Topic: Cell Organelles
B.Sc. Botany Hons. III
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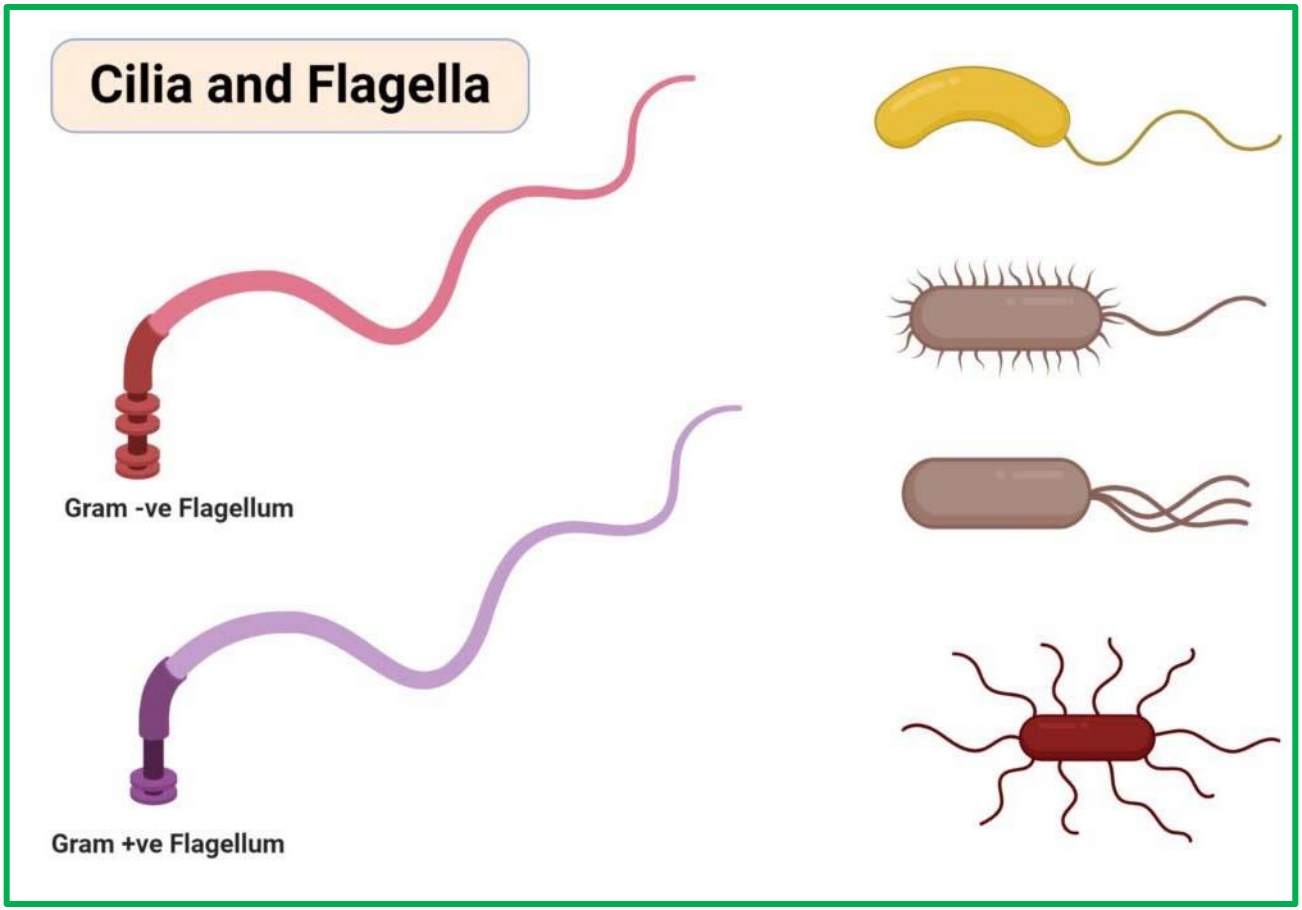
Cilia and Flagella

Cilia and Flagella are tiny hair-like projections from the cell made of microtubules and covered by the plasma membrane.

Structure

- Cilia are hair-like projections that have a 9+2 arrangement of microtubules with a radial pattern of 9 outer microtubule doublet that surrounds two singlet microtubules. This arrangement is attached to the bottom with a basal body.
- Flagella is a filamentous organelle, the structure of which, is different in prokaryotes and eukaryotes.
- In prokaryotes, it is made up of the protein called flagellin wrapped around in a helical manner creating a hollow structure at the center throughout the length.


Cilia and Flagella
Gram -ve Flagellum
Gram +ve Flagellum

- In eukaryotes, however, the protein is absent and the structure is replaced with microtubules.

Functions

- The most critical role of cilia and flagella is movement.
- These are responsible for the movement of the organisms as well as for the movement of various particles present around the organisms.
- Some cilia present in some particular organs may have the function of sense.
- The cilium in the blood vessels, which helps in controlling the flow of blood is an example.