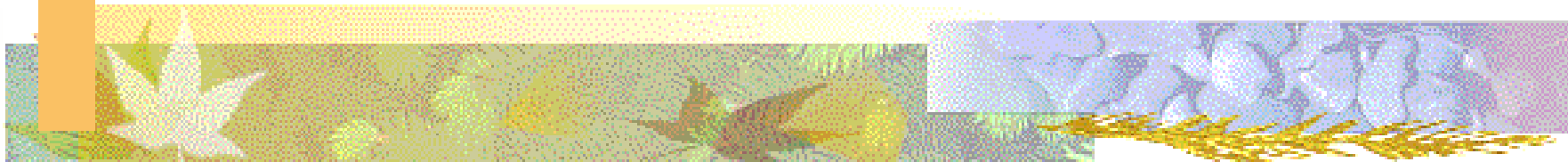


Základy génovej expresie

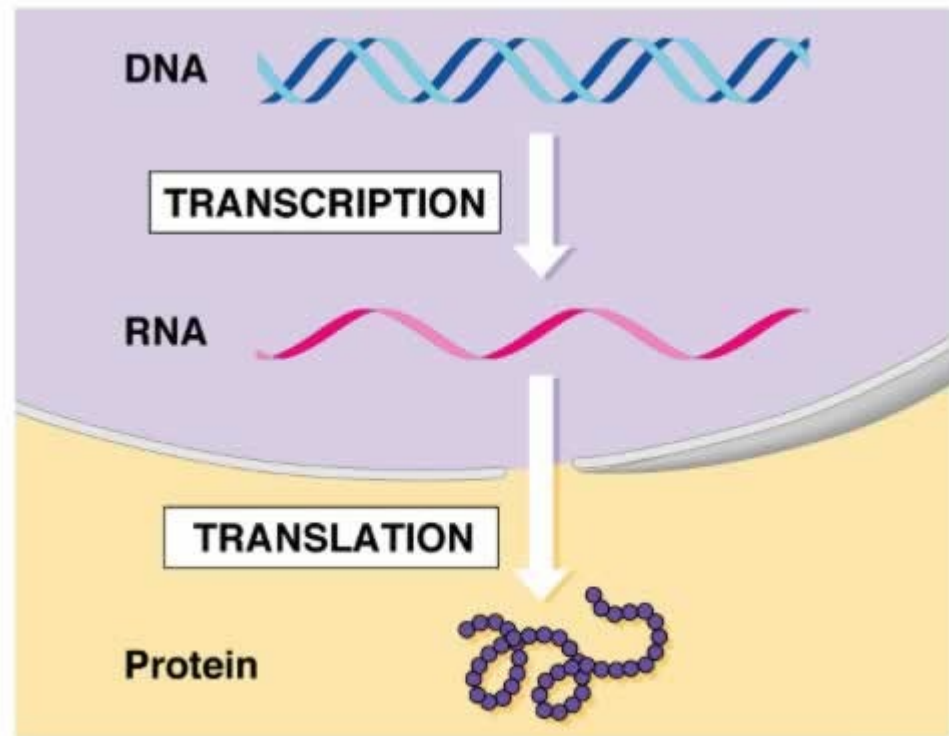
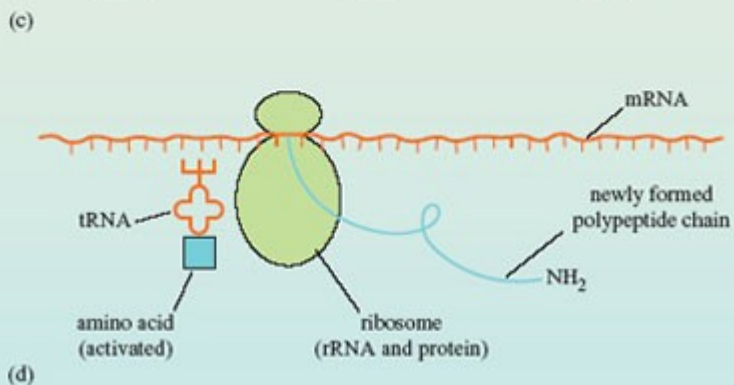
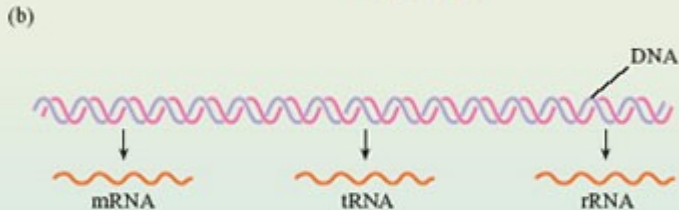
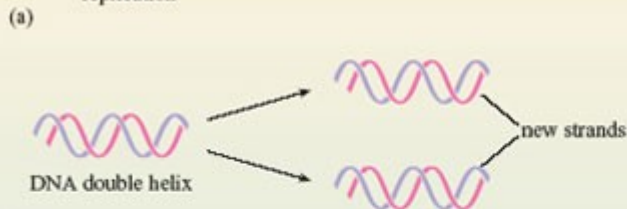
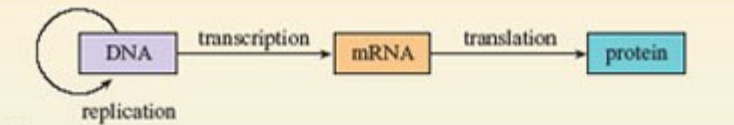


