Universidad Nacional de San Agustín de Arequipa

Bioinformatics

Biology of cell

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Objectives

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- Understand about the biology of DNA.

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- Understand about the biology of DNA.
- Understand how is the process of protein synthesis from DNA.

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The biology of cells
Where is DNA?

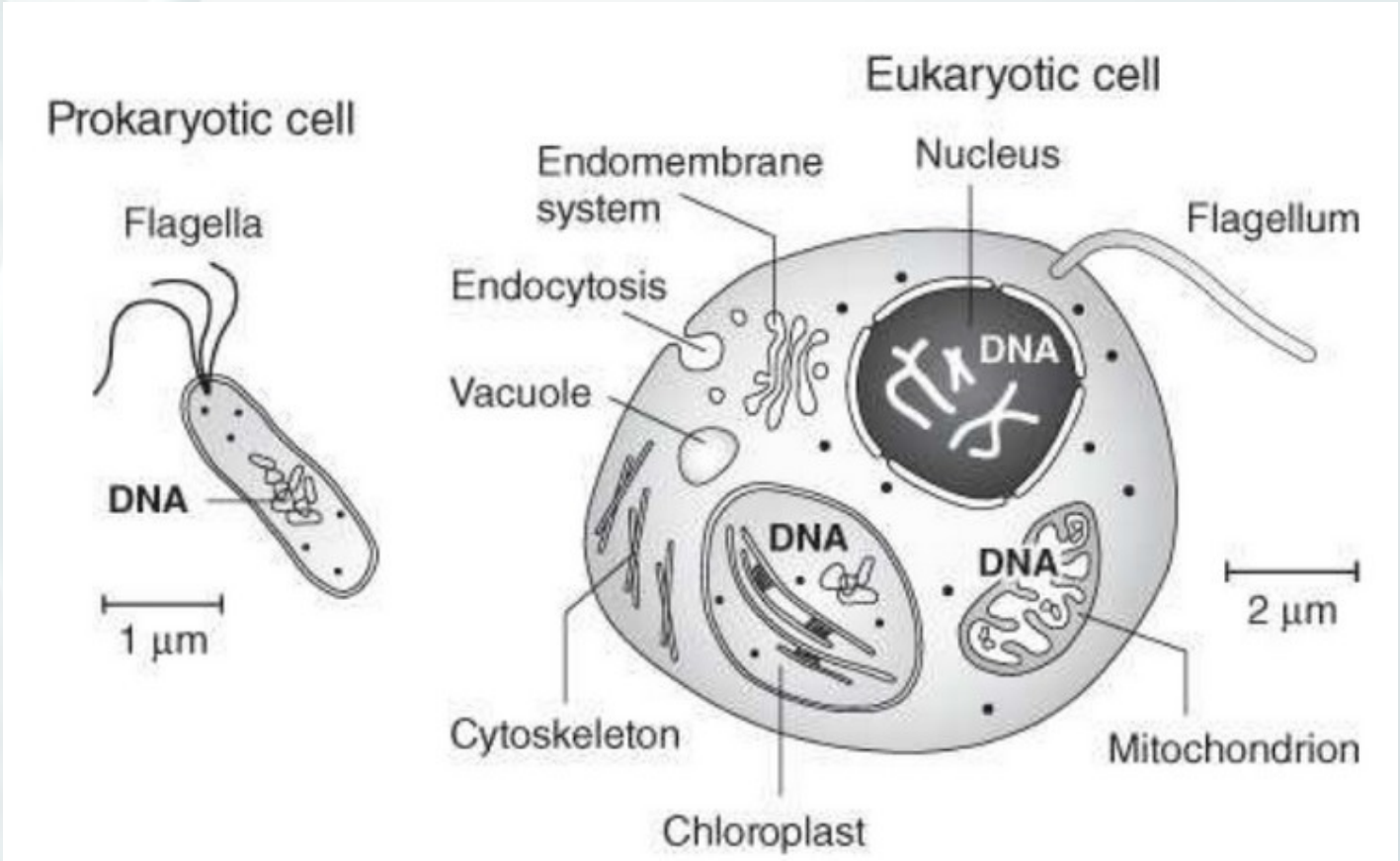

Figure: Where DNA is located in prokaryote and eukaryote cells [1].

The biology of cells
Where is DNA?

