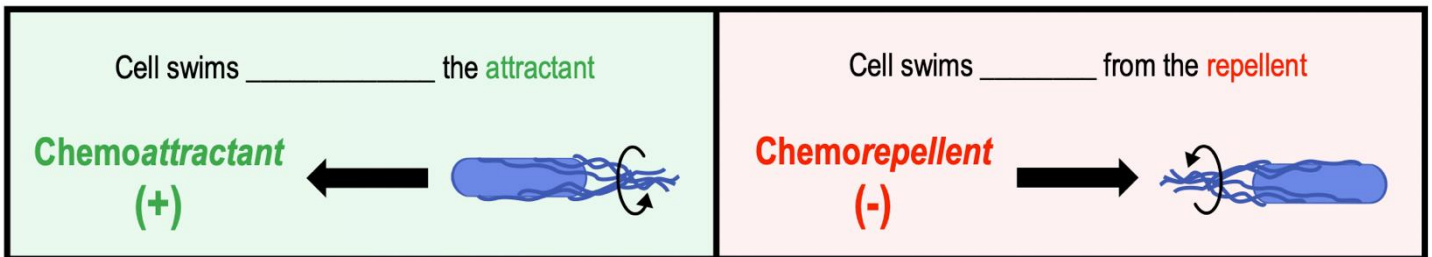


TOPIC: PROKARYOTIC MOTILITY

Chemotaxis

- **Recall:** Energy from a \_\_\_\_\_ is used to move a cell towards a more favorable environment using its flagella.
- **Chemotaxis:** the movement of a cell \_\_\_\_\_ *chemoattractants* & \_\_\_\_\_ from *chemorepellents*.
  - **Chemoattractant:** a chemical that \_\_\_\_\_ motile cells (*positive chemotaxis*).
  - **Chemorepellent:** a chemical that \_\_\_\_\_ motile cells (*negative chemotaxis*).
- \_\_\_\_\_ **taxis:** the cell movement towards (*positive*) or away from (*negative*) light.

**EXAMPLE:** Chemotaxis of motile cells towards or away from certain chemicals.



- The path that motile cells take towards or away from something is \_\_\_\_\_ a continuous straight line.

**PRACTICE:** Structures external to the bacterial cell wall that is used for motility (movement) by chemotaxis:

- Endospores.
- Capsules.
- Flagella.
- Pili.
- Ribosomes.

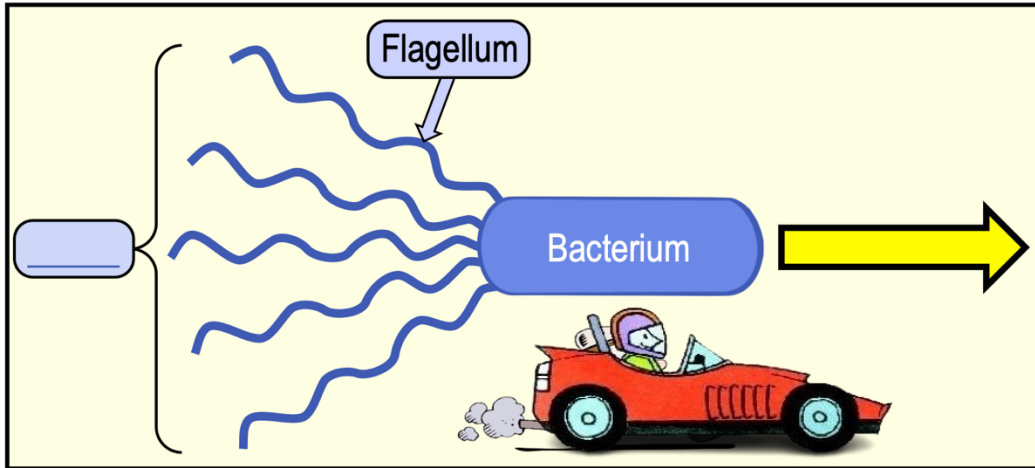
**PRACTICE:** A bacterial cell moving away from the light would be an example of...

- Positive phototaxis.
- Negative phototaxis.
- Positive chemotaxis.
- Negative chemotaxis..

**TOPIC: PROKARYOTIC MOTILITY**

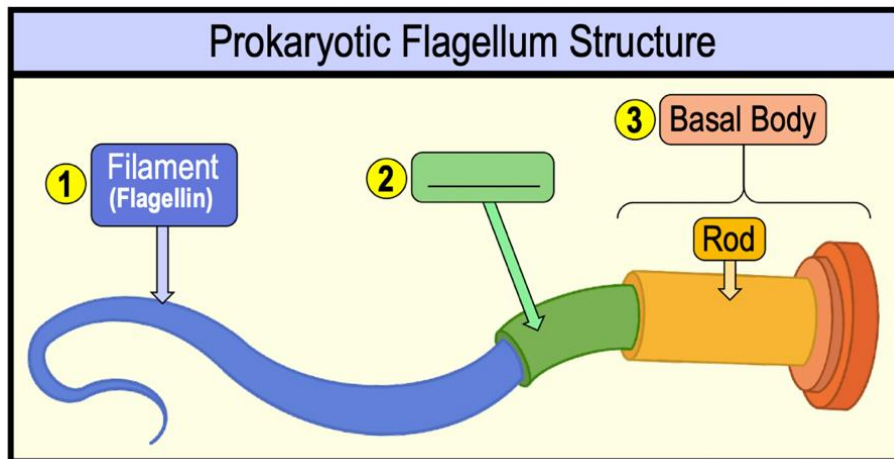
**Introduction to Prokaryotic Flagella**

- \_\_\_\_\_ (singular **Flagellum**): long filamentous surface proteins that drive *motility* of cells.
- **Tuft**: a \_\_\_\_\_ of many flagella on the surface of a cell.



**Prokaryotic Flagellar Structure**

- A flagellum consists of \_\_\_\_\_ parts:
  - 1) **Filament**: primary component of the flagellum made of the globular protein \_\_\_\_\_.
  - 2) **Hook**: a flexible curved protein that connects the \_\_\_\_\_ to the *basal body*.
  - 3) \_\_\_\_\_ **Body**: component *embedded* in membrane(s) of the cell envelope by a series of protein rings.



**PRACTICE:** Which of the following is NOT a component of bacterial flagella?

- a) Flagellin
- b) Basal body.
- c) Tubulin.
- d) Filament.
- e) Hook.