RNDr. Iveta Černáková, PhD.

ISCARE, a.s., Bratislava

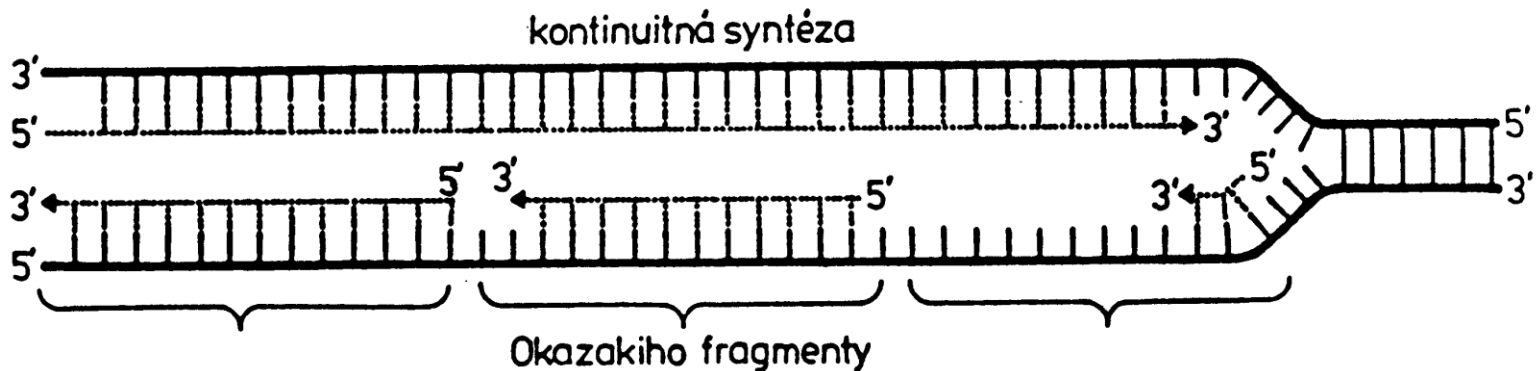
Slovenská Zdravotnícka Univerzita, Katedra klinickej genetiky