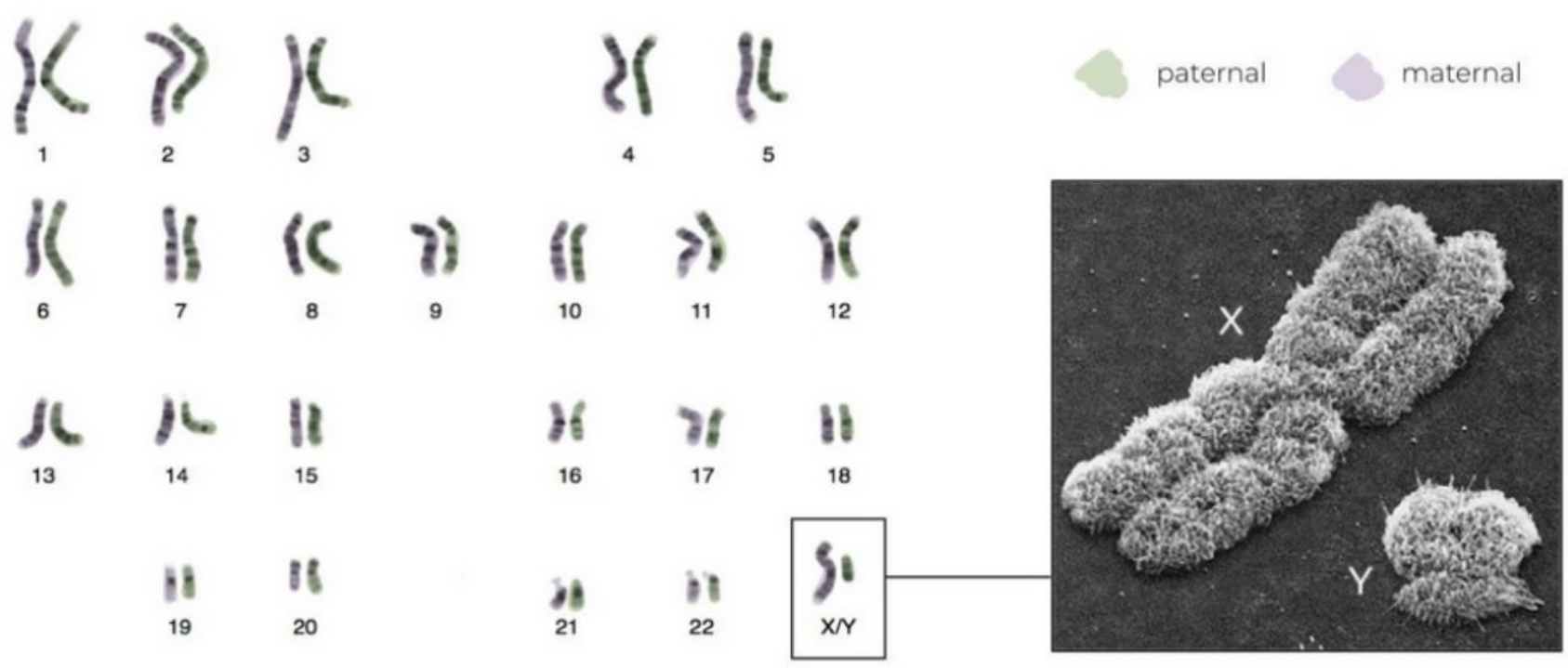

Figure: The 23 pairs of chromosomes in human cells [1].

The biology of cells
Where is DNA?

