

From Gene to Protein

ne Gene – One Polypeptide Hypothesis:	
What is a gene?	
What is the Central Dogma of Biology?	

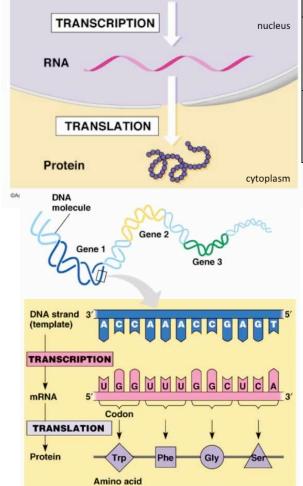
Basics of Gene Expression: The BIG Picture

What is genotype?

What is phenotype?

Complete the table using the diagram below.

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Stage	Cellular location	Process and Product
Transcription		
Translation		

From Gene to Protein: Overview of Protein Synthesis

Analyze the diagram to help you answer the questions.

Questions:

- 1. What is the purpose of mRNA?
- 2. What is a codon?
- 3. What is tRNA & which process is it involved with?
- 4. Why isn't it called the one gene-one protein hypothesis?



Crack the Code:

Transcribe & Translate this small portion of Hemoglobin (globular protein that carries oxygen)

- Before you start determine which strand is the is the template strand?
 - 3' CAA GTG GAG TGA GGG CTC CTC TTT AGG CGA 5'
 - 5' GTT CAC CTC ACT CCC GAG GAG AAA TCC GCT 3'





Arg, R
Lys, K
Phe, F
Tyr, Y
Trp, W
Gln, Q
Gly, G
Ala, A
His, H
Ser, S
Pro, P
Glu, E
Asp, D
Thr, T
Cys, C
Met, M
Leu, L
Asn, N
Ile, I
Val, V

	Second letter							
		U	С	Α	G			
First letter	U	UUU Phe UUC Leu UUA Leu	UCU UCC UCA UCG	UAU Tyr UAC Stop UAG Stop	UGU Cys UGA Stop UGG Trp	UCAG		
	C	CUC CUA CUG	CCU CCC CCA CCG	CAU His CAC GIn CAG	CGU CGC CGA CGG	UCAG		
	A	AUU AUC AUA lle AUG Met	ACU ACC ACA ACG	AAU Asn AAC AAA AAG Lys	AGU Ser AGA AGG Arg	UCAG		
	G	GUU GUC GUA GUG	GCU GCC GCA GCG	GAU Asp GAC Asp GAA GIU	GGU GGC GGA GGG	UCAG		

Second letter

Third letter