Realizácia genetickej informácie



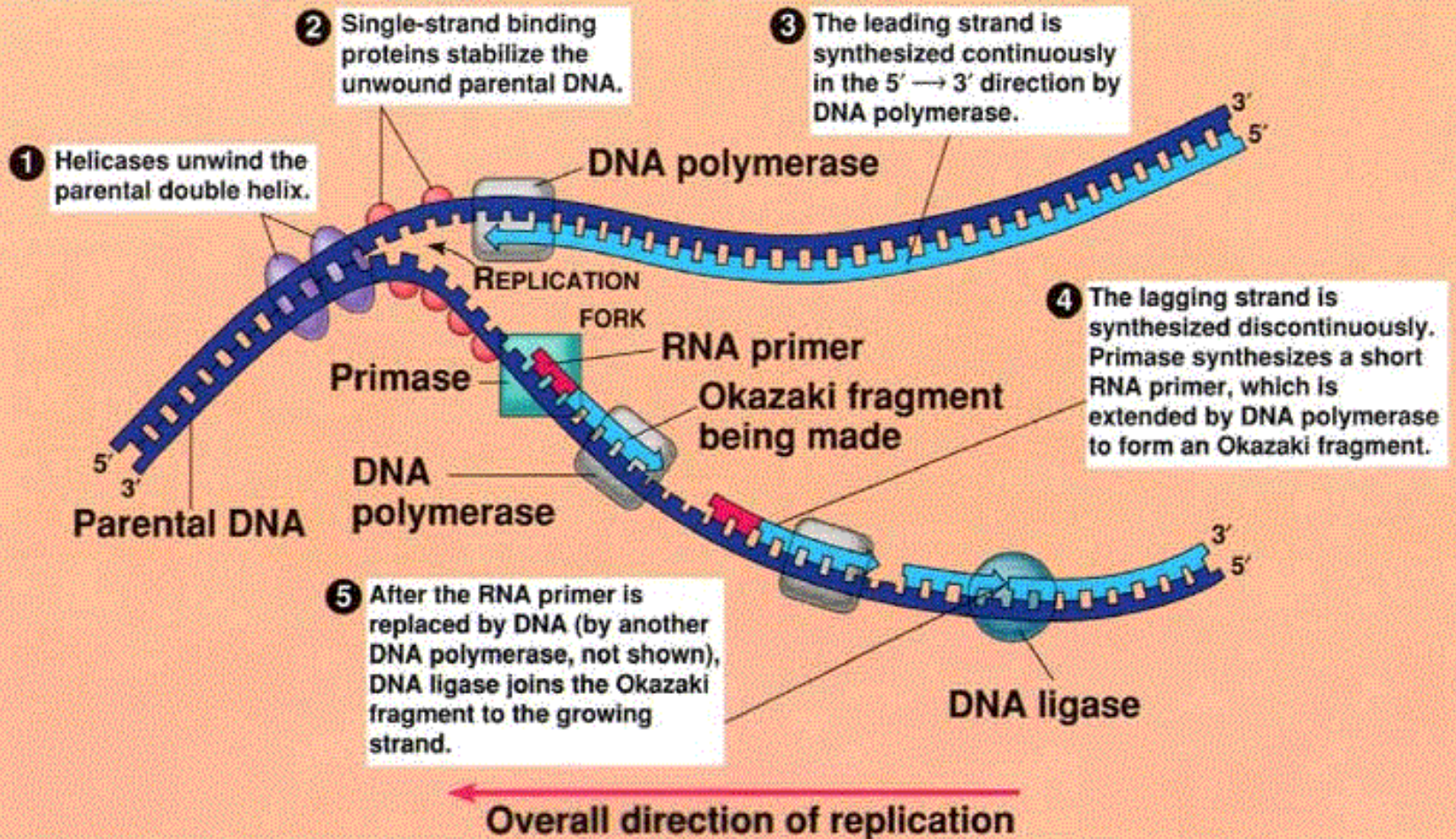
Replikácia DNA

- pred každým bunkovým delením sa v bunke utvorí presná kópia genetického materiálu, tj. uskutoční sa jeho autoreprodukcia – replikácia DNA

