

## CELL

The smallest structural and functional unit of an organism, which is typically microscopic and consists of cytoplasm and a nucleus enclosed in a membrane.

### CELL THEORY

All known living things are made up of one or more cells. All living cells arise from pre-existing cells by division. The cell is the fundamental unit of structure and function in all living organisms.

### PROKARYOTES

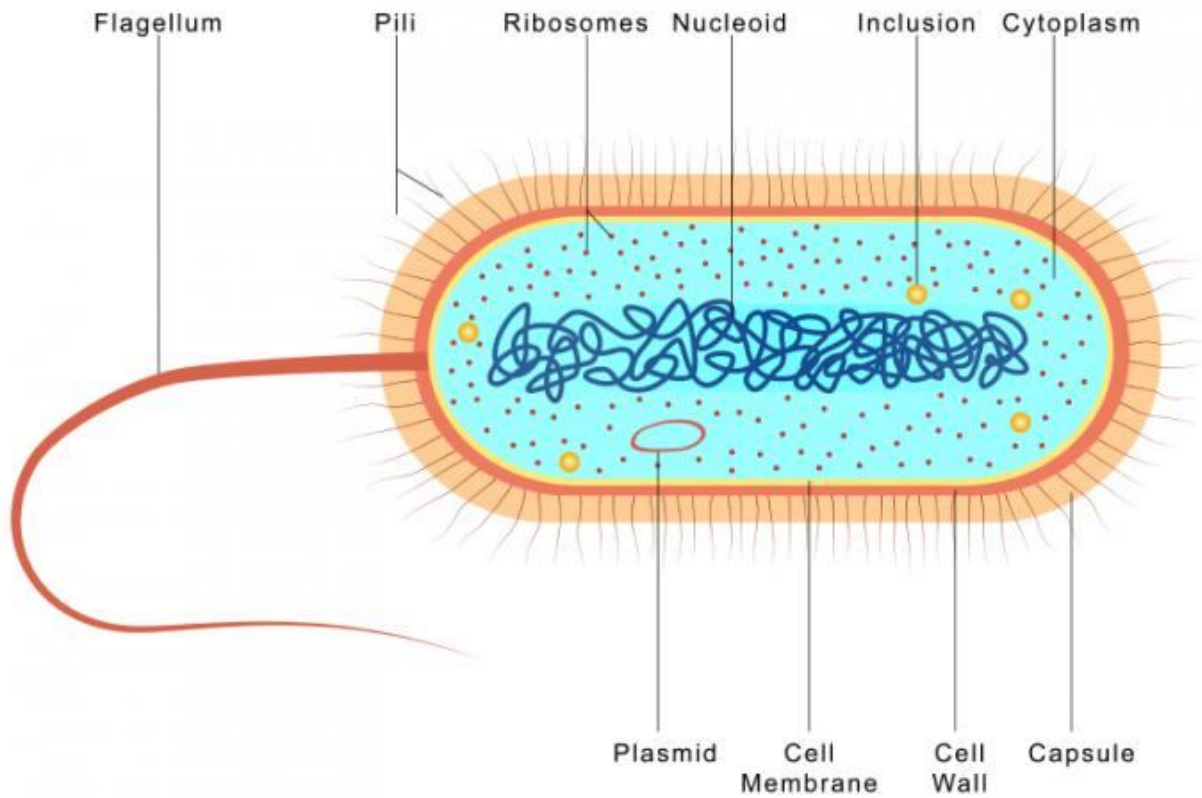
A prokaryote is a unicellular organism that lacks a membrane-bound nucleus (karyon), mitochondria, or any other membrane-bound organelle. The word prokaryote comes from the Greek πρό (pro) "before" and κάρυον (karyon) "nut or kernel". Prokaryotes can be divided into two domains, archaea and bacteria.

#### **What are some organisms that have prokaryotic cells?**

Prokaryotes. There are two basic types of organisms based on cell type: Prokaryotic and Eukaryotic. Prokaryotic cells are divided into the domains Bacteria and Archaea. Eukaryotic cells make up the more familiar Domain Eukarya.

What is an example of a prokaryotic cell?

Most of the prokaryotes are bacteria, such as the Cyanobacteria. Prokaryotes are single-celled and lack a nucleus, but instead they have a nucleoid that contains their DNA. They are the most primitive life form on Earth. Eukaryotes are the organisms that are made up of eukaryotic cells.



Prokaryotic cell structure

<p>Flagellum (only in some types of prokaryotes)</p> <p>Long, whip-like protrusion that aids cellular locomotion.</p>
<p>Cell membrane</p> <p>Surrounds the cell's cytoplasm and regulates the flow of substances in and out of the cell.</p>
<p>Cell wall (except genera Mycoplasma and Thermoplasma)</p> <p>Outer covering of most cells that protects the bacterial cell and gives it shape.</p>
<p>Cytoplasm</p>

A gel-like substance composed mainly of water that also contains enzymes, salts, cell components, and various organic molecules.

Ribosome

Cell structures responsible for protein production.

Nucleoid

Area of the cytoplasm that contains the prokaryote's single DNA molecule.

Glycocalyx (only in some types of prokaryotes)

A glycoprotein-polysaccharide covering that surrounds the cell membranes.