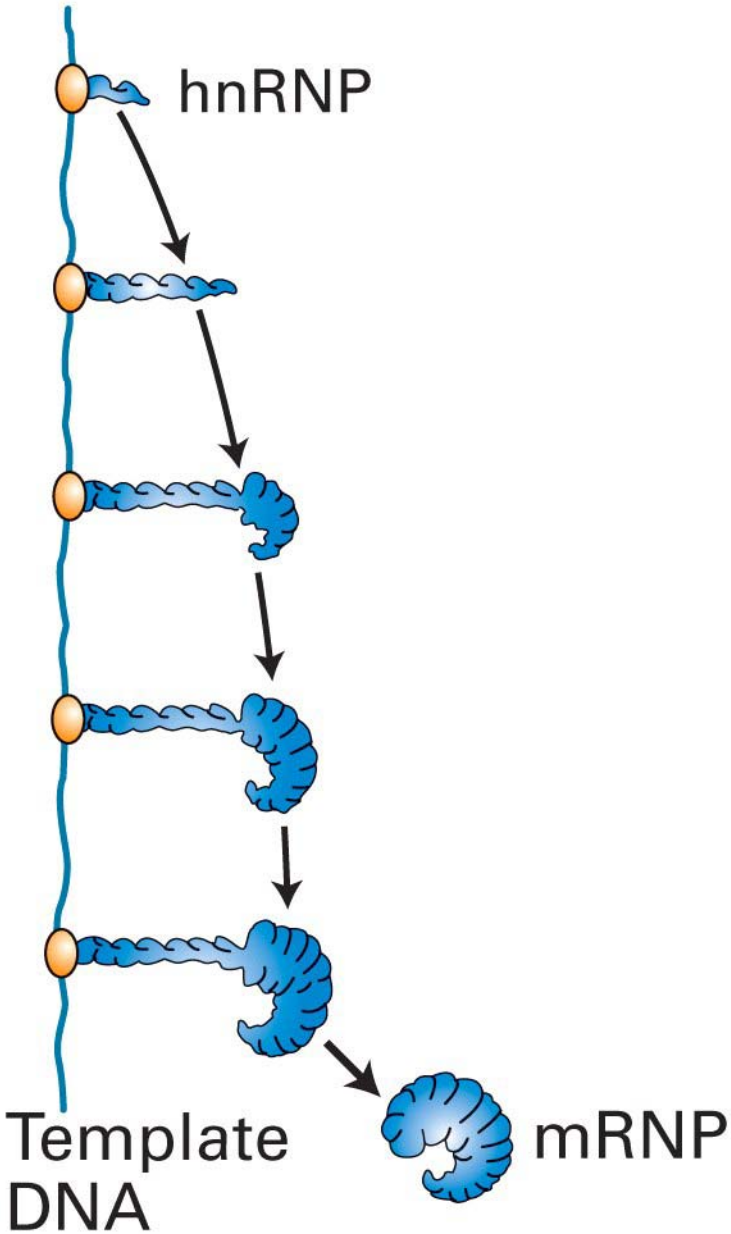
MATURATION DES ARN RIBOSOMIQUES ET ASSEMBLAGE DES PETITE ET GRANDE SOUS UNITES DU RIBOSOME