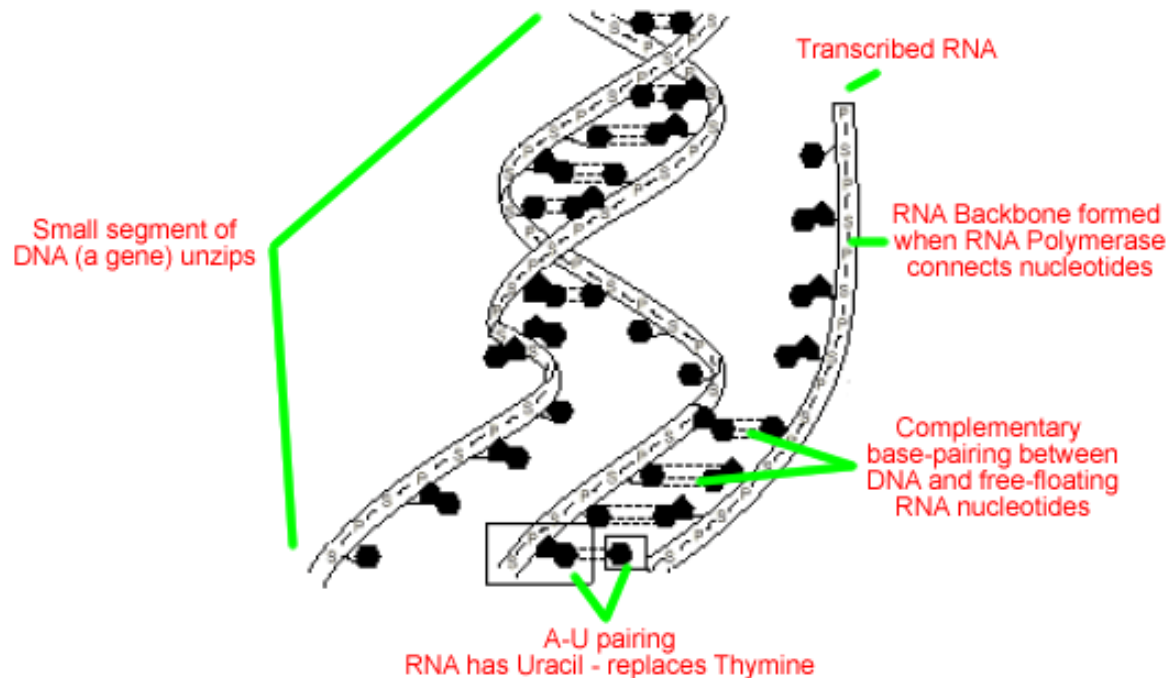


Obr. 3.6. Replikácia DNA. Jedno vlákno sa syntetizuje kontinuitne v smere 5' → 3', kým druhé vlákno sa môže v tom istom smere syntetizovať len vo forme krátkych úsekov – Okazakiho fragmentov

A SUMMARY OF DNA REPLICATION

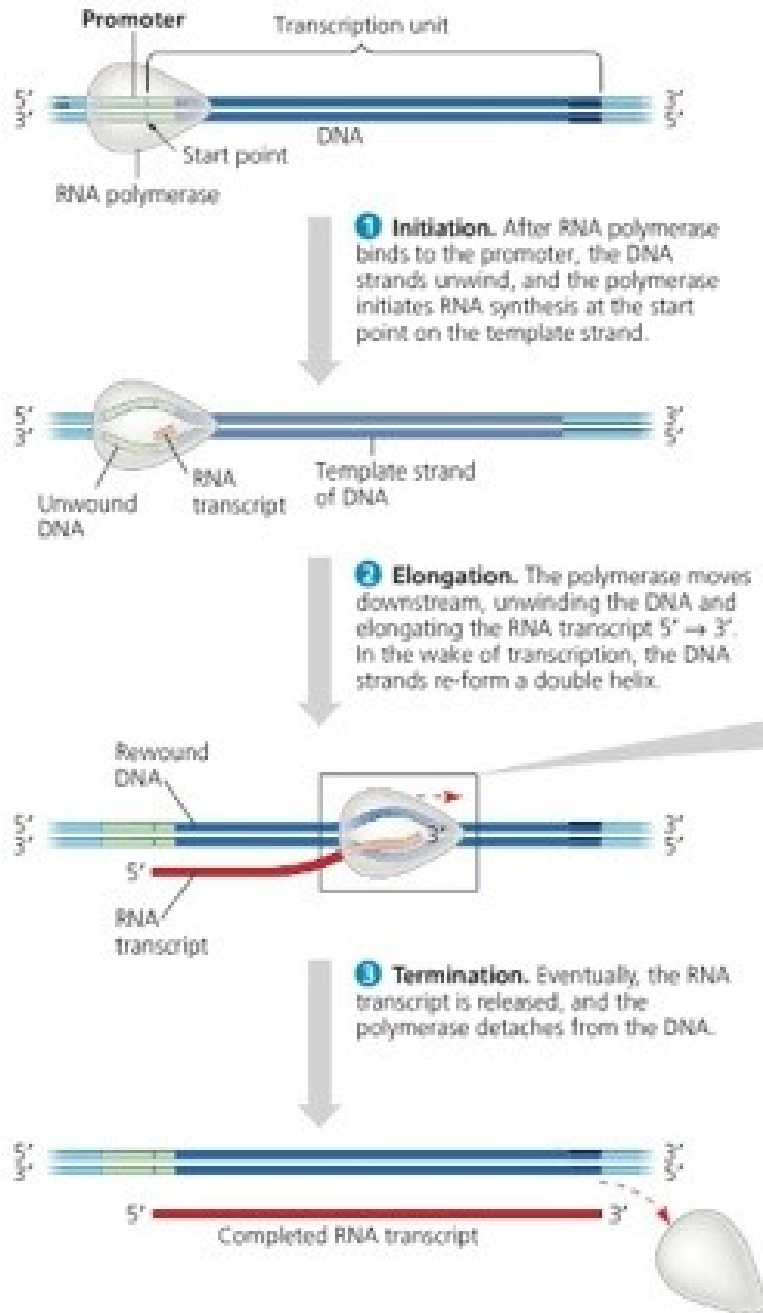


TRANSCRIPTION - occurs in nucleus
makes mRNA, tRNA, and rRNA

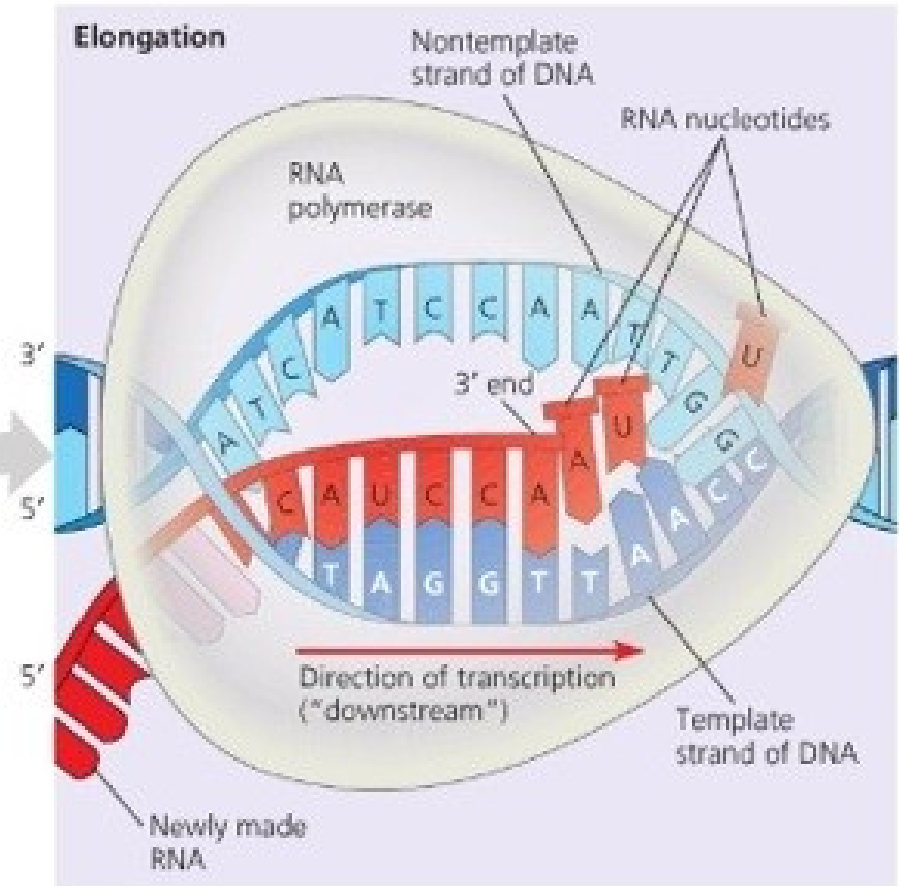


Transkripcia

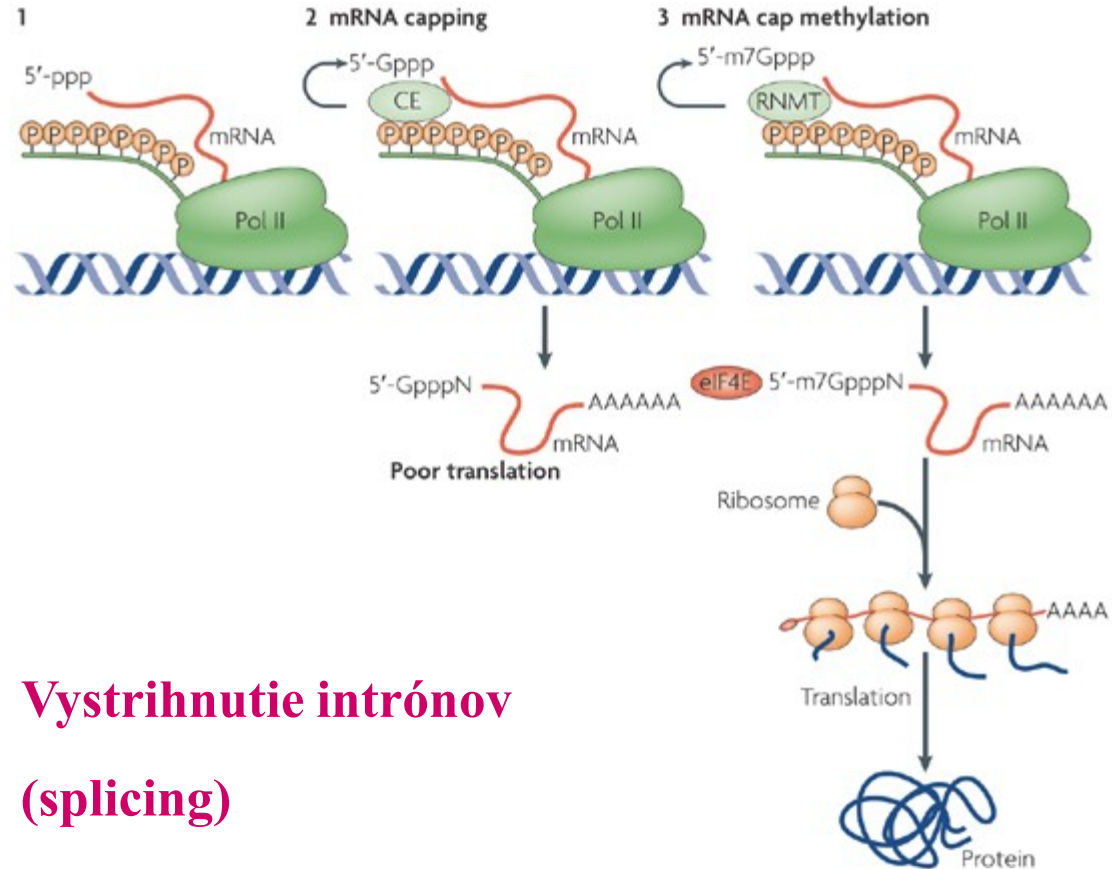
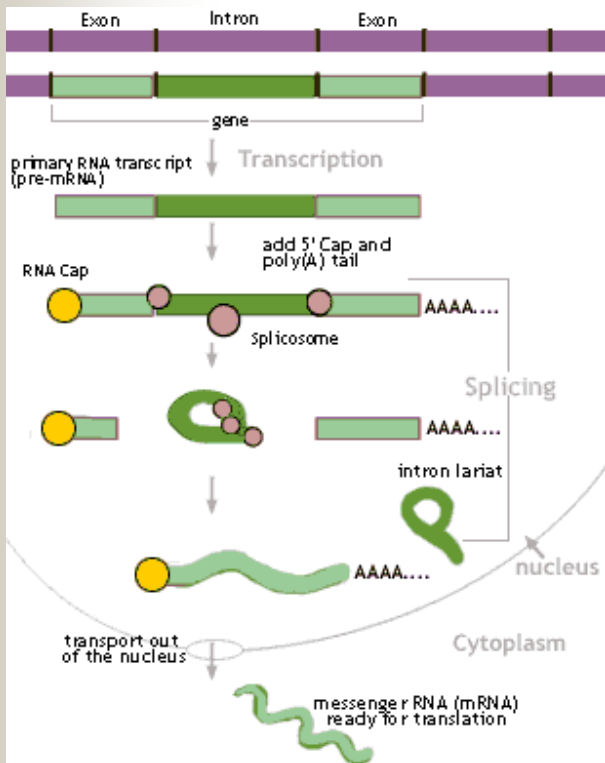
- Prepis len jedného reťazca DNA v smere 5 → 3 , pri párovaná nukleotidov sa oproti A zaraduje U.
- Výsledkom procesu je prekurzorová mRNA (pre-mRNA), ktorá podlieha dozrievaniu –processing.



Transkripcia - sumár



Dozrievanie – processing pre- mRNA



➤ **Vystrihnutie intrónov (splicing)**

➤ **Tvorba čiapočky (cap) na 5 konci**

➤ **Polyadenylácia 3 konca**

Alternatívny splicing mRNA

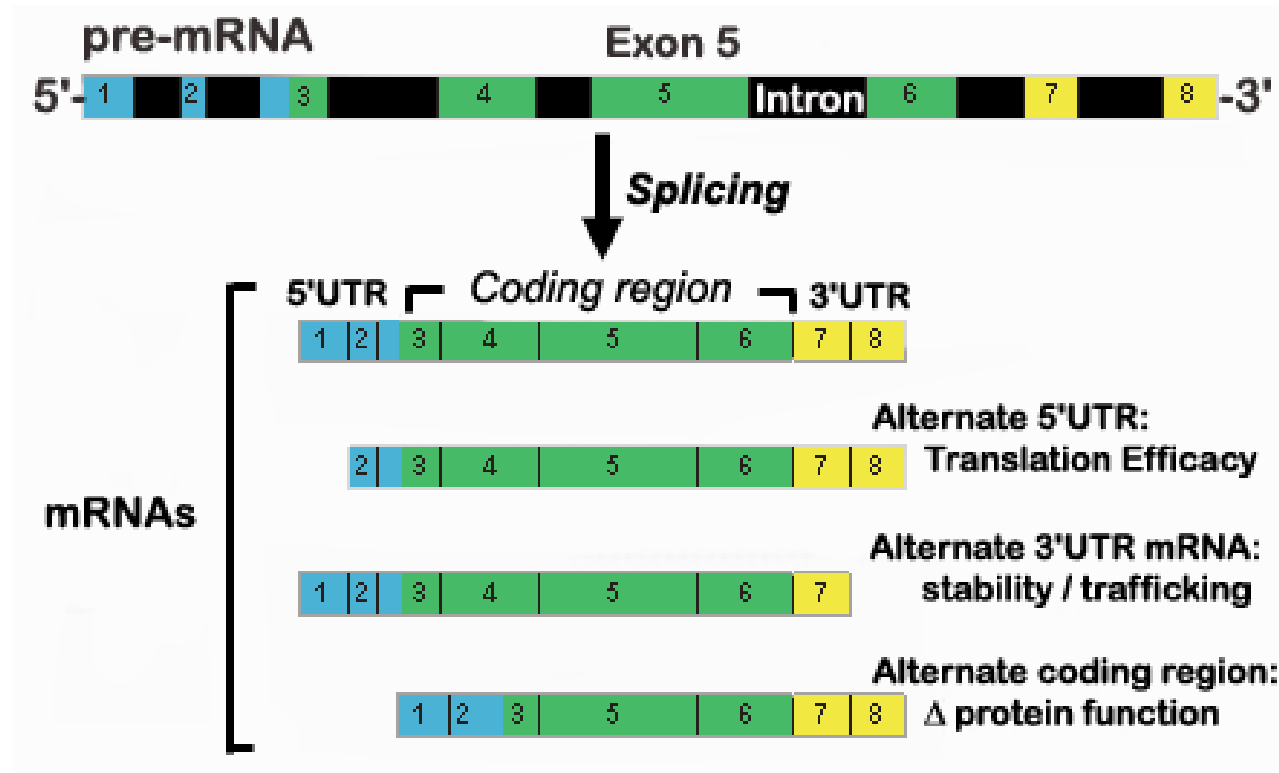


Figure 1. Alternative splicing can produce multiple mRNAs from a single gene

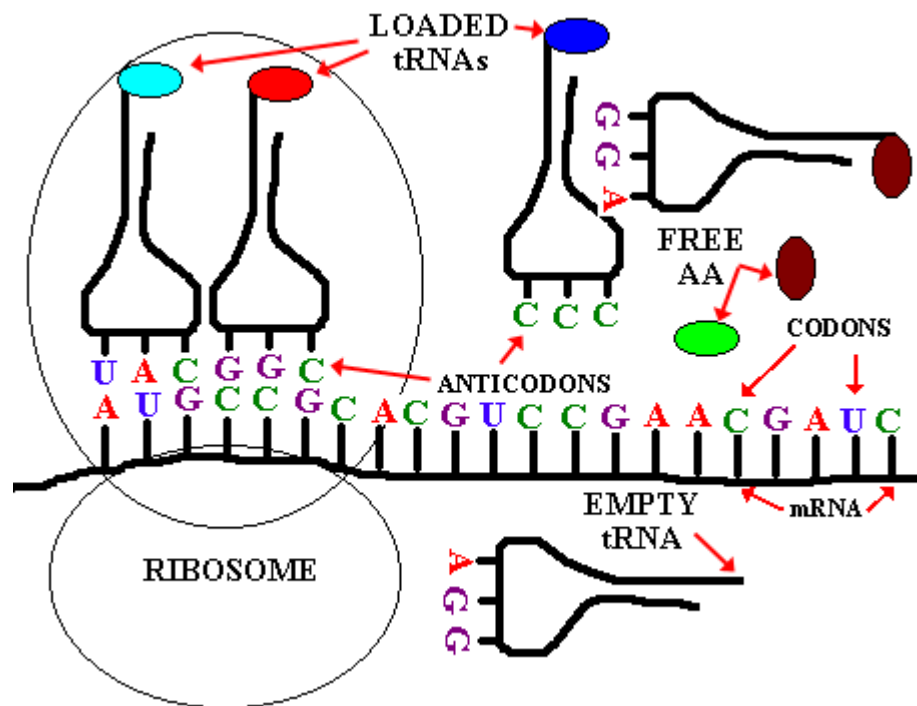
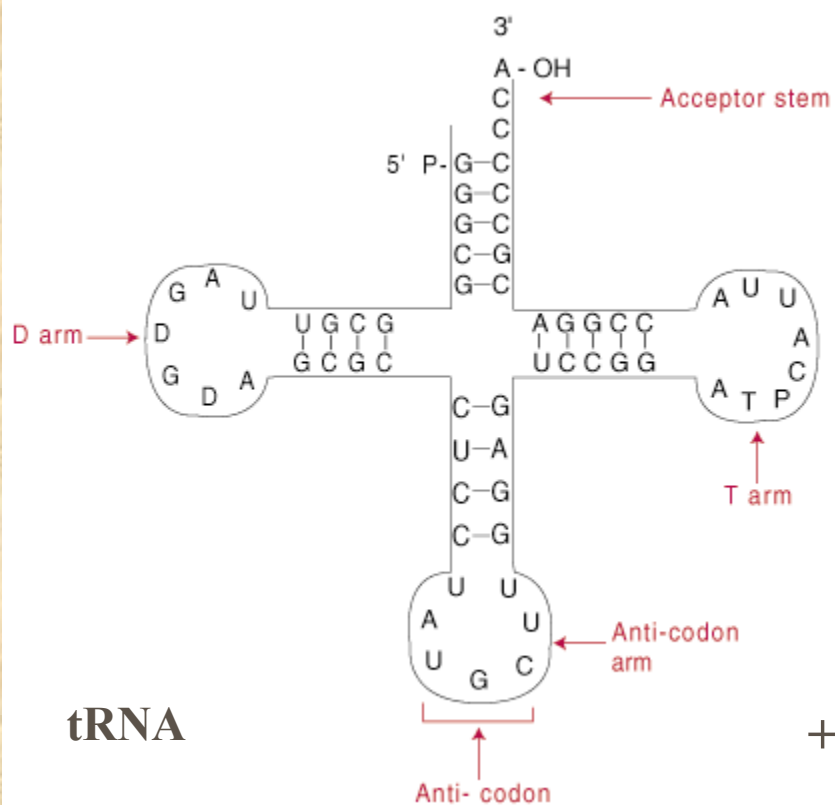
Second Letter

First Letter

	U		C		A		G		
U	UUU	Phenylalanine	UCU	Serine	UAU	Tyrosine	UGU	Cysteine	U
	UUC		UCC		UAC		UGC		C
	UUA	Leucine	UCA		UAA	Stop codon	UGA	Stop codon	A
	UUG		UCG		UAG		UGG		Tryptophan
C	CUU	Leucine	CCU	Proline	CAU	Histidine	CGU	Arginine	U
	CUC		CCC		CAC		CGC		C
	CUA		CCA		CAA	CGA	A		
	CUG		CCG		CAG	CGG	G		
A	AUU	Isoleucine	ACU	Threonine	AAU	Asparagine	AGU	Serine	U
	AUC	Methionine, Initiation codon	ACC		AAC		AGC		C
	AUA		ACA		AAA	Lysine	AGA	A	
	AUG		ACG		AAG		AGG	G	
G	GUU	Valine	GCU	Alanine	GAU	Aspartic acid	GGU	Glycine	U
	GUC		GCC		GAC		GGC		C
	GUA		GCA		GAA	Glutamic acid	GGA		A
	GUG		GCG		GAG		GGG		G

Translácia

- preklad genetickej informácie z mRNA do sekvencie AMK v polypeptide.



+ iniciačné, elongačné a terminačné faktory

Transláció - sumár

