

Translation: mRNA to Protein Cheat Sheet by ninjasquid (ninjasquid) via cheatography.com/38853/cs/12128/

Intoduction

The mRNA is **read** according to the genetic code, three bases at a time [**codon**] each of which refers to an amino acid

Occurs in the cytoplasm of the cell

Produces **polypeptide** which undergo folding to become functional protein

Key Machineries		
mRNA	Transcribed from DNA	
Ribosom e	Large & Small sub-units	
	*Large sub-unit A-[Aminoacyl]-site, P-[Peptidyl]-site, E- [Exit]-site	
	*Small sub-unit latches onto mRNA, forms the initiation complex	
tRNA	Carrying Amino acid specified by anti-codon	
GTP	supplies energy as hydrolyzes into GDP	

The Process
Can be split into 3 steps as follows:

Initiation

Elongation

Termination

Step 1: Initiation			
The Sequence	Small sub-unit looks for initiator seq.		
	In Prokaryotes, Shine-Dalgarno seq.	In Eukaryotes, Kozak seq.	
tRNA #1	Charged with an N- formylated Methionine	Called only by initiator AUG	
Initiation Factors	IF-3	Prevents binding of large sub-unit thus allowing small sub-unit to bind with mRNA	
	IF-2	Forms a complex with f-MettRNA & GTP and binds with the small sub-unit	
	IF-1	Joins in after f-MettRNA arrives at iniatiation codon AUG	



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Page 1 of 1.

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