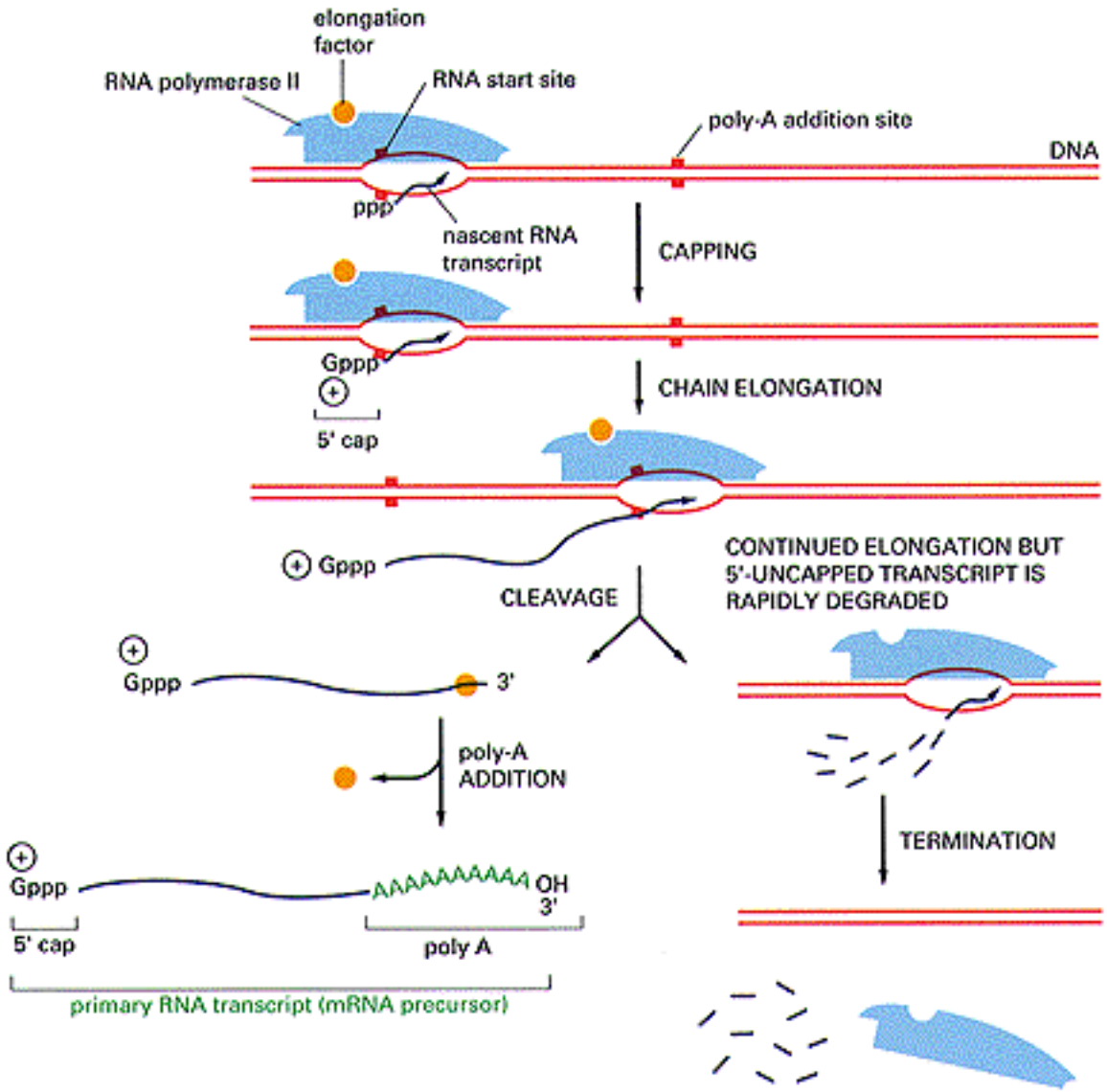
Epissage co-trancriptionnel



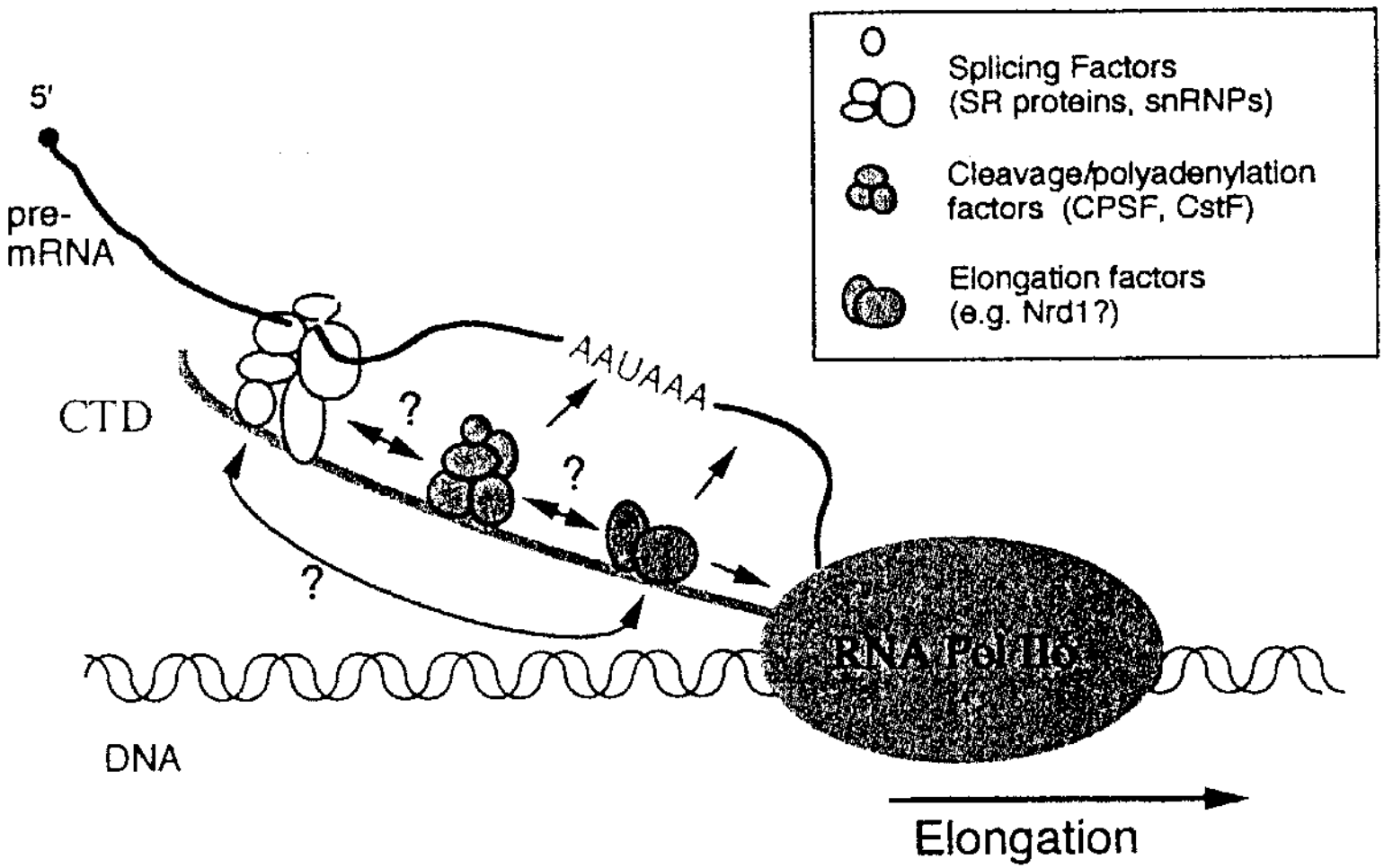



hnRNP
Template
DNA
mRNP

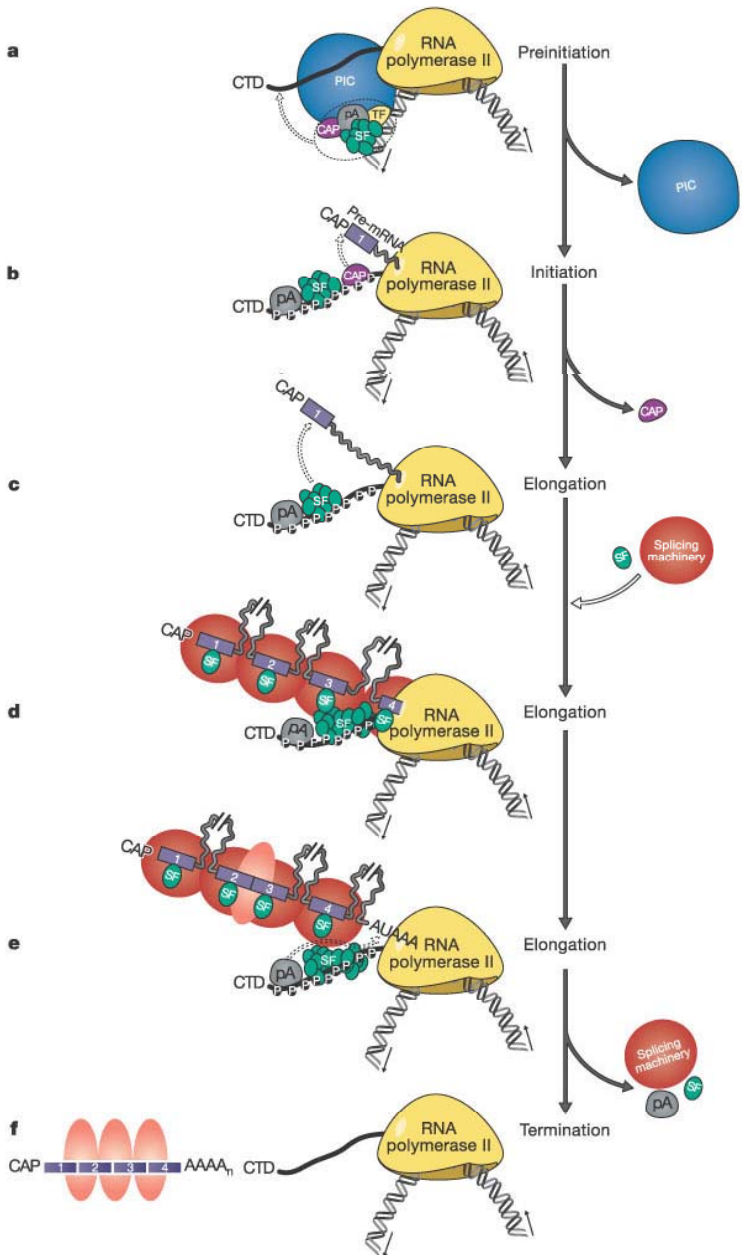
Polyadénylation et terminaison



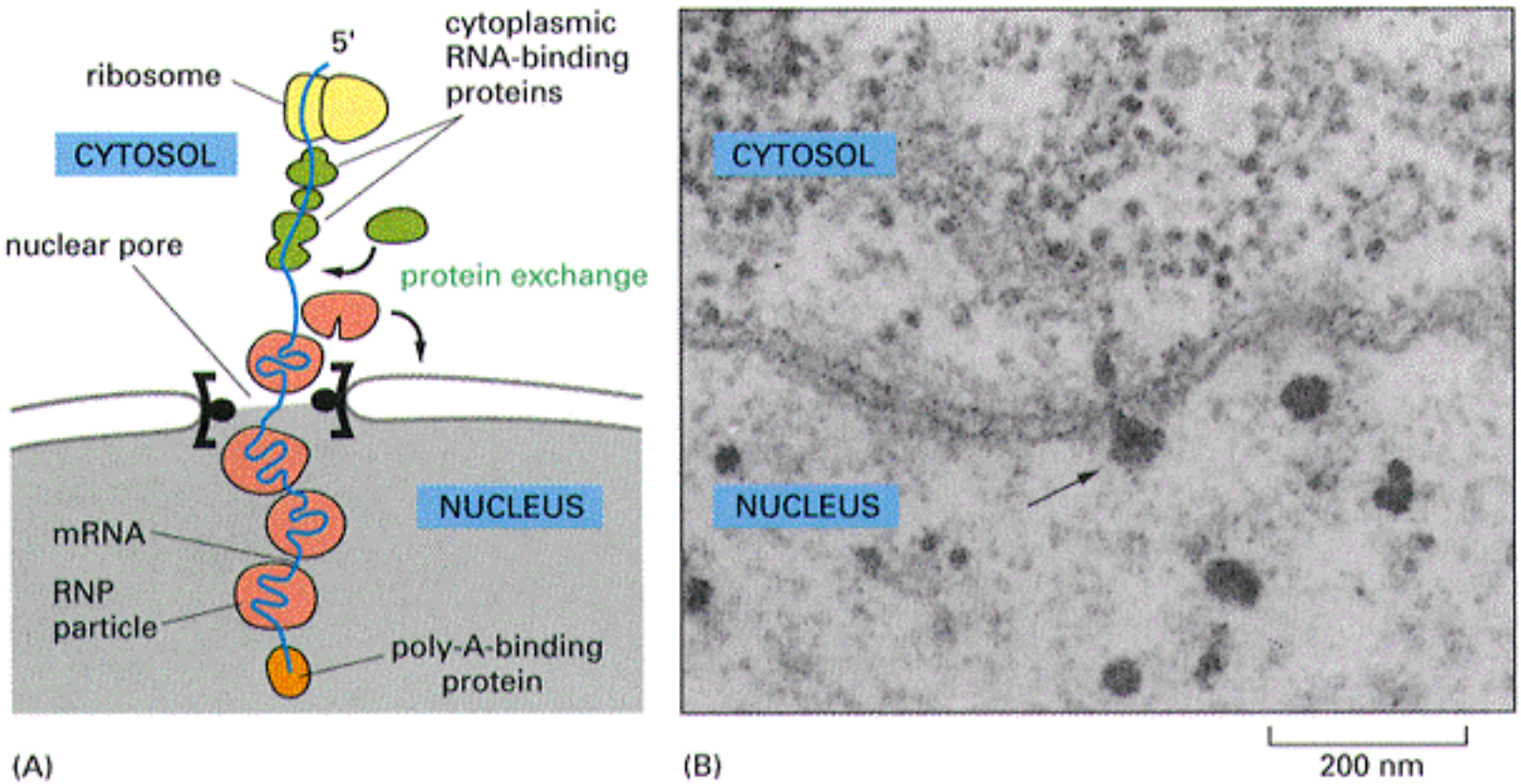
CTD et polyadénylation terminaison



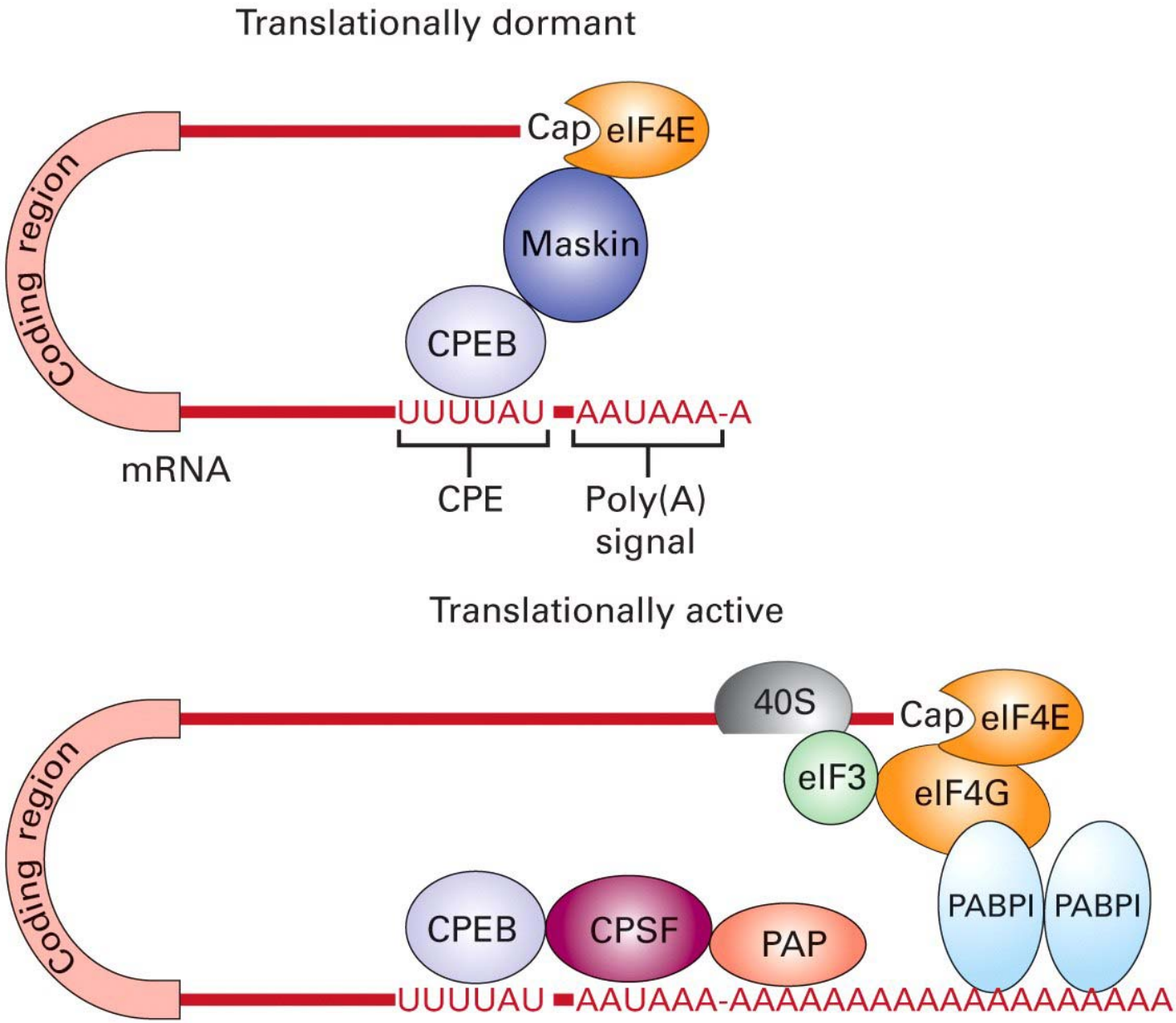
Etapes de transcription et maturation



L ’export nucléaire par les pores



Importance de la queue polyA pour le démarrage de la traduction



Complexes de Transcription (193 ORF)

RNA polymerase I (14 ORFs)
- Core Factor (CF) (4 ORFs)
- Upstream Activation Factor (UAF) complex (3 ORFs)

RNA polymerase II holoenzyme (35 ORFs)
- RNA polymerase II (13 ORFs)
- Kornberg's mediator (SRB) complex (21 ORFs)
- TFIIA (2 ORFs)
- TFIIB (1 ORF)
- TFIID (13 ORFs)
  - TBP (1 ORF)
  - TAFIIs (12 ORFs)
- TFIIE (2 ORFs)
- TFIIF (3 ORFs)
- TFIIH (9 ORFs)
- TFIIK (CTD kinase) (3 ORFs)

RNA polymerase III (13 ORFs)
- TFIIIA (1 ORF)
- TFIIIB (3 ORFs)
- TFIIIC (5 ORFs)

CCAAT-binding factor complex (4 ORFs)

mRNA guanylyl transferase (capping complex) (2 ORFs)

DNA repair complexes (33 ORFs)
- Nucleotide excision repairosome (16 ORFs)
- Non-homologous end-joining apparatus (7 ORFs)
- DNA mismatch repair complexes (5 ORFs)

Other transcription complexes (73 ORFs)

ADA complexes (14 ORFs)
- ADA complex (6 ORFs)
- Ada-Spt complexes (14 ORFs)
  - SAGA complex (14 ORFs)
    - SAGA-like complex (SLIK) (5 ORFs)

HPR1 complex (1 ORF)

NAC complex (2 ORFs)

NOT complex (5 ORFs)

SWI/SNF transcription activator complex (10 ORFs)

SBF complex (2 ORFs)

MBF complex (2 ORFs)

GAL80 complex (3 ORFs)

GCR complex (2 ORFs)

OAF complex (2 ORFs)

CCR4 complex (13 ORFs)

ARG complex (4 ORFs)

RTG complex (2 ORFs)

Tup1/Ssn6 complex (2 ORFs)

Sin3 complex (4 ORFs)

Met4 complexes (5 ORFs)
- Cbf1/Met4/Met28 complex (3 ORFs)
- Met4/Met28/Met31 complex (3 ORFs)
- Met4/Met28/Met32 complex (3 ORFs)

Mot1 complex (1 ORF)

NC2 complex (2 ORFs)

Ume6/Ime1 complex (2 ORFs)

LEU3 complex (1 ORF)

Complexes de maturation des ARNs (113)

Nuclear processing complexes (10 ORFs)
- pre mRNA3'-end processing factor CFI (5 ORFs)
- pre mRNA3'-end processing factor CFII (3 ORFs)
- pre mRNA polyadenylation factor PFI (3 ORFs)

rRNA processing complexes (18 ORFs)
- Exosome complex (7 ORFs)
- RNase MRP (8 ORFs)
- Nop56p/Nop1p complex (3 ORFs)

tRNA processing complexes (9 ORFs)
- RNase P (9 ORFs)

Nuclear splicing complexes/Spliceosome (66 ORFs)
- mRNA splicing (38 ORFs)
  - Prp19p-associated complex (3 ORFs)
  - Prp9p/Prp11p/Prp21p complex (2 ORFs)
- rRNA splicing (15 ORFs)
- tRNA splicing (11 ORFs)

Mitochondrial processing complexes (4 ORFs)

Mitochondrial splicing complexes (15 ORFs)
- mitochondrial 3'-to-5' exoribonuclease (mtEXO) (2 ORFs)

other RNA processing components (1 ORF)

Epissage alternatif

3 gènes de détermination du sexe chez la drosophile, épissés différemment selon le sexe de l'individu: