

Protein Synthesis : Transcription

1 2 3 4 5



TT

Exons

Splicing

DNA Helicase

Hydrogen Bonds

Complementary
Base Pairing

RNA Polymerase



Prokaryotes vs. Eukaryotes

Prokaryotes: →

→

Eukaryotes:

→



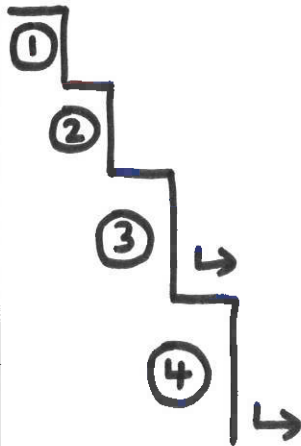
Transcription Factors

- 1
- 2
- 3
- 4
- 5

Transcription Factors



Promoter Region



e.g.



Regulator
Genes

Structural Genes

The lac Operon

- 1
- 2
- 3
- 4
- 5

No Lactose



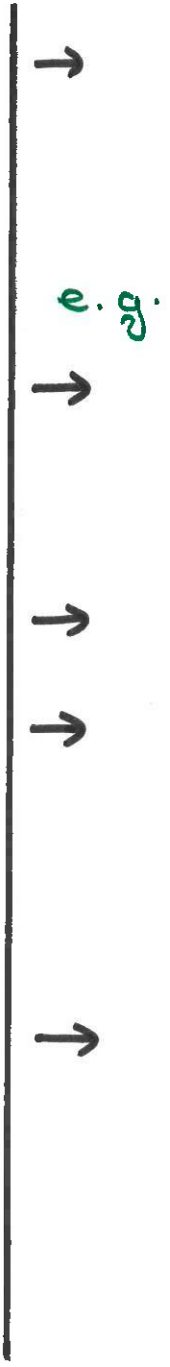
with Lactose





Second Messengers

1 2 3 4 5

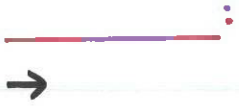




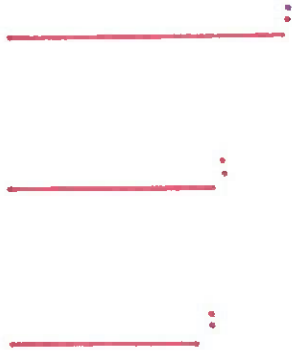
Mutations

- 1
- 2
- 3
- 4
- 5

Mutation



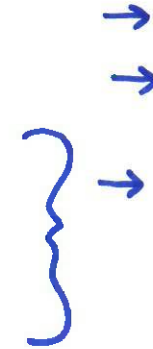
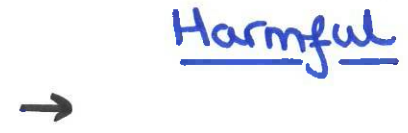
Substitution



Insertion



Deletion



e.g.

e.g.

