

## KEY WORDS AND PHRASES FOR EXTERNAL BACTERIAL STRUCTURES CONCEPT MAP

Acts as a rotary molecular motor, enabling the flagellum to rotate and propel the bacterium through the surrounding fluid; powered by proton motive force.

Appears as an extensive, tightly bound accumulation of gelatinous material adhering to the cell wall.

A motile response to an environmental stimulus. Bacteria can respond to chemicals (chemotaxis), light (phototