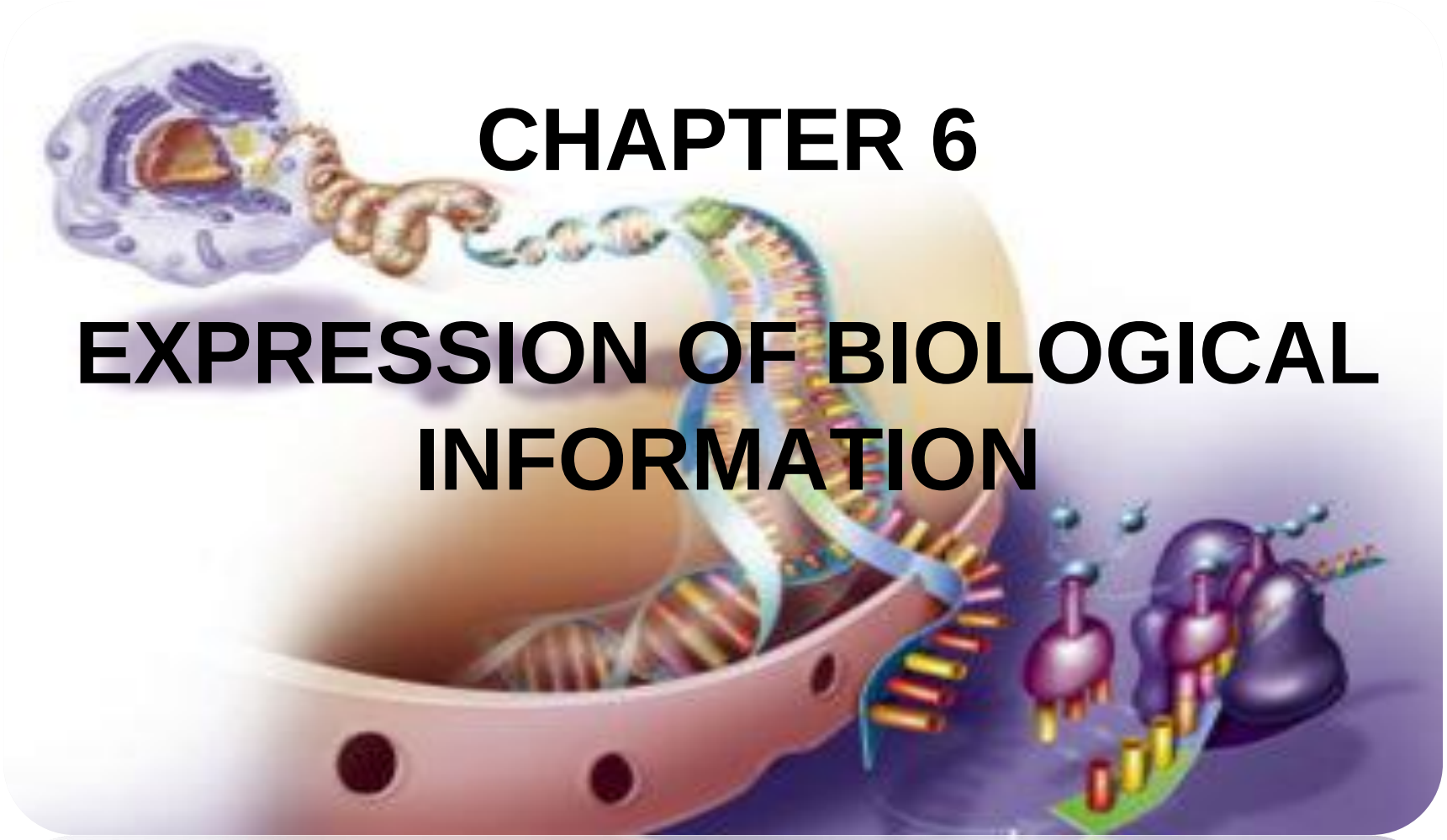
CHAPTER 6

EXPRESSION OF BIOLOGICAL INFORMATION



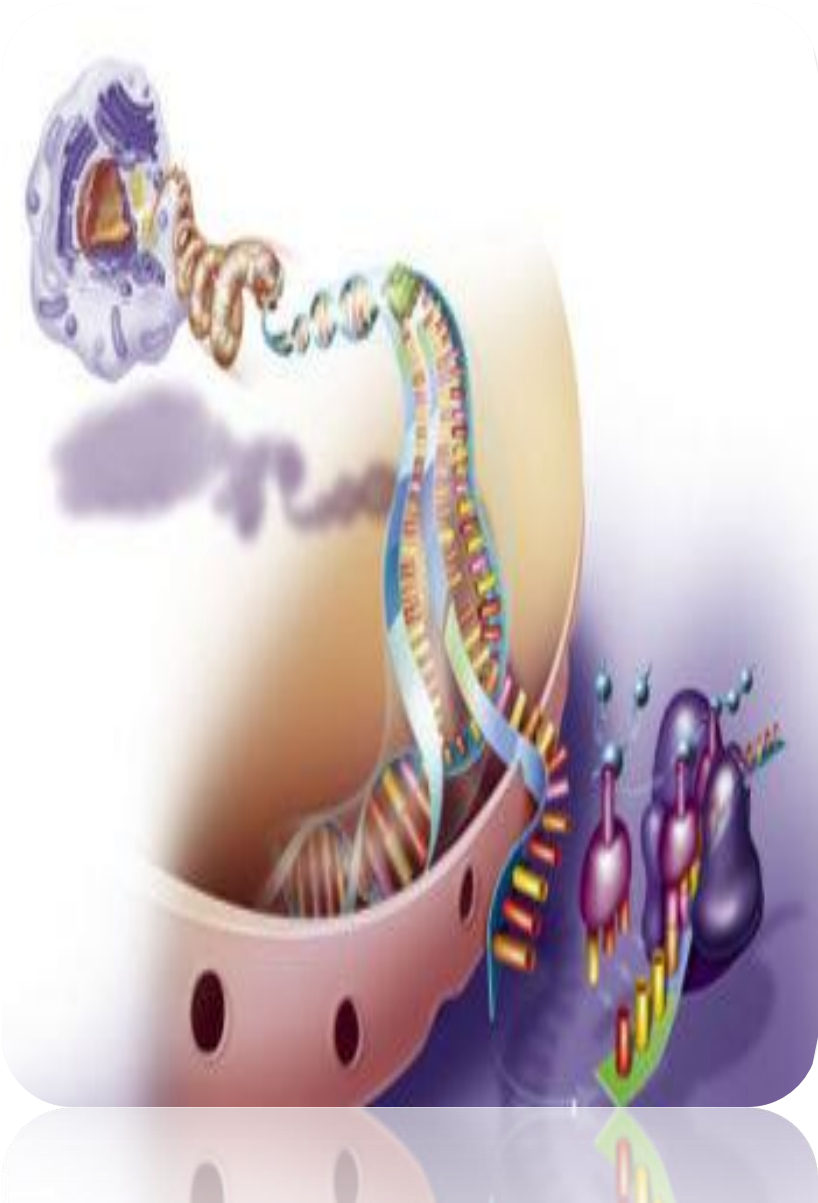
6.0 Expression of Biological Information

6.1 DNA and genetic information

6.2 DNA replication

6.3 Protein synthesis: transcription and translation

6.4 Gene regulation and expression – *lac* operon



6.1 DNA and Genetic Information

LEARNING OUTCOMES :

At the end of this topic, students should be able to:

(a) State the concept of Central Dogma

Central Dogma

- In general, genetic information flows from DNA to RNA to protein.
- this concept was called the *central dogma* by **Francis Crick in 1956**.

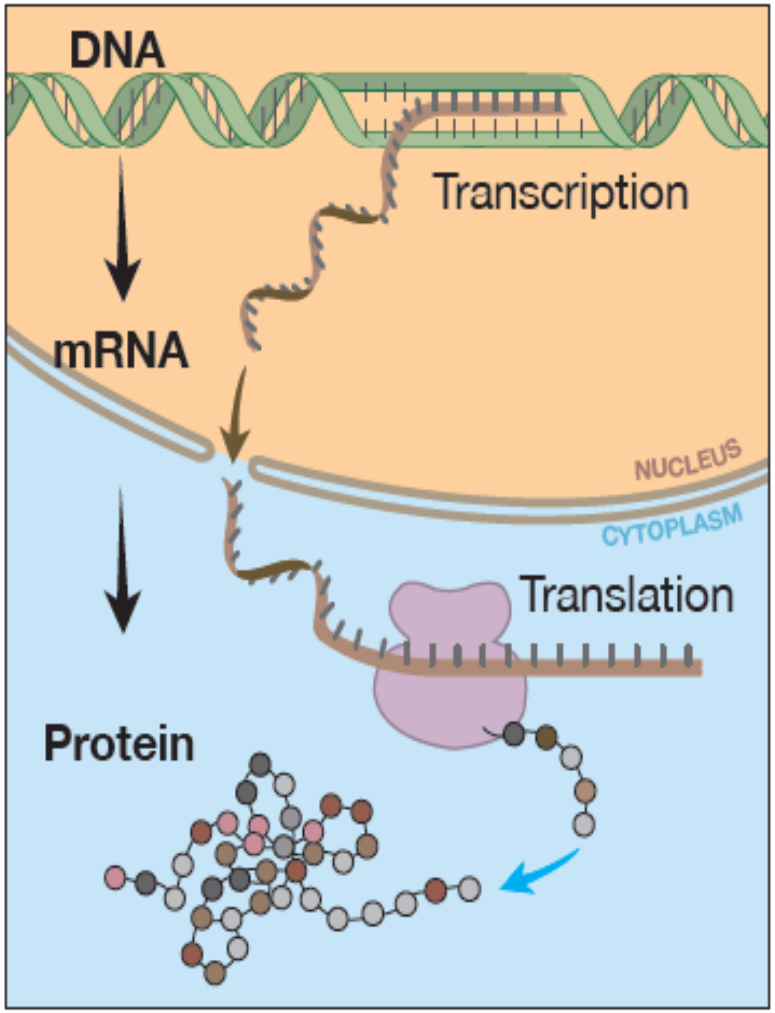
Central Dogma

- Genes provide the instructions for making specific protein, but a genes does not build a protein directly.

- Gene expression involves two main stages:

    1. Transcription

    2. Translation



Central Dogma

- Genetic information is transferred from parent to offspring via **DNA replication**
- Within the cell, genetic information is transferred from DNA to mRNA via **transcription**.
- Then, mRNA strand will be translated into sequence of amino acids to form protein via **translation**