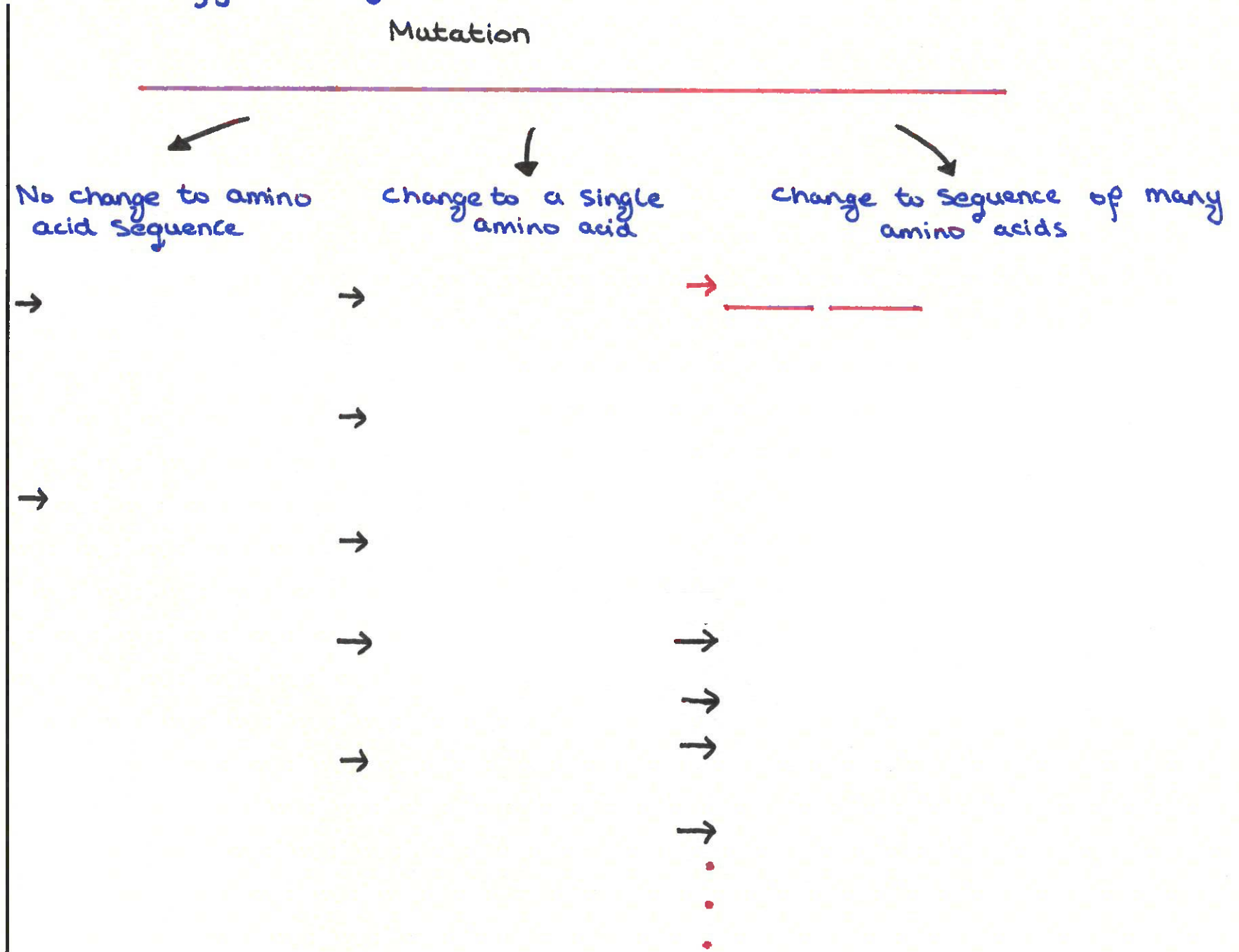


Mutation

Affects of Mutations

Degenerate

Frame Shift



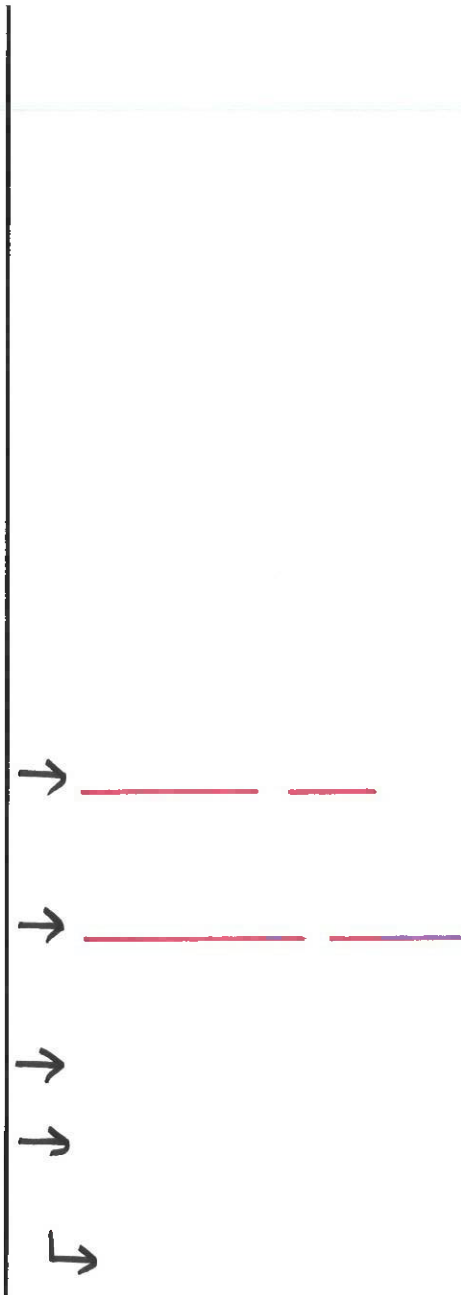


Homeobox Genes

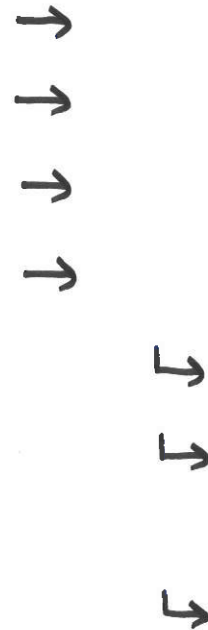
- 1
- 2
- 3
- 4
- 5

Homeobox Gene

Homeodomain Protein



Highly Conserved between Species





Apoptosis

Apoptosis

Process

Regulated

Homeobox
Genes

Uses

