DNA: structure & replication

From Chapter 13

Watson and Crick

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Figure 13.1

Rosalind Franklin

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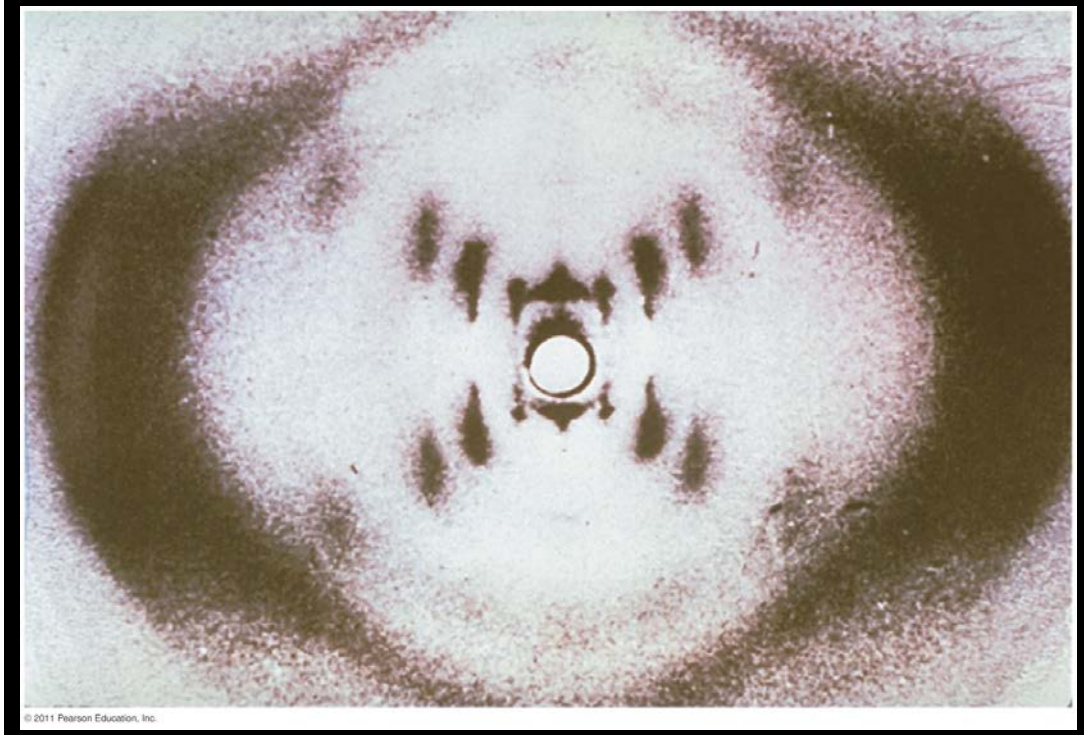
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Figures 13.3, 13.2

The Structure of DNA

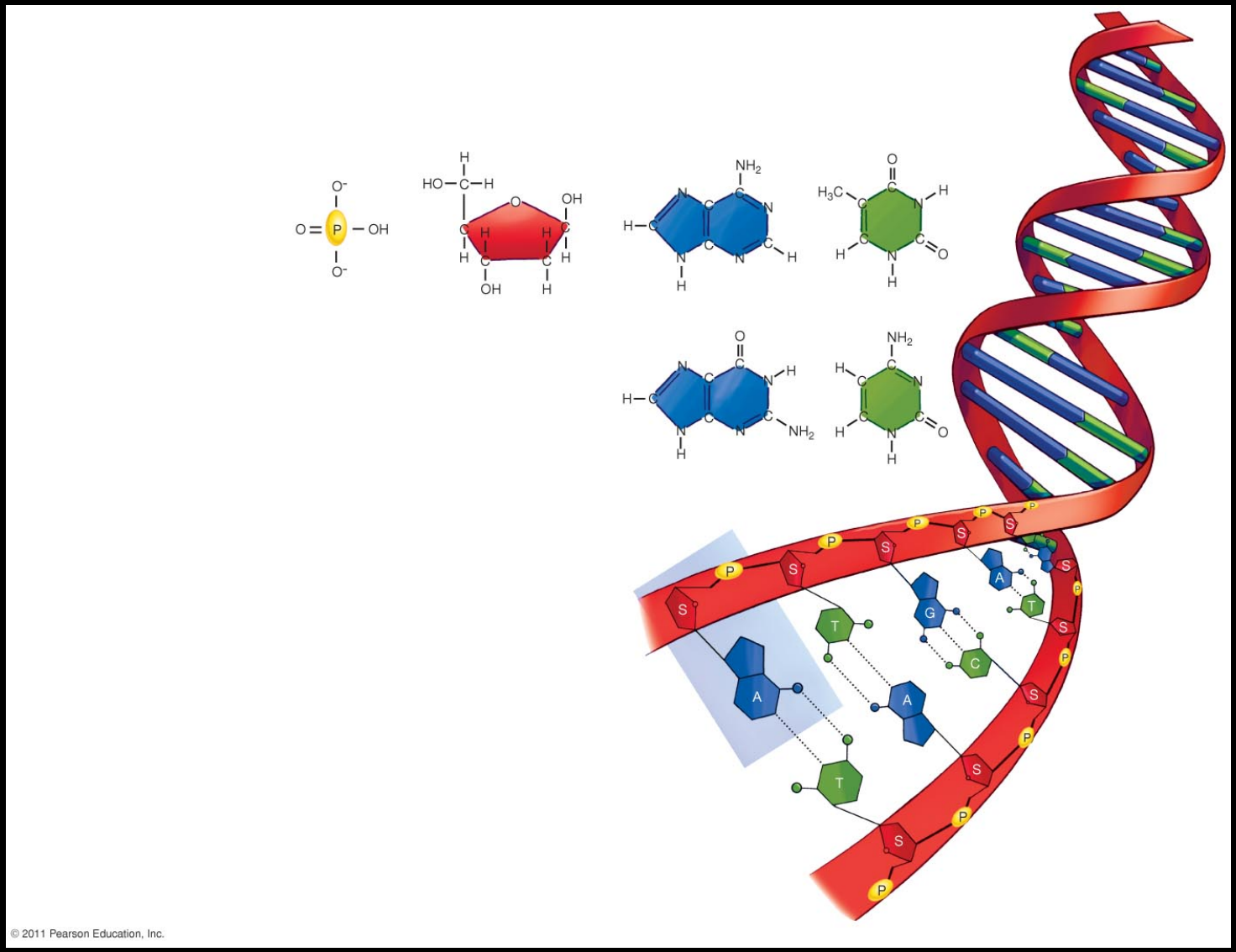

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Figure 13.5

DNA Replication

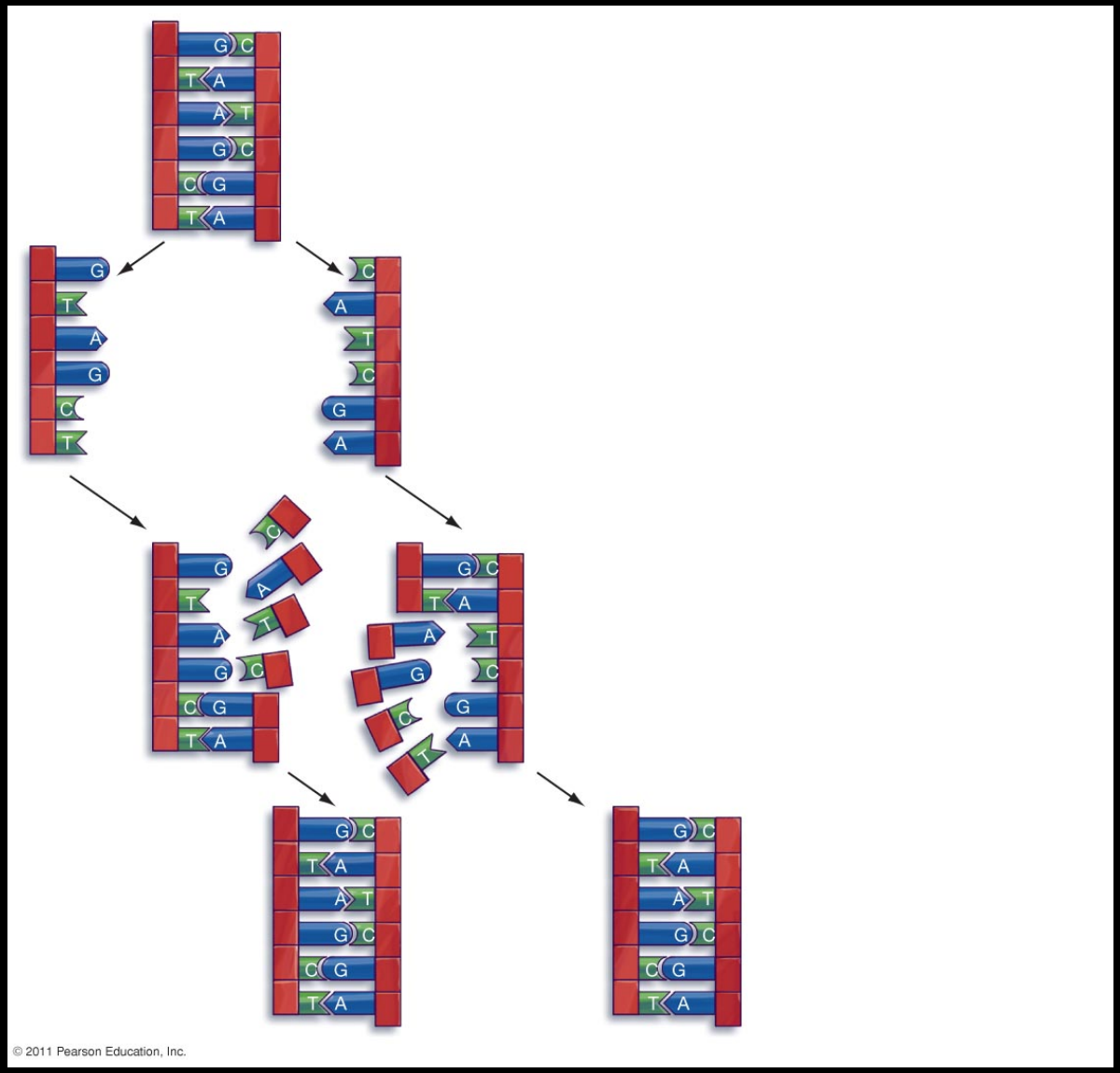

Figure 13.6

DNA Replication

Figure 13.7

Mutations

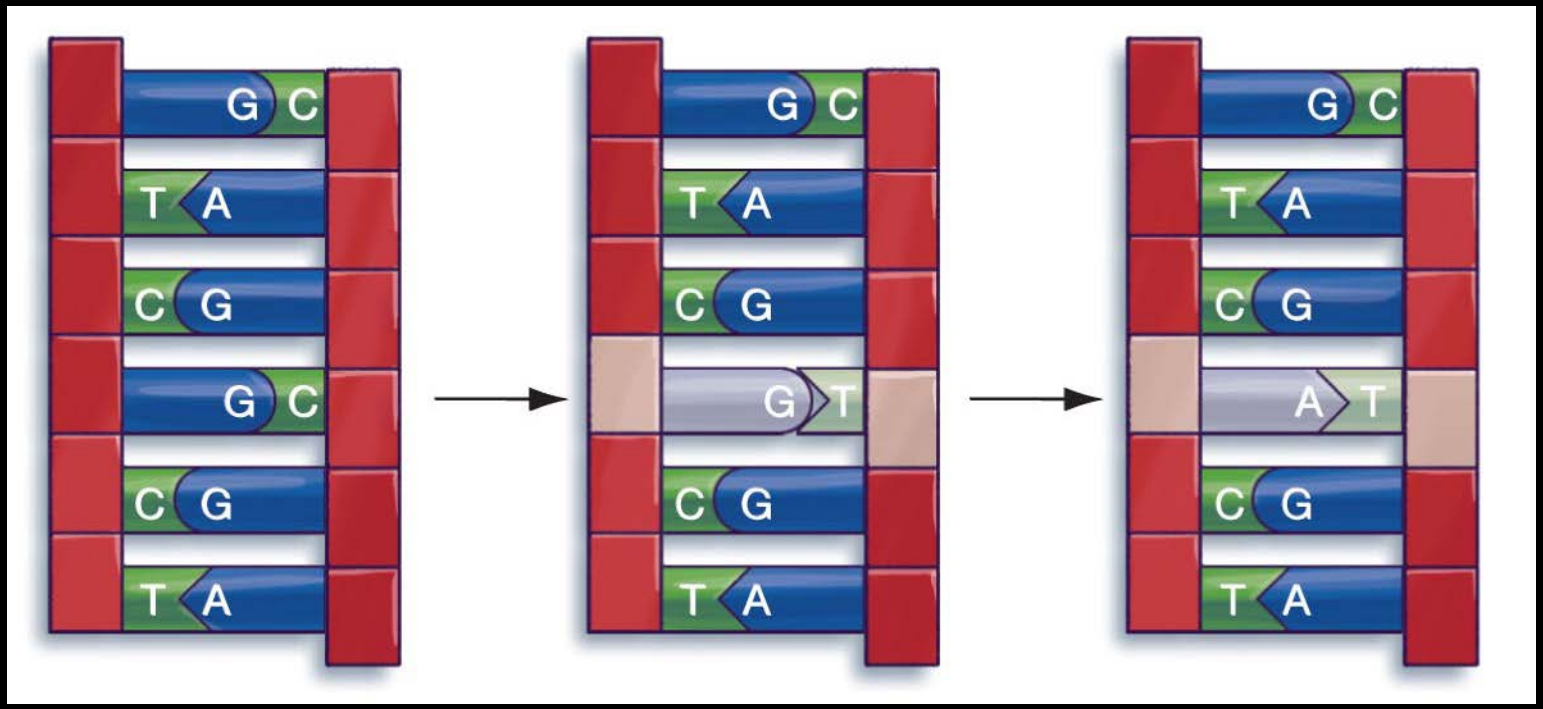

Figure 13.8

Protein Synthesis

From Chapter 14

Protein structure

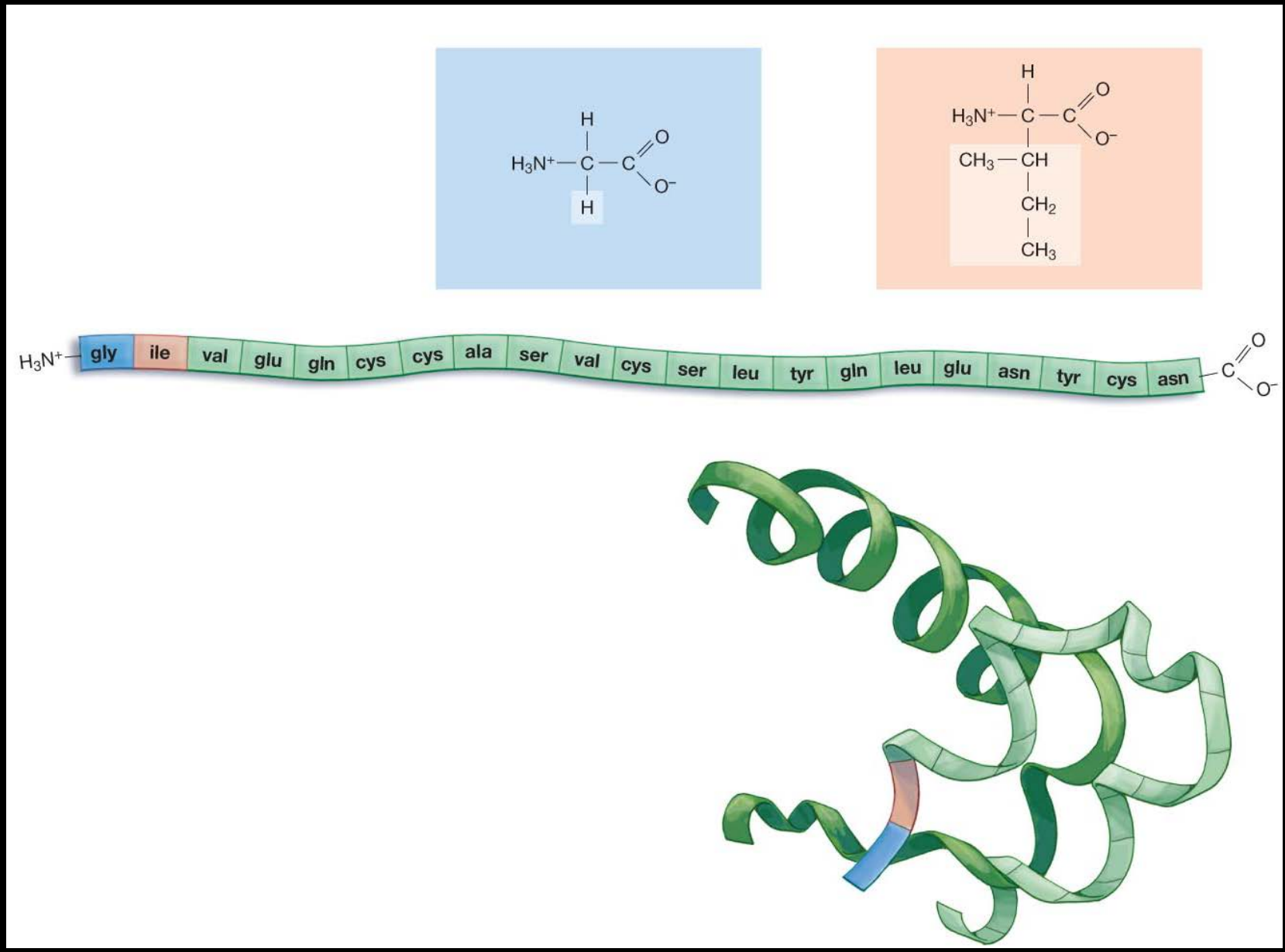

Figure 14.1

Overview of synthesis

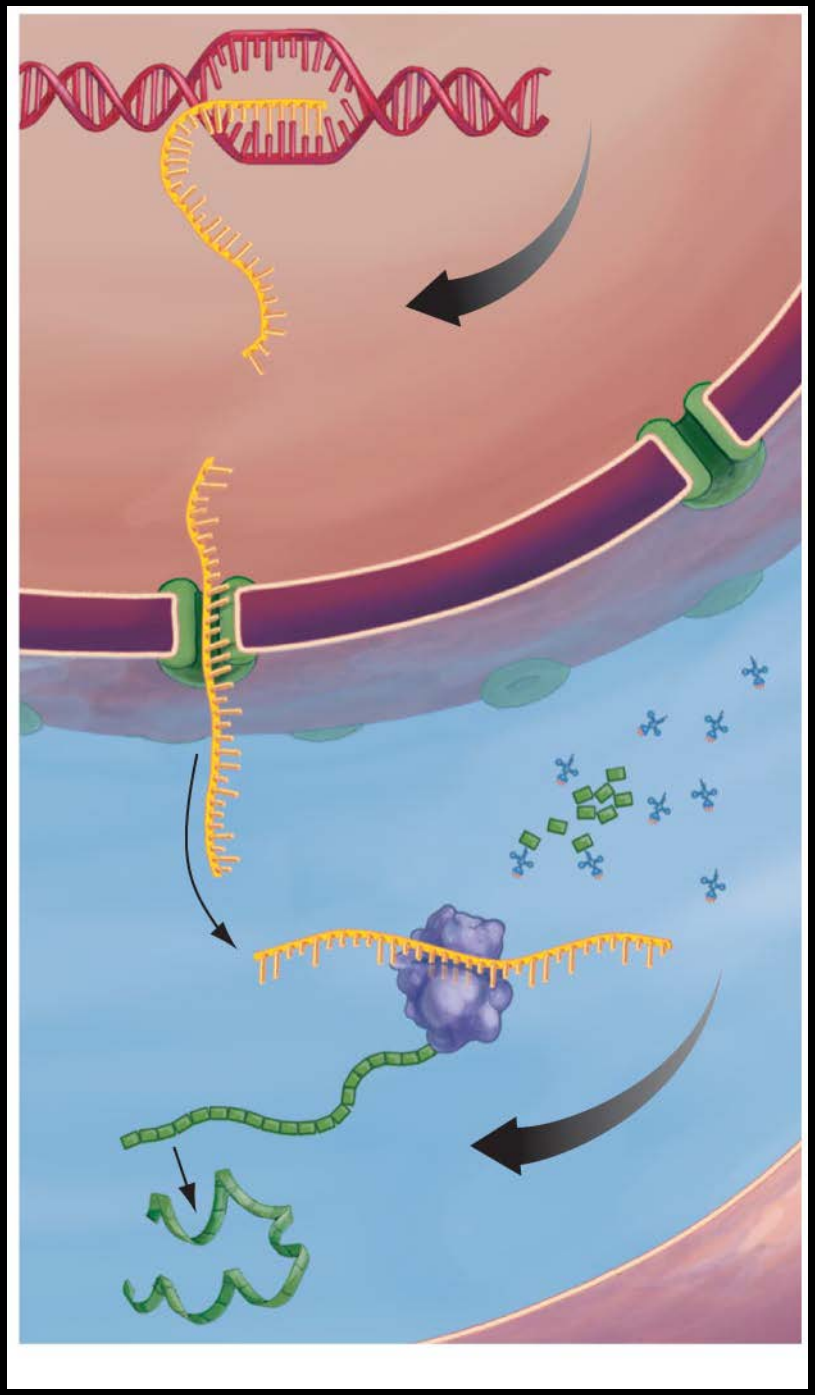

Figure 14.2

Transcription

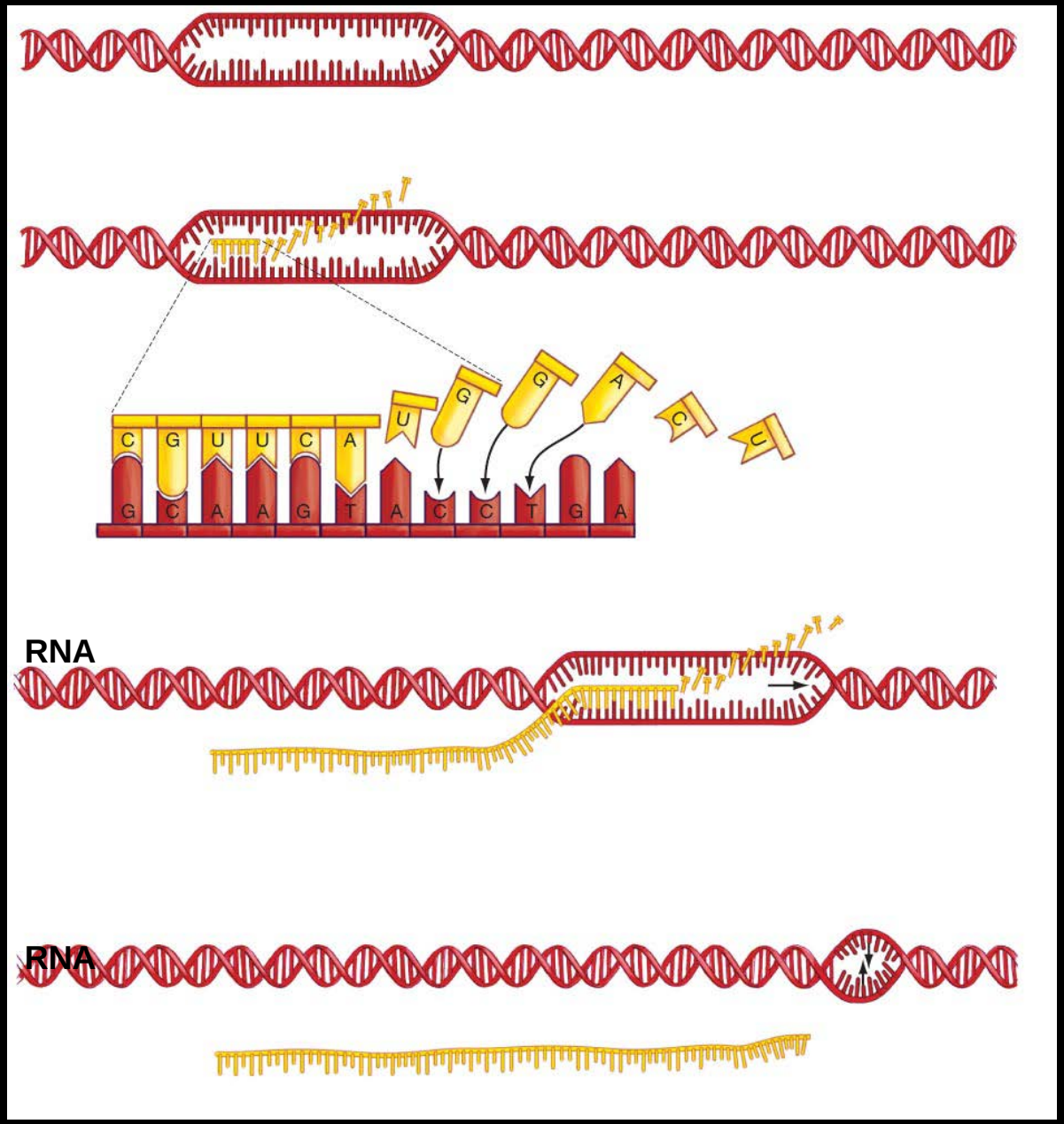

Figure 14.4

Transfer RNA

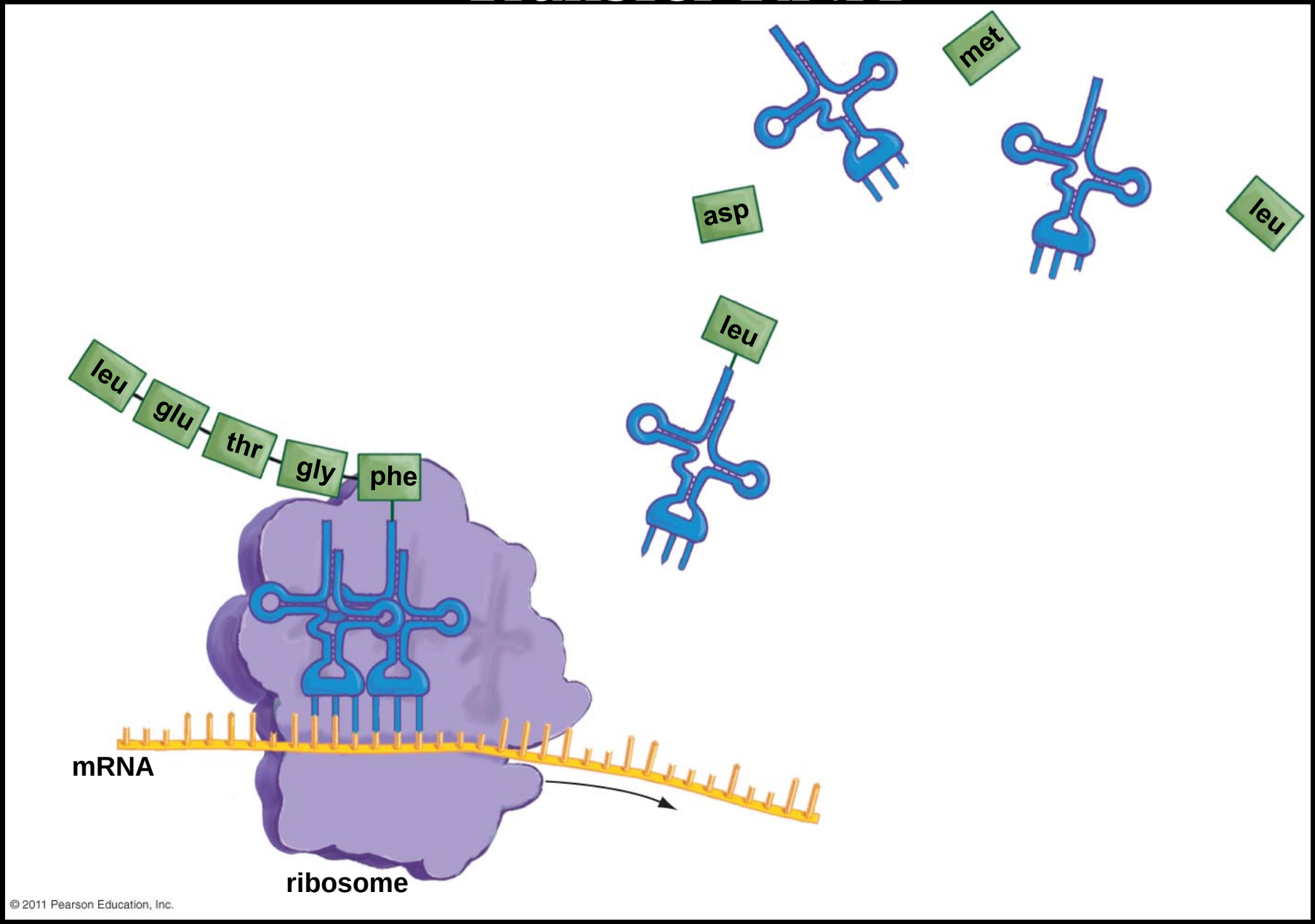

Figure 14.6

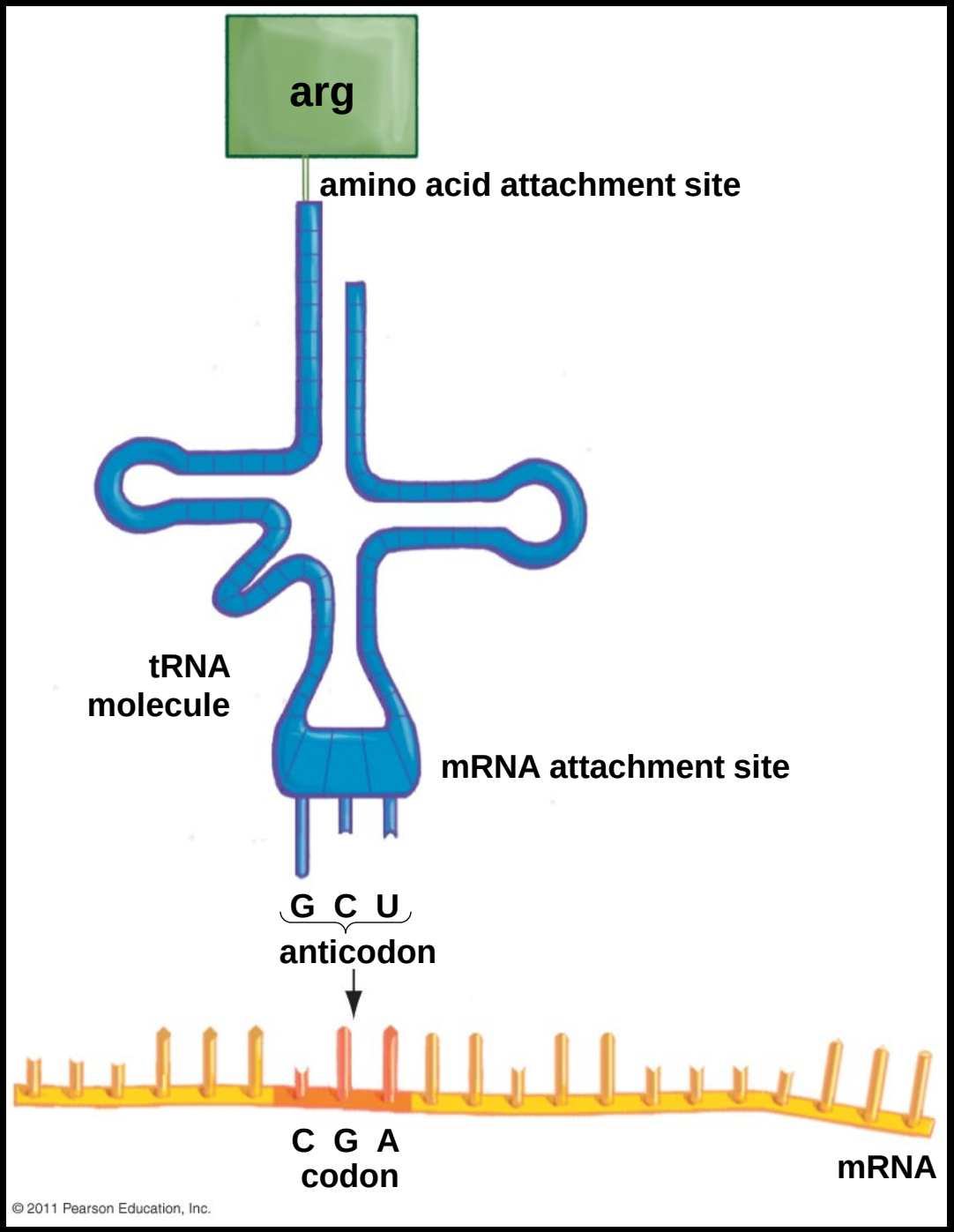
arg
amino acid attachment site
tRNA molecule
mRNA attachment site
G C U
anticodon
C G A
codon
mRNA
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Figure 14.7