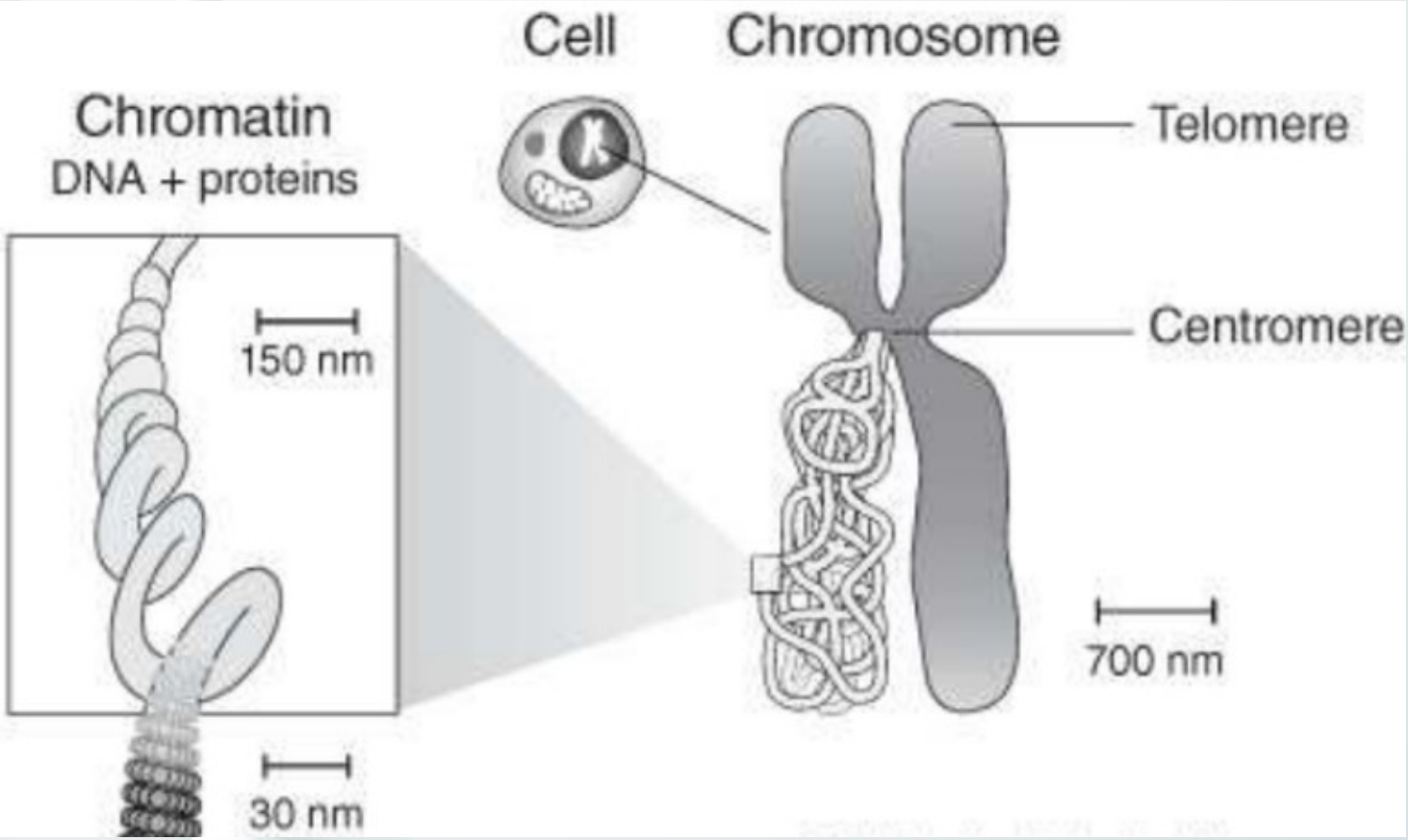

Figure: Chromatin: Material composed of DNA and proteins that condense to form chromosomes [1].

The biology of cells
Where is DNA?

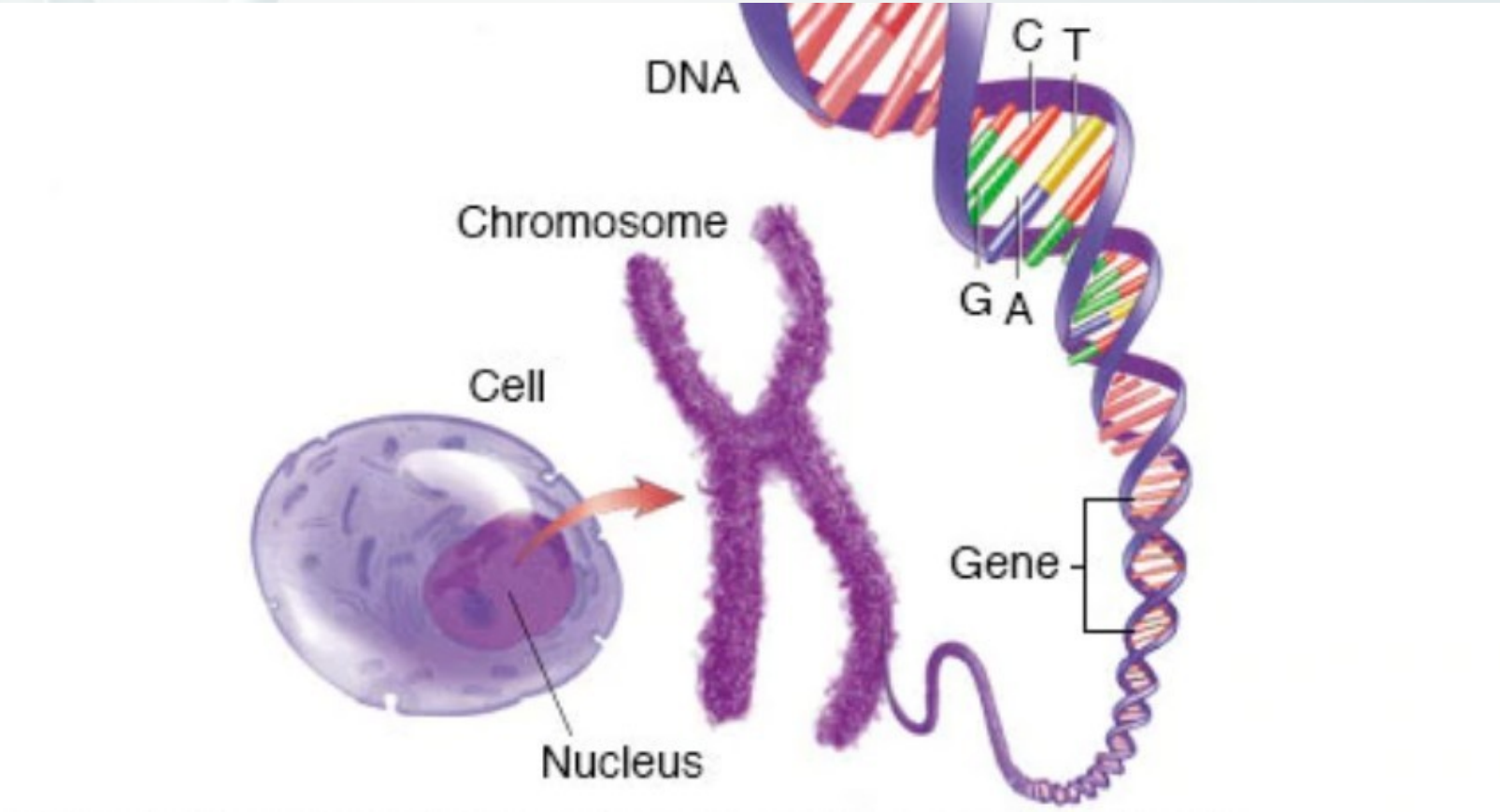

Figure: Where DNA is located [2].

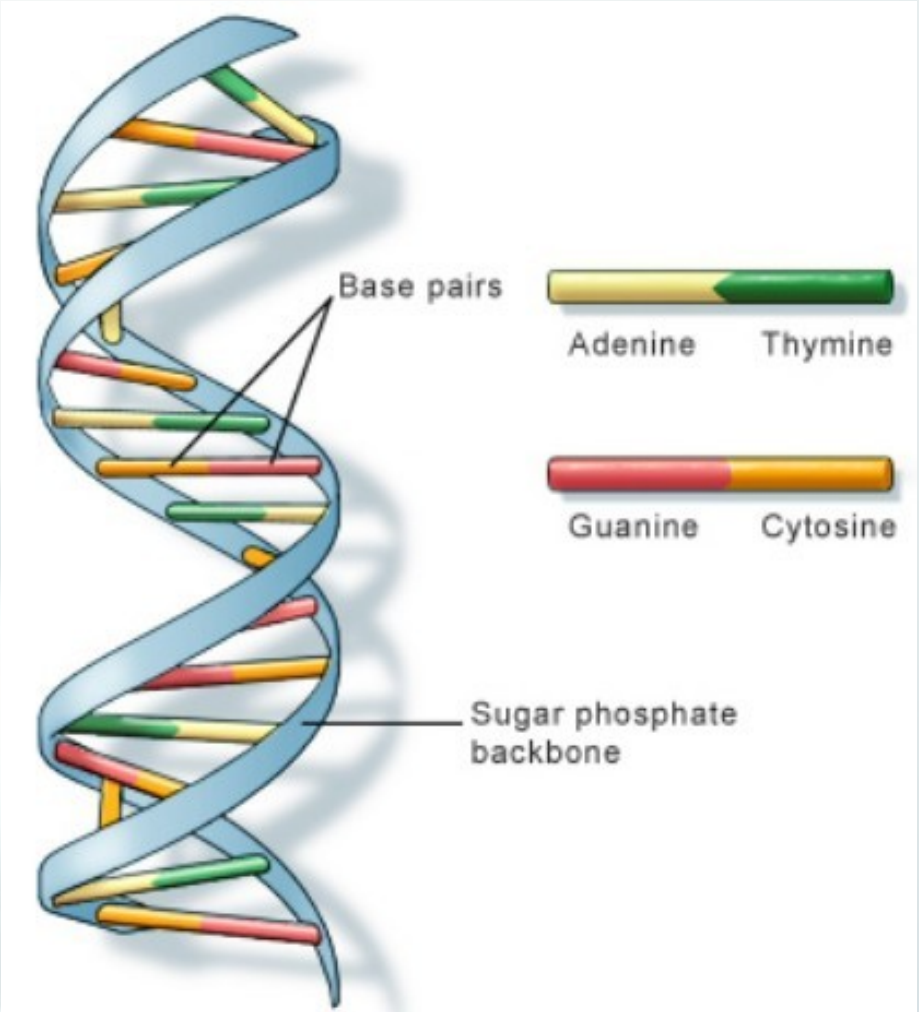

Figure: Molecules in DNA. Adenine, Thymine, Guanine and Cytosine [2].

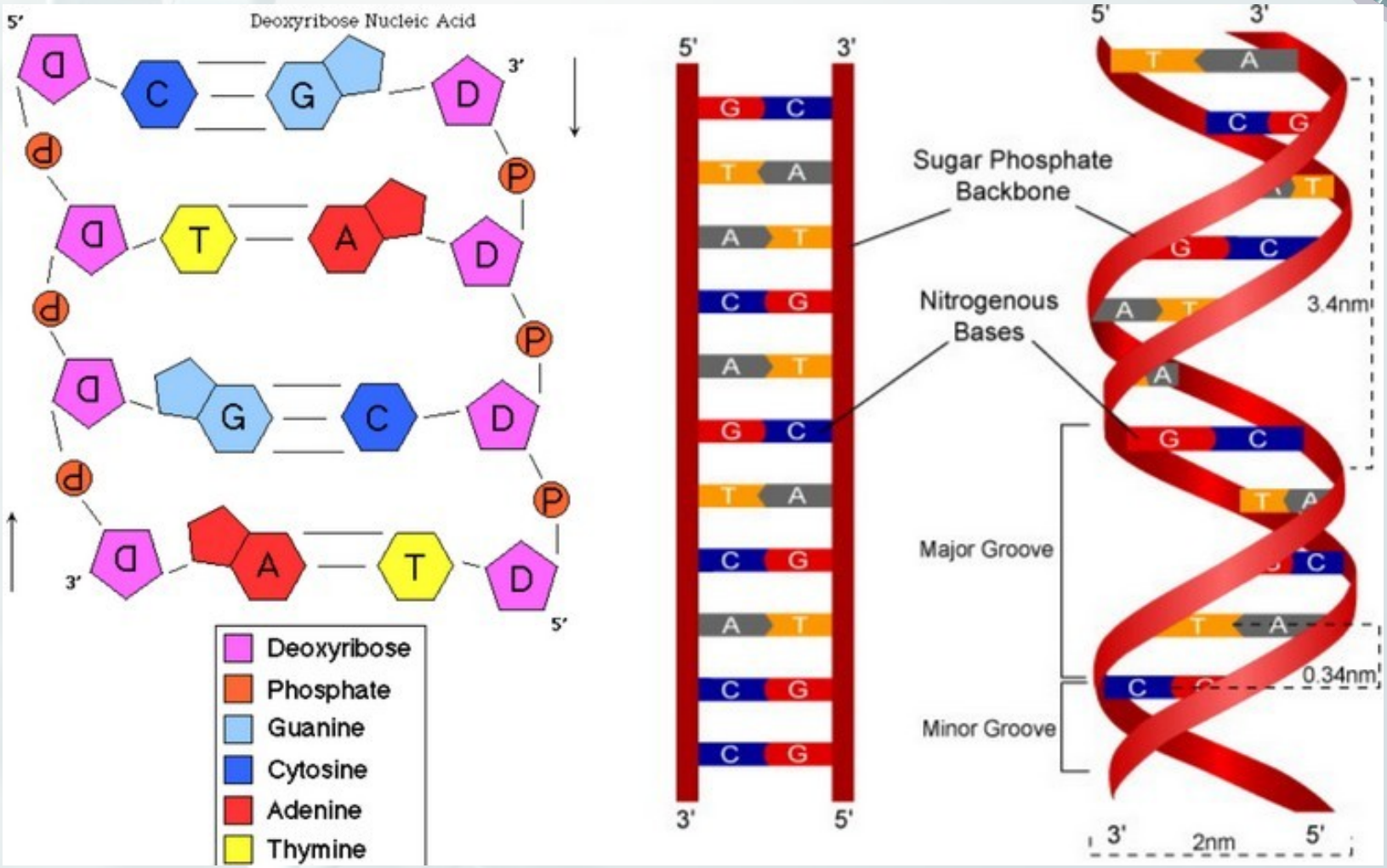

Figure: DNA structure [3].

