D.PHARM • FIRST YEAR

Human Anatomy & Physiology

CHAPTER 2

Structure of Cell

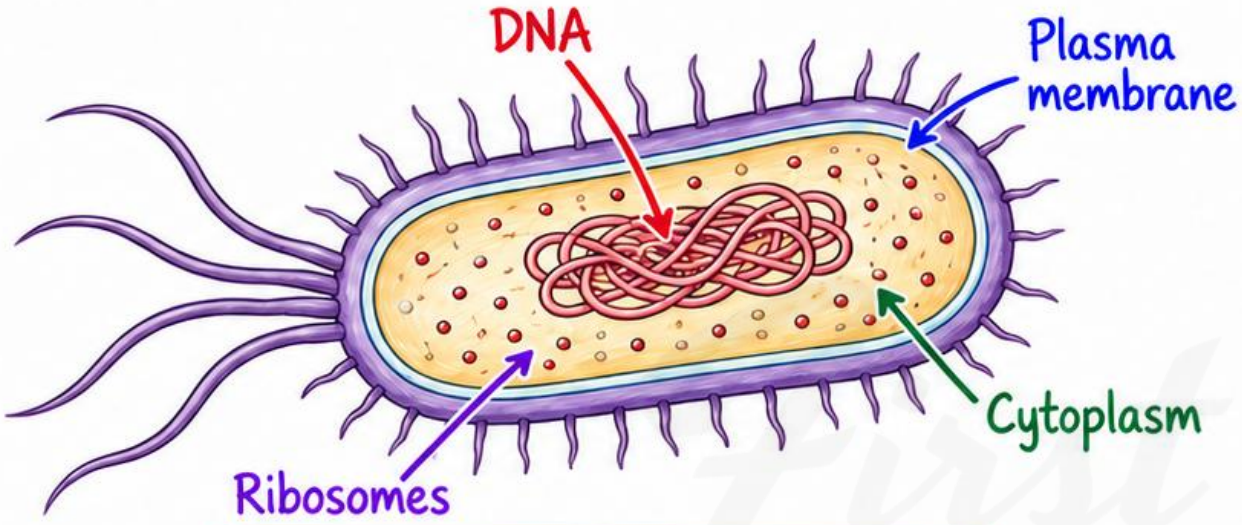


ENGLISH CHAPTER NOTES

DIPLOMA IN PHARMACY

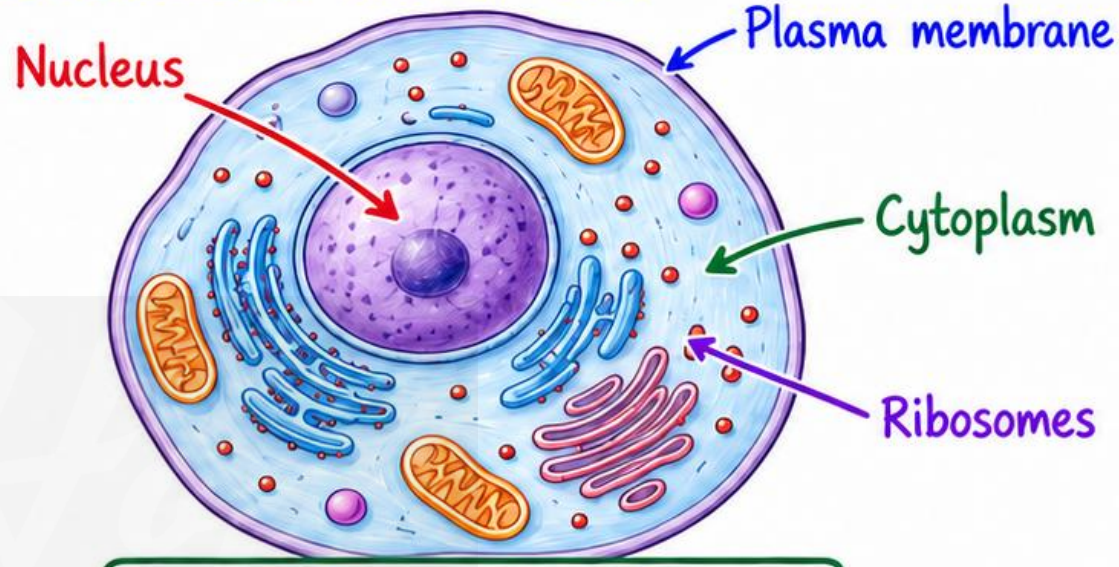
CELLS AND CELL TYPES

CELL = the basic structural and functional unit of life.



PROKARYOTIC CELLS

Found in bacteria and archaea. Usually smaller and simpler, with no membrane-bound nucleus.



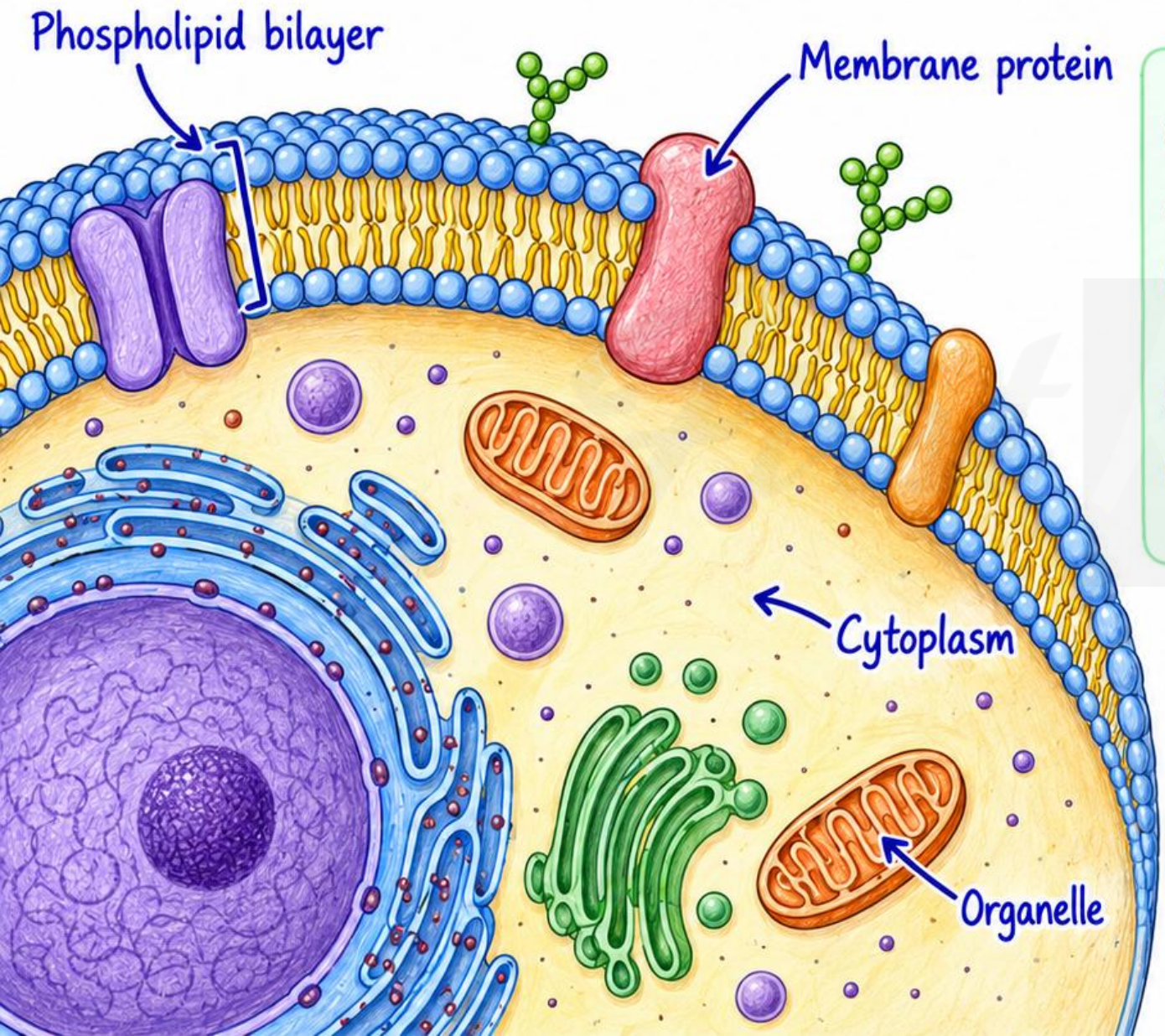
EUKARYOTIC CELLS

Found in animals, plants, fungi and protists. Have a nucleus and membrane-bound organelles.

SHARED FEATURES

1. Both contain a plasma membrane, cytoplasm and ribosomes.
2. Human body cells are eukaryotic.

PLASMA MEMBRANE AND CYTOPLASM



PLASMA MEMBRANE

1. Phospholipid bilayer with embedded proteins.
2. Acts as a selectively permeable boundary.
3. Controls entry of nutrients and ions and removal of wastes.
4. Helps maintain homeostasis.
5. Surface molecules support cell communication and recognition.

CYTOPLASM

1. Gel-like cell interior surrounding the organelles.
2. Provides a medium for many cellular reactions.
3. Supports organelles and movement of substances within the cell.

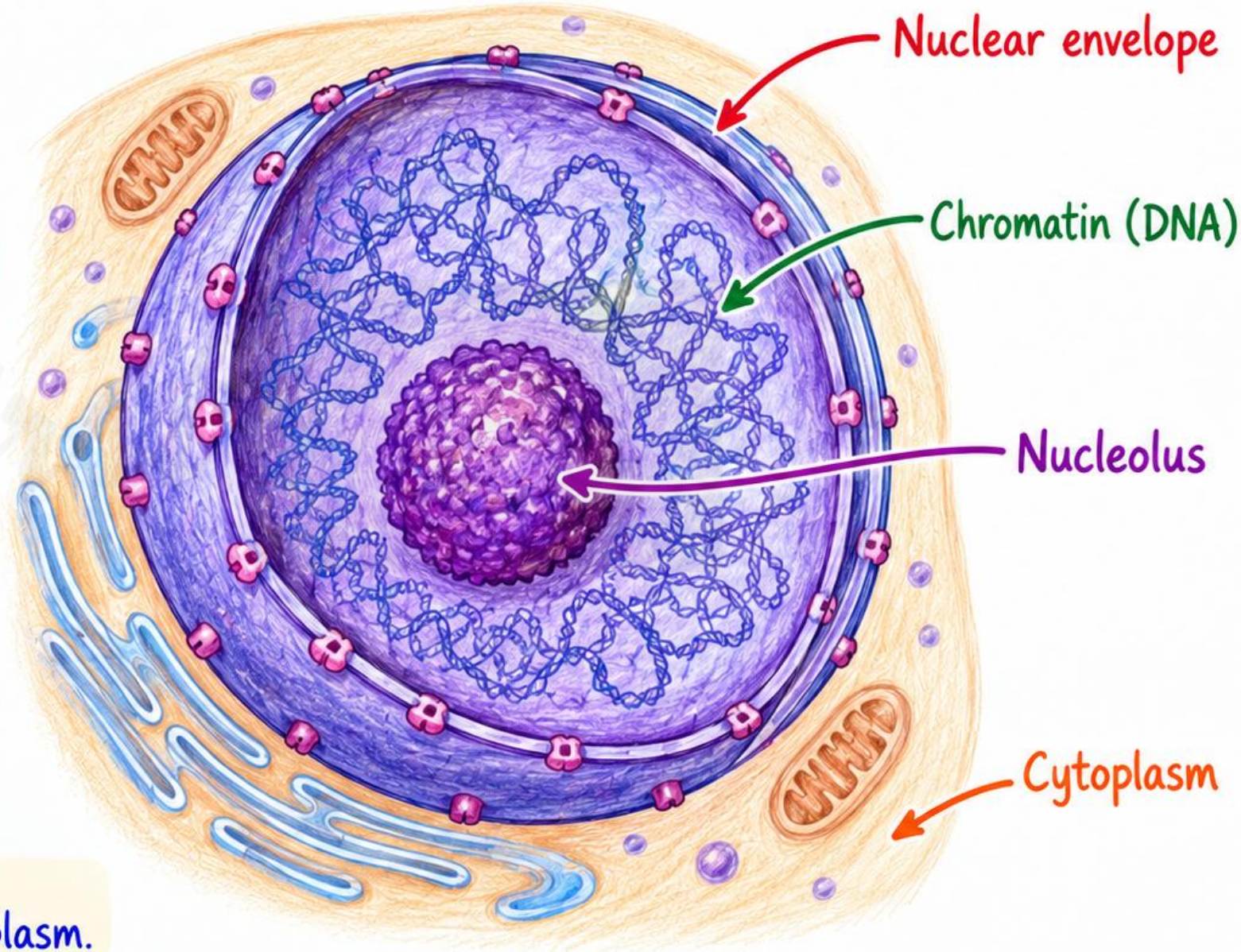
NUCLEUS AND NUCLEOLUS

NUCLEUS

1. A double nuclear envelope surrounds the nucleus.
2. Contains chromosomes made of DNA and associated proteins.
3. DNA stores the genetic instructions of the cell.
4. Regulates gene expression and directs protein synthesis.

NUCLEOLUS

1. A dense region inside the nucleus.
2. Produces ribosomal RNA and assembles ribosomal subunits.
3. These subunits later contribute to protein synthesis in the cytoplasm.



ENDOPLASMIC RETICULUM AND RIBOSOMES

ROUGH ER

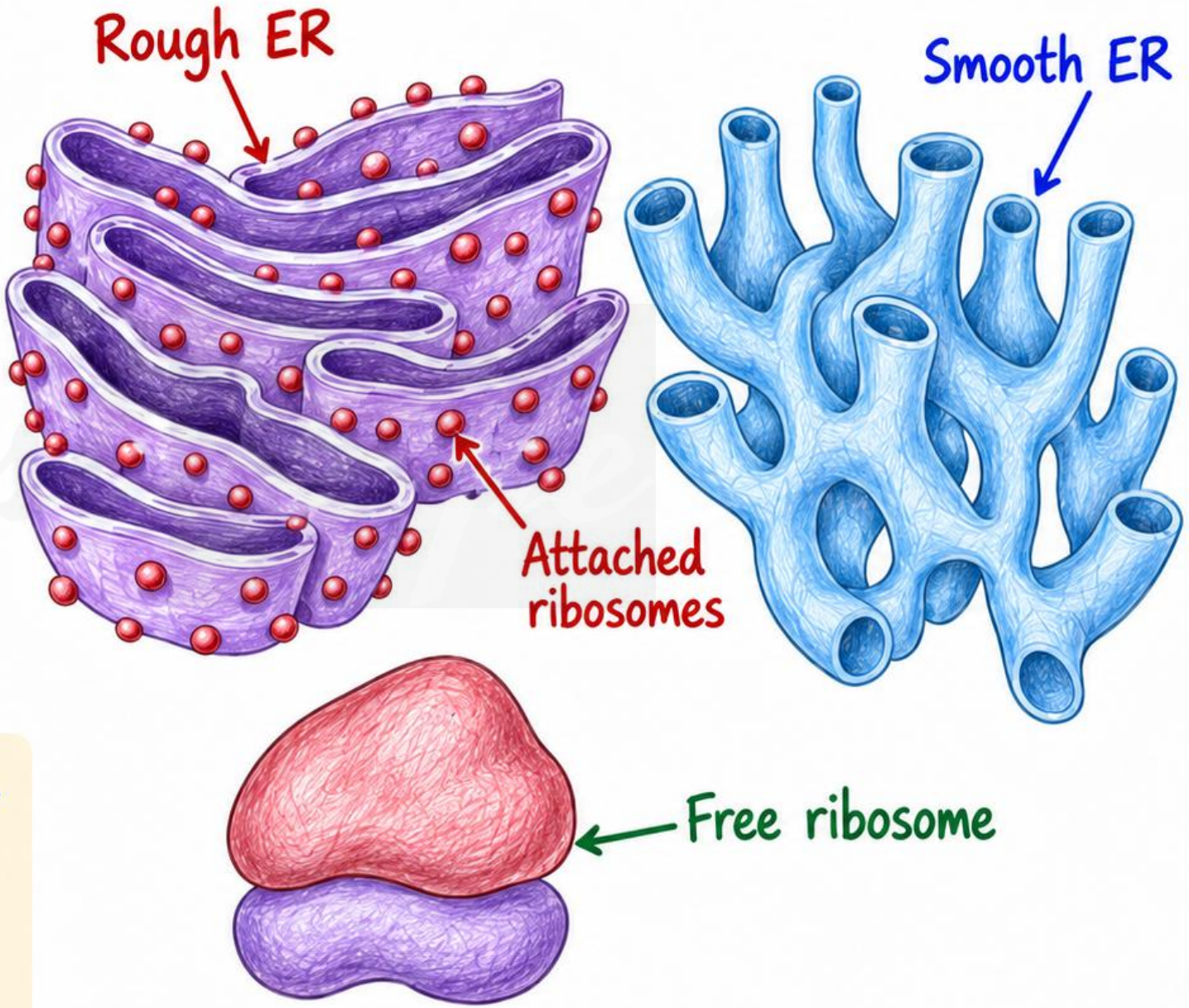
1. Membranous sacs with attached ribosomes.
2. Synthesizes proteins for secretion and membrane use.

SMOOTH ER

1. A network of tubules without attached ribosomes.
2. Participates in lipid synthesis and detoxification.

RIBOSOMES

1. Small structures made of RNA and protein.
2. May be free in cytoplasm or attached to rough ER.
3. Translate genetic information to build proteins.



First Hope

FREE PREVIEW

Click here to visit our website

PHARMACY PREMIUM NOTES

Complete subject and semesters are available on FirstHope app only.

Scan or click here

Click here to get the app >

Available on Google Play

JOIN THE FIRSTHOPE COMMUNITY

Join our Telegram channel

Click here to join Telegram >

Scan or click here

@FirstHopeNotes

Instagram

@firsthope.official

Click here to follow >

YouTube channel

FirstHope-Pharmacy / Live streams

Click here to watch >

WhatsApp channel

Follow FirstHope on WhatsApp

Click here to join >

FirstHope website

firsthope.co.in

Click here to visit >

B.Pharm / D.Pharm / M.Pharm / Pharm.D

Preview notes. Complete subjects and semesters in the FirstHope app.