Source: ⟦KBhBIO101NucleicAcidsDNARNA⟧

1 | **Central Dogma**

Central dogma is the concept that the instructions of protein synthesis comes from the DNA, and that DNA creates RNA creates Protein, RNA creates RNA, DNA creates DNA, but this flow path could not be reversed.

We know a little bit more about central dogma now, and now have more concise operations for the processes defined in the central dogma, namely…

- **DNA Polymerase** takes DNA and makes more DNA

    - Duplicates cell DNA
    - Could be hijacked during cell cycle to duplicate DNA viruses
    - DNA viruses may also carry their DNA Polymerease to not wait for the cell cycle

- **RNA Polymerease** takes DNA and makes mRNA

    - Have lower fidelity with an error about 1/100,000
    - Hence why safety mechanism needed

1.1 | **Protein Synthesis**

See ⟦KBhBIO101ProteinSynthesis⟧

Eukarotic gene expression is regulated at many stages because mRNA is pretty error-prone and so there needs to be many different steps
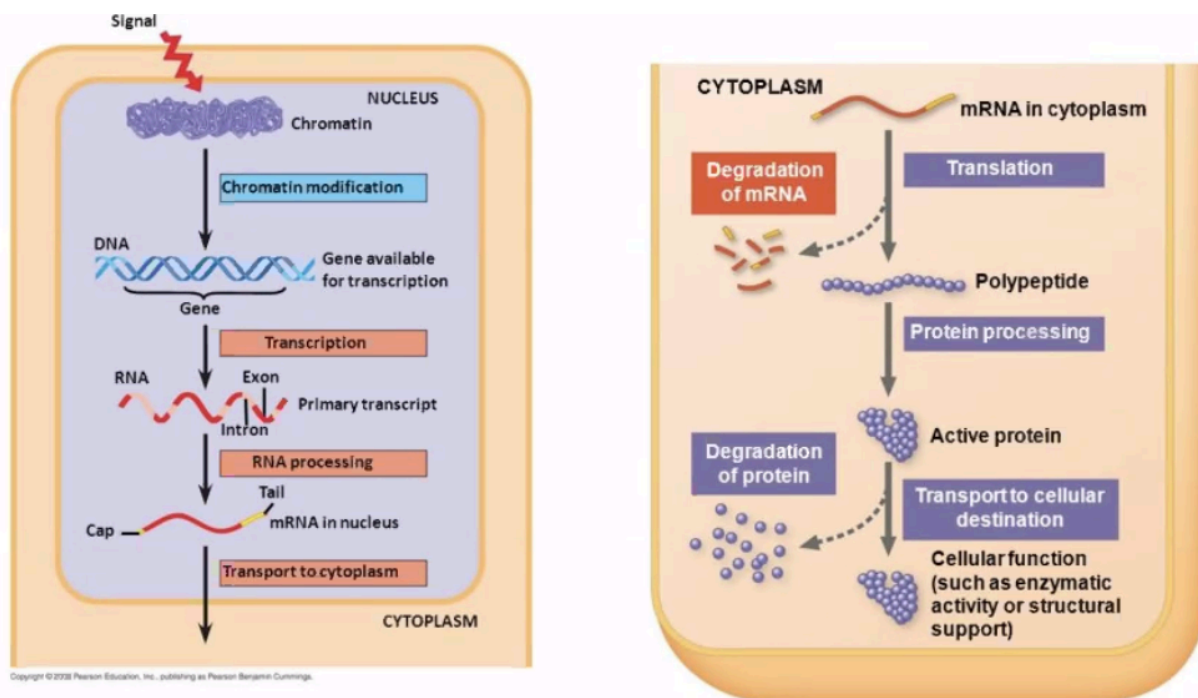

Figure 1: preprocessing.png

1.2 | **DNA Replication**

See ⟦KBhBIO101DNAReplication⟧

1.3 | **RNA Replication**

See ⟦KBhBIO101RNAReplication⟧

1.4 | **List of Kool Proteins**

Name	Function
RNA Polymerase	*transcripts*: takes DNA and turns into mRNA
DNA Polymerase	*replicates*: takes DNA and makes more copy of it
RNA-Dependent RNA Polymerase	*replicates*: takes RNA and makes more copy of it. Basically only viruses use it.
Promoter	*signals*: DNA signal of the start of the DNA.
Terminator	*signals*: DNA signal of the end of the DNA.