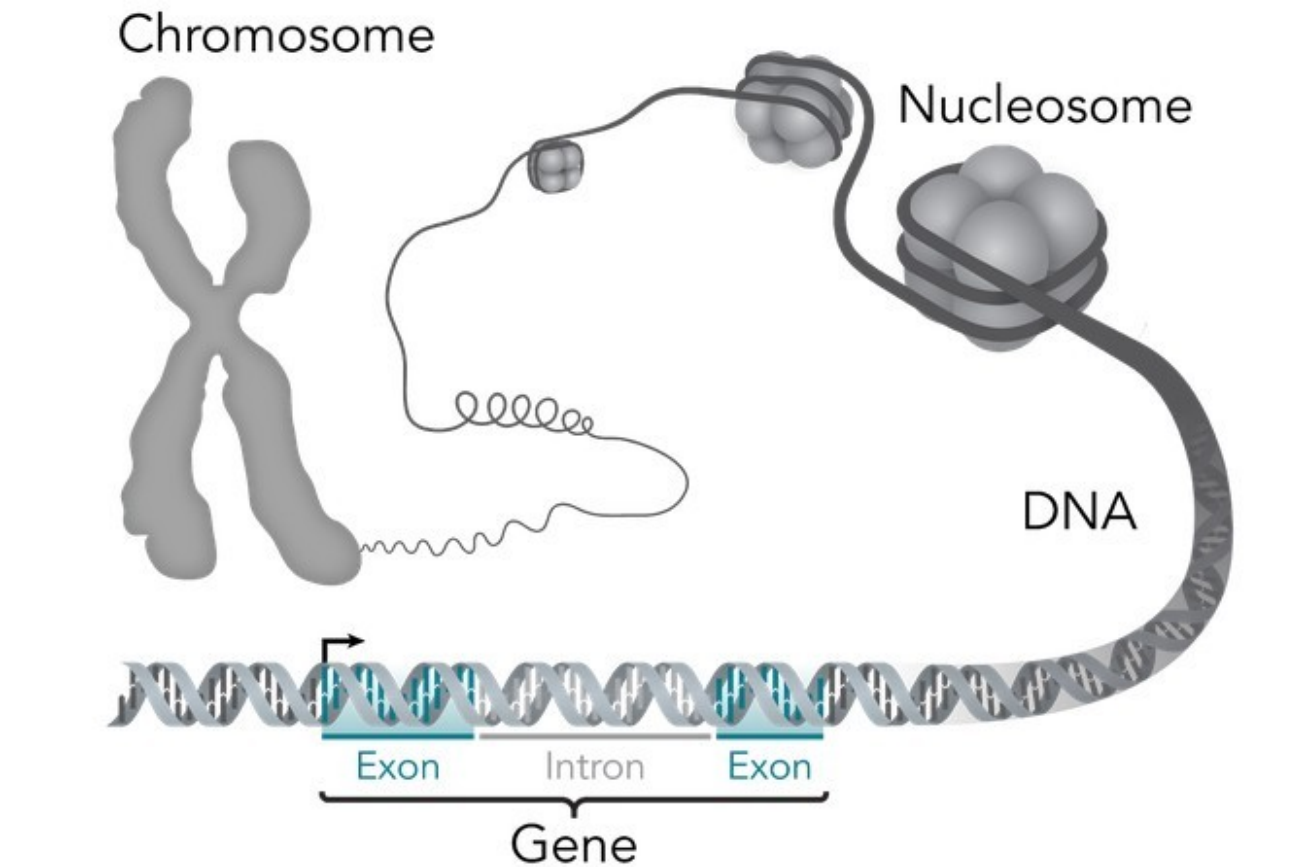

Figure: Chromosome-DNA-gene [4].

