

General Biology

Course No: BNG2003
Credits: 3.00

10. Genetics: From Genes to Proteins

Repetition

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Cracking the Code

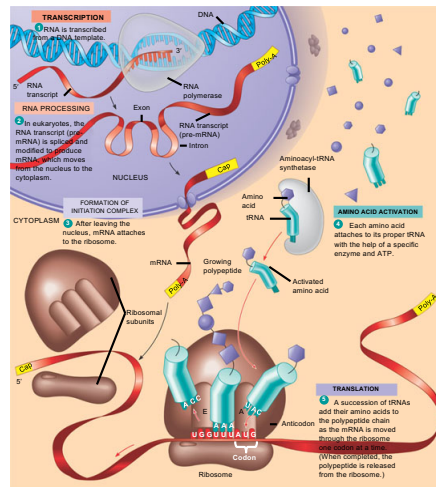
64 options

- A codon in messenger RNA is either translated into an amino acid or serves as a translational stop signal
- Codons must be read in the correct **reading frame** for the specified polypeptide to be produced
- The **genetic code is nearly universal** shared by organisms from the simplest bacteria to the most complex animals

		Second mRNA base						
		U	C	A	G			
U	UUU	Phe	UCU	UAU	Tyr	UGU	Cys	
	UUC		UCC	UAC	UGC			
	UUA	Leu	UCA	UAA	Stop	UGA	Stop	
	UUG		UCG	UAG	Stop	UGG	Trp	
C	CUU		CCU	CAU	His	CGU		
	CUC	Leu	CCC	CAC		CGC	Arg	
	CUA		CCA	CAA	Gln	CGA		
	CUG		CCG	CAG		CGG		
A	AUU		ACU	AAU	Asn	AGU	Ser	
	AUC	Ile	ACC	AAc		AGC		
	AUA		ACA	AAA	Lys	AGA		
	AUG	Met or start	ACG	AAG		AGG	Arg	
G	GUU		GCU	GAU	Asp	GGU		
	GUC	Val	GCC	GAC		GGC	Gly	
	GUA		GCA	GAA		GGA		
	GUG		GCG	GAG		GGG		

What is a gene? revisiting the question

- A gene is a region of DNA whose final product is either a polypeptide or an RNA molecule
- A summary of transcription and translation in a eukaryotic cell



Overview of four basic molecular genetic processes