Translation

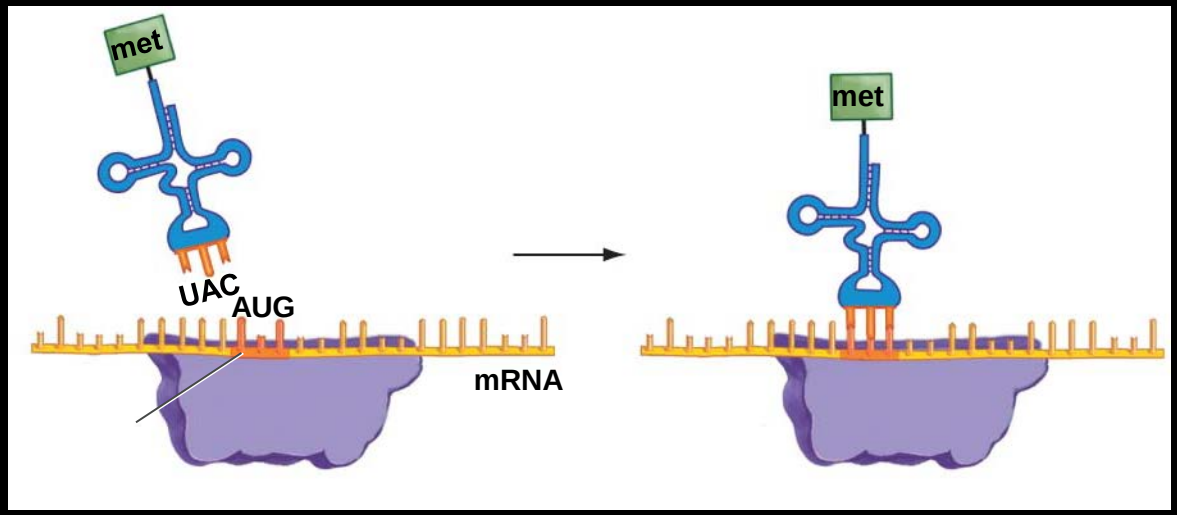


Figure 14.9

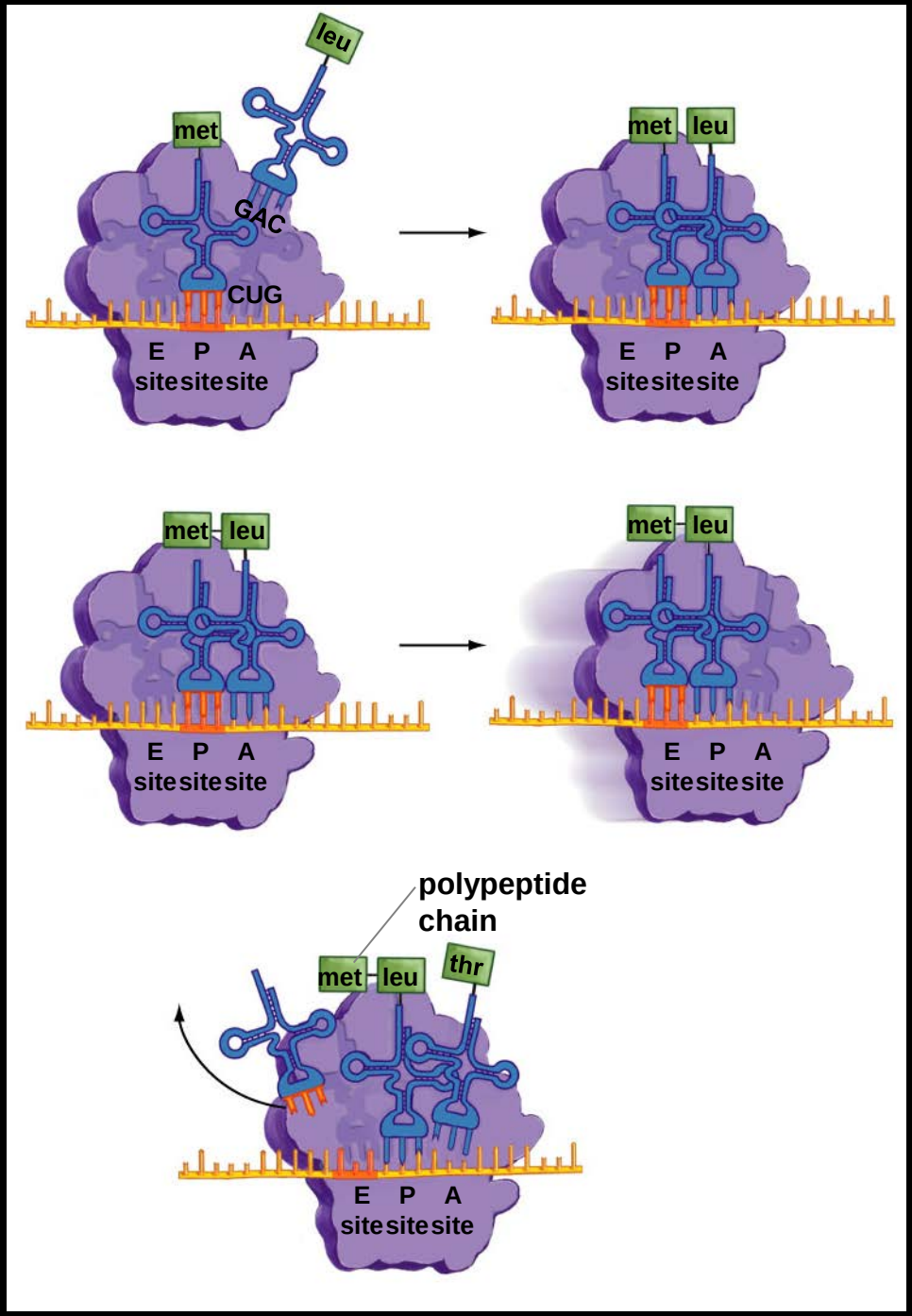
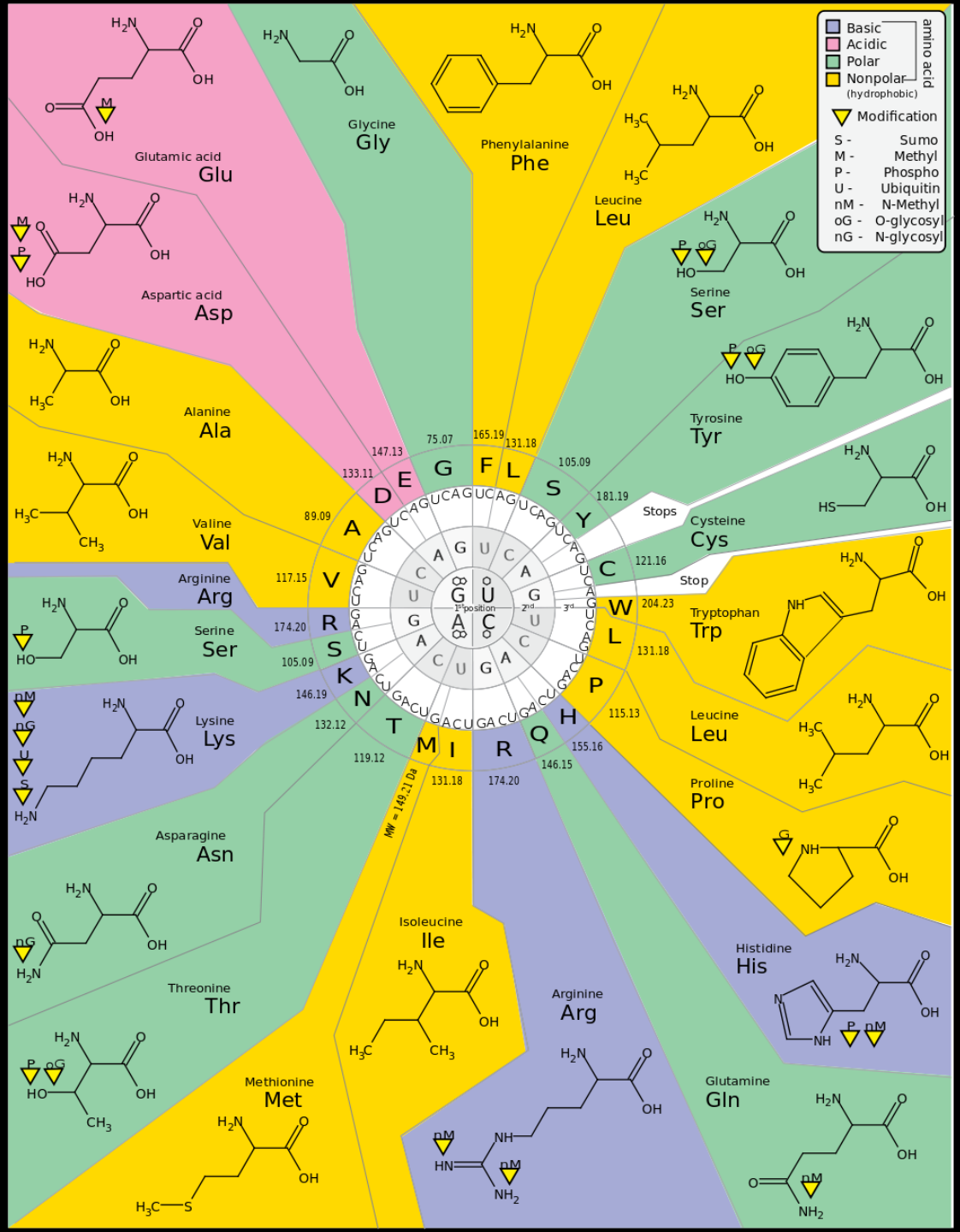

leu
met
GAC
CUG
E P A
site site site
met leu
E P A
site site site
met leu
E P A
site site site
met leu
E P A
site site site
polypeptide
chain
met leu thr
E P A
site site site

Figure 14.10



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Genetic Code/Amino Acid Codons

First Base	Second Base				Third Base
	U	C	A	G	
U	phenylanine	serine	tyrosine	cysteine	U
	phenylanine	serine	tyrosine	cysteine	C
	leucine	serine	STOP	STOP	A
	leucine	serine	STOP	tryptophan	G
C	leucine	proline	histidine	arginine	U
	leucine	proline	histidine	arginine	C
	leucine	proline	glutamine	arginine	A
	leucine	proline	glutamine	arginine	G
A	isoleucine	threonine	asparagine	serine	U
	isoleucine	threonine	asparagine	serine	C
	isoleucine	threonine	lysine	arginine	A
	(start) methionine	threonine	lysine	arginine	G
G	valine	alanine	aspartate	glycine	U
	valine	alanine	aspartate	glycine	C
	valine	alanine	glutamate	glycine	A
	valine	alanine	glutamate	glycine	G