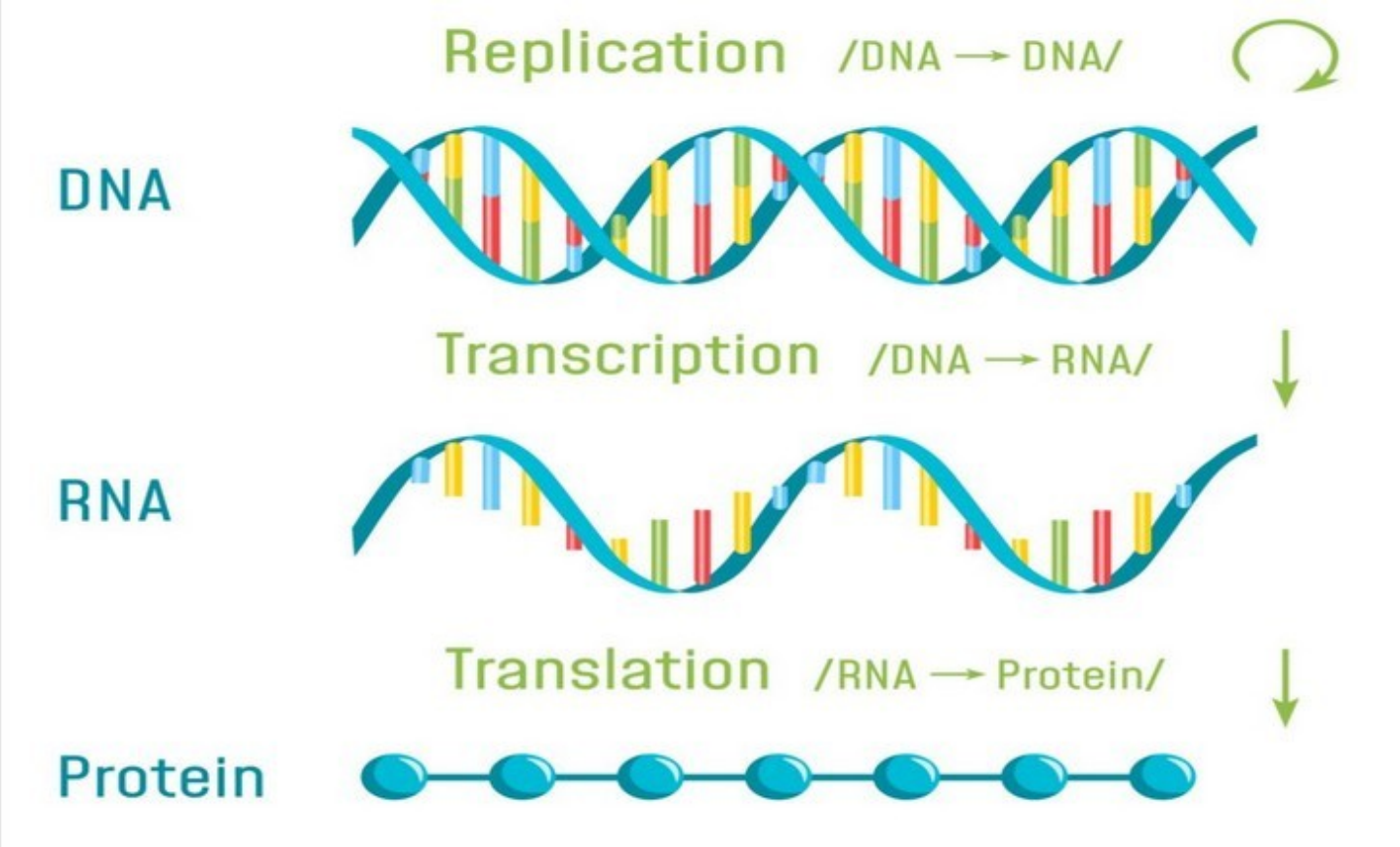

Figure: Transcription and Translation [4].

Click here to see the video

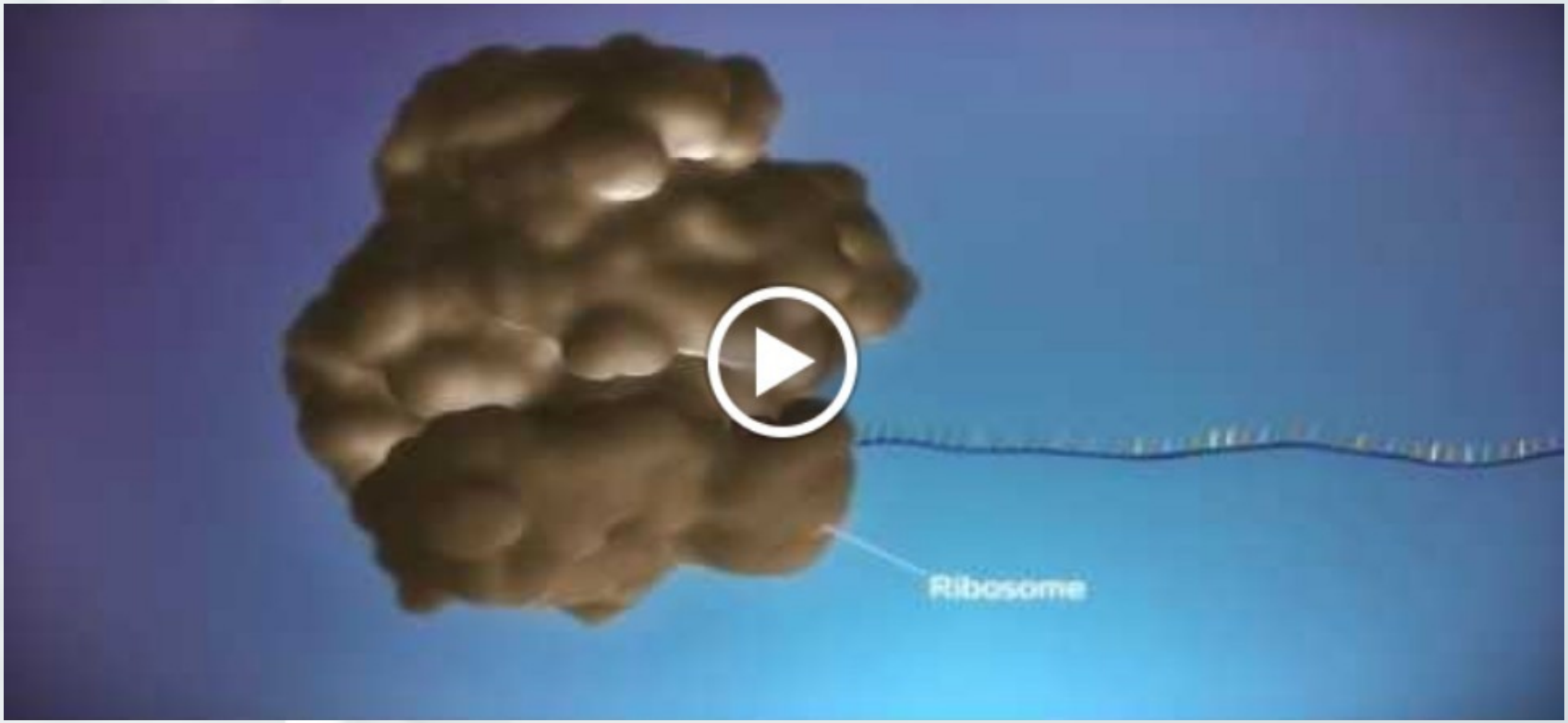

Figure: Video from DNA to protein.

