

2.1 CELL AS A UNIT OF LIFE

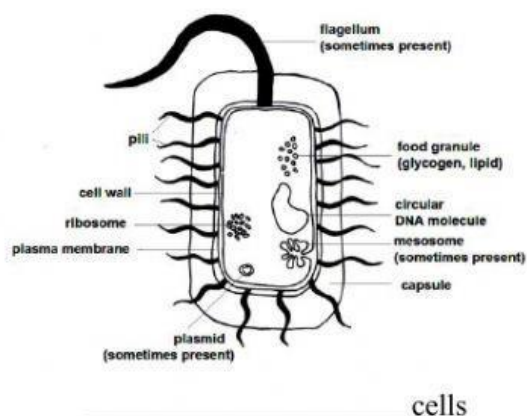
Learning outcomes

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

- I. **Explain the structure of Prokaryotic and eukaryotic cells.**
- II. **Describe how cells are grouped into tissues and organs.**

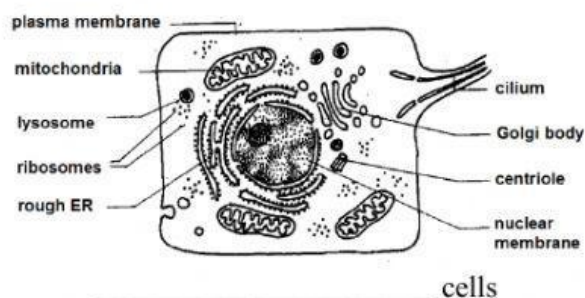
1. Structures of Prokaryotic & Eukaryotic Cells

Identify between prokaryotic and eukaryotic cells



Main features:

- Absence of nuclear membrane that surrounds the nucleus.
- Genetic material lies freely in cytoplasm



Main features:

- DNA is surrounded by well-defined nuclear membrane.
- Presence of membrane-enclosed organelles

2. Comparison between Prokaryotic & Eukaryotic Cells

Similarities

1. Both cells are bounded by _____
2. Both cells contain _____
3. Both cells have ribosomes

Differences

Number	Component	Prokaryotic cell	Eukaryotic cell
1	Cell size		Larger in size, diameter 10 - 100µm
2	Composition of Cell wall	Composed mainly of peptidoglycan	
3	Nucleus		Has true nucleus, nucleus is membrane bounded Genetic material is enclosed by nuclear membrane

Number	Component	Prokaryotic cell	Eukaryotic cell
4	DNA	Circular DNA DNA is not associated with histone protein	
5	Organelles		Presence of many membrane bounded organelles
6	Flagella	Simple flagella, lack of 9 +2 microtubules arrangement	
7	Cell division		Mitosis, meiosis or both
8	Ribosomes	Smaller ribosome, subunit 70S	