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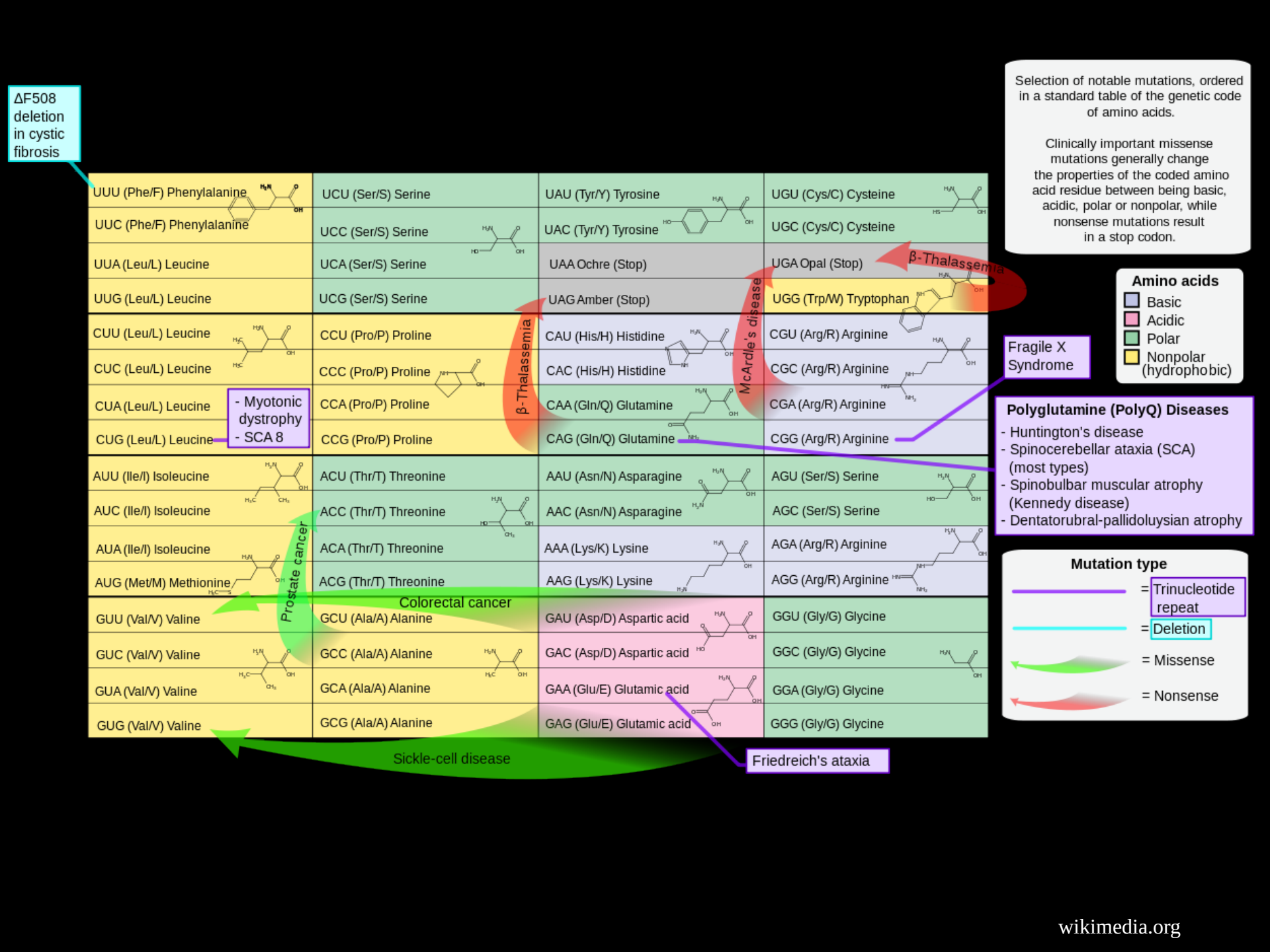

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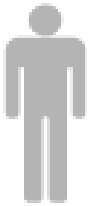
Top six causes of all cancers in men and women

Risk factors of the 158,700 cancers diagnosed in men and 155,600 cancers diagnosed in women each year

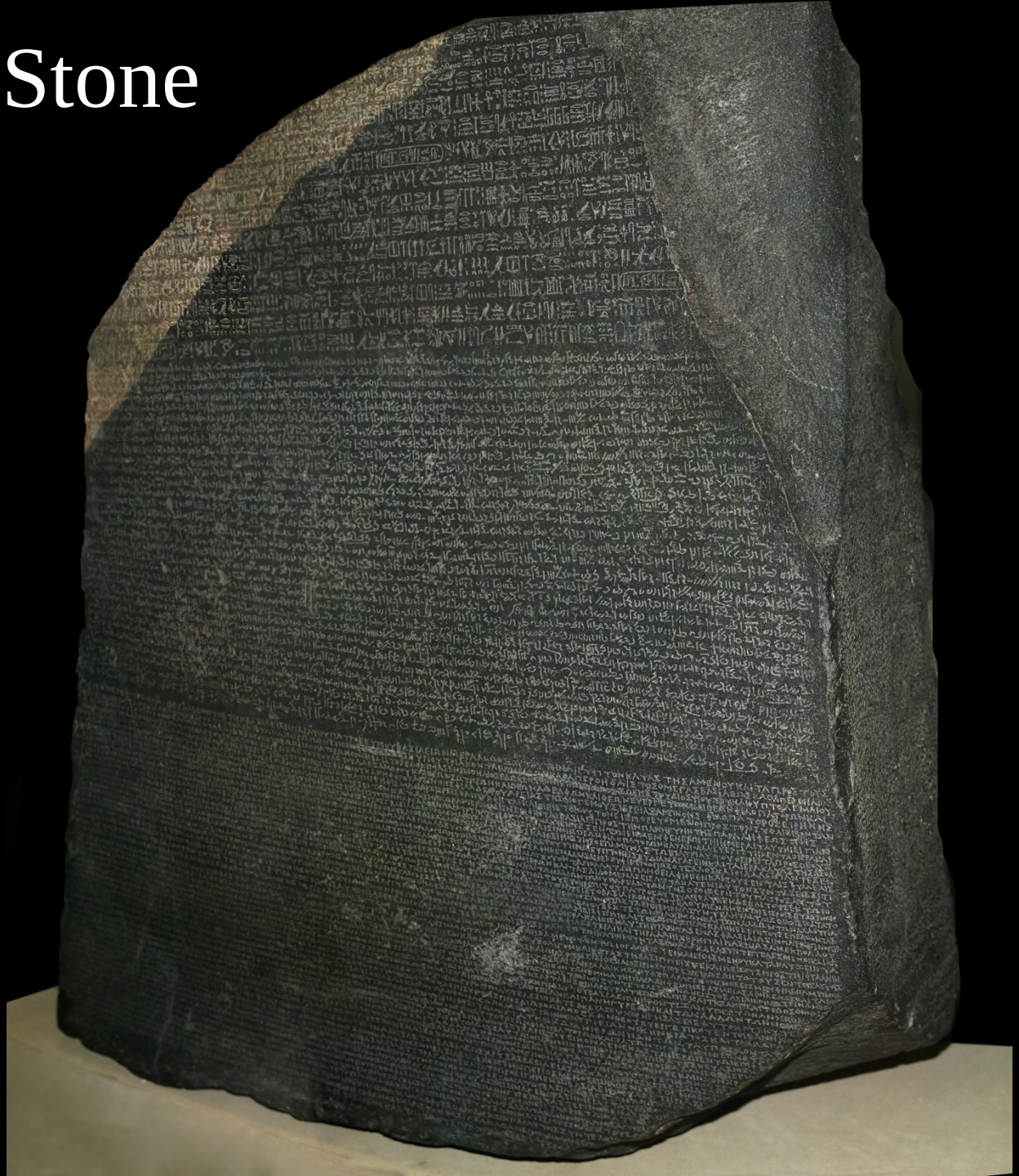


Ranking		Risk factor %		Risk factor %
1	Tobacco	23	Tobacco	15.6
2	Lack of fruit & vegetables	6.1	Overweight	6.9
3	Occupational hazard	4.9	Infection	3.7
4	Alcohol	4.6	Exposure to sun & sunbeds	3.6
5	Overweight	4.1	Lack of fruit & vegetables	3.4
6	Exposure to sun & sunbeds	3.5	Alcohol	3.3

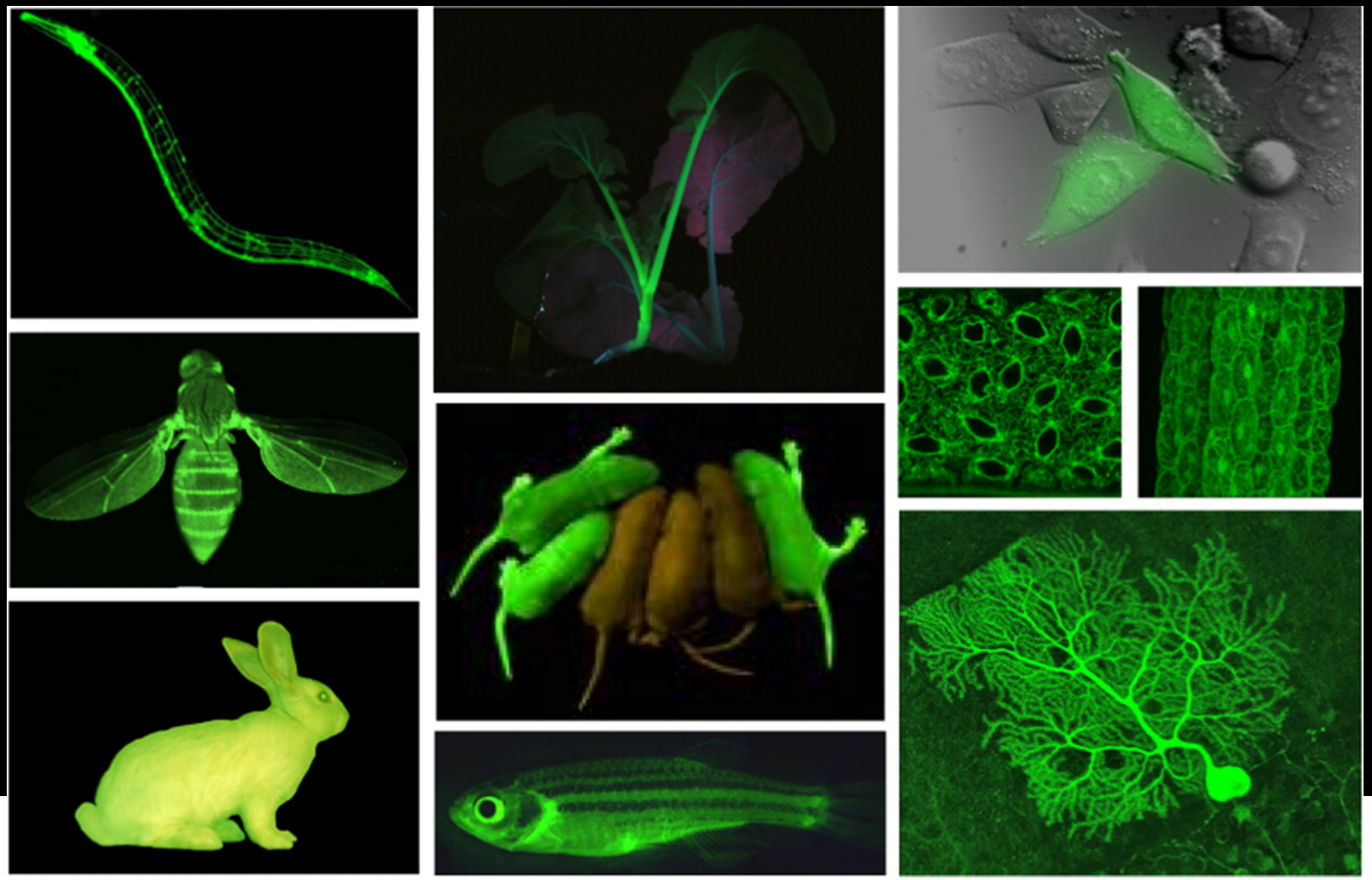
Source: Cancer Research UK

http://www.bbc.co.uk/

Rosetta Stone



A gallery of GFP images. {By columns left to right: C. elegans, Drosophila, Alba the GFP bunny, canola, mice, zebrafish, cultured HeLa cells, Drosophila embryonic cells, Arabidopsis thaliana hypocotyl cells, and mouse Purkinje cell}



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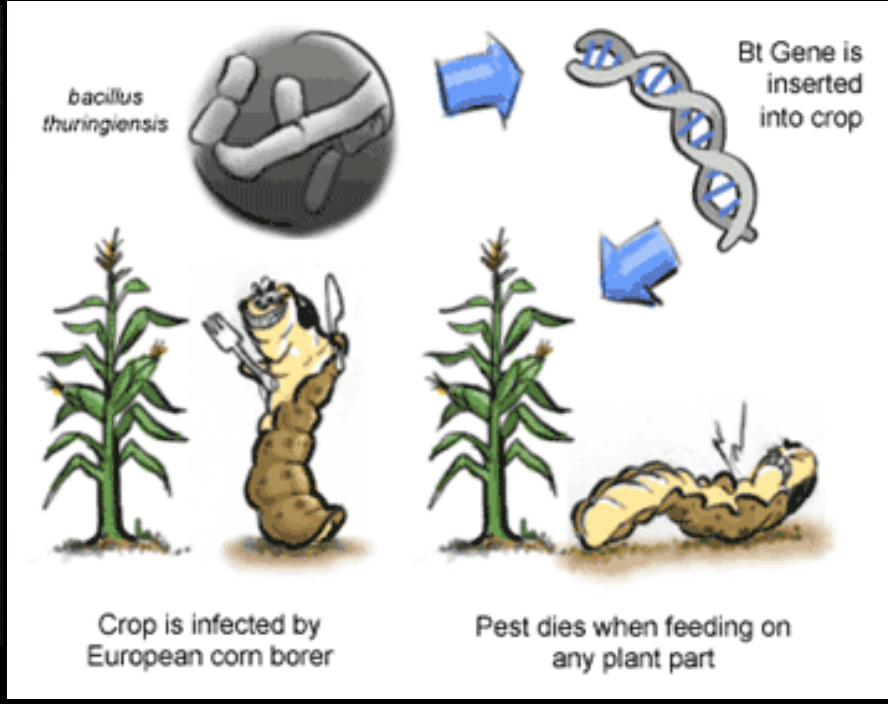

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