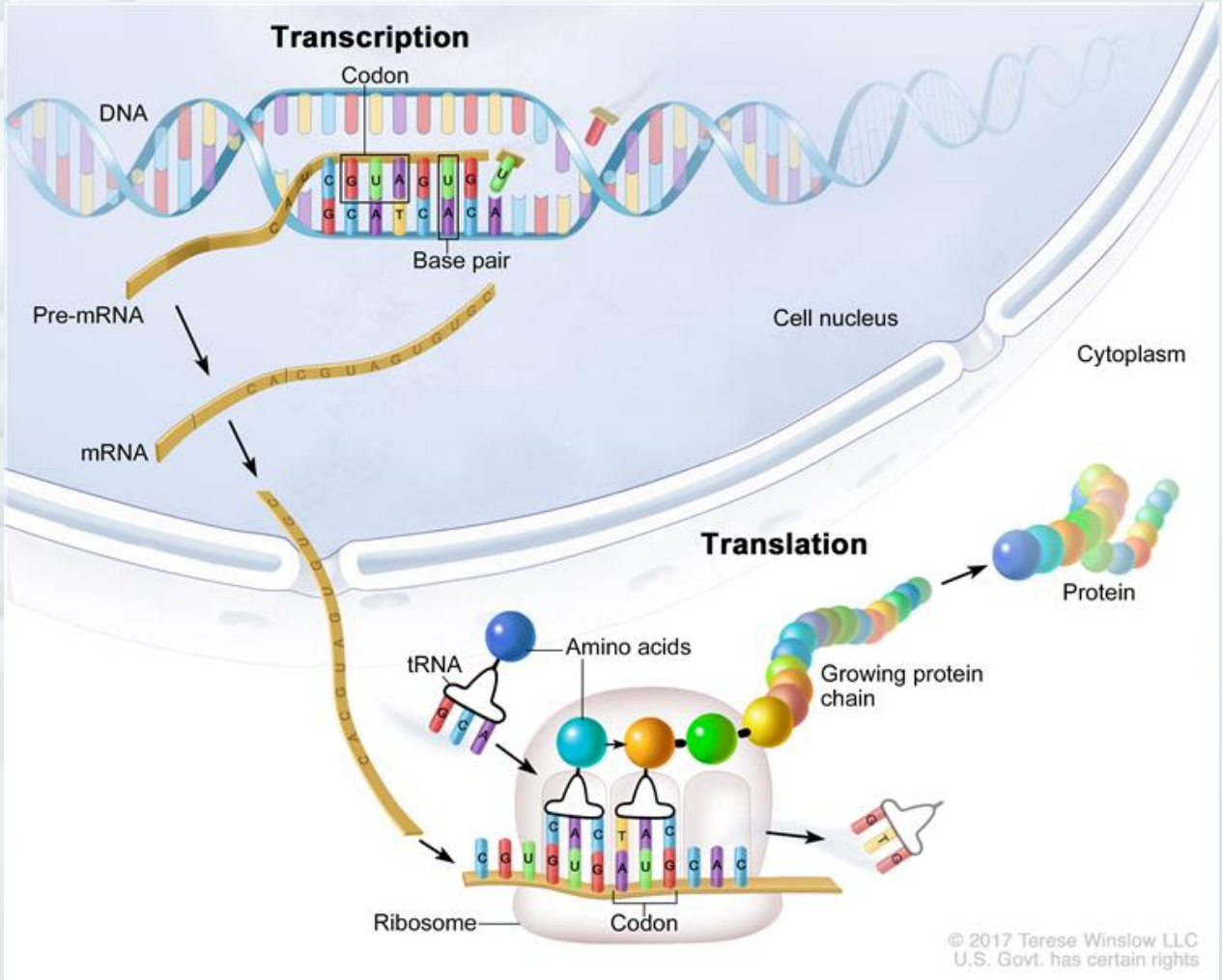

Figure: Transcription and translation [5].

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- Introduction to Bioinformatics (6 hours)

References I

[1] J. M. Archibald, *Genomics: A Very Short Introduction*. Oxford University Press, 2018, vol. 559.

[2] M. Clinics, "How genetic disorders are inherited," https://www.mayoclinic.org/tests-procedures/genetic-testing/multimedia/genetic-disorders/sls-20076216?s=2, 2020, accessed: 2020-03-20.

[3] NAU, "Dna structure," http://www2.nau.edu/lrm22/lessons/dna_notes/dna_notes.html, 2020, accessed: 2020-03-20.

[4] Wikicommons, "Chromosome-dna-gene," https://commons.wikimedia.org/wiki/File:Chromosome-DNA-gene.png, 2020, accessed: 2020-03-20.

[5] NCI, "Nci dictionary of cancer terms," https://www.cancer.gov/publications/dictionaries/cancer-terms/def/transcription, 2020, accessed: 2020-03-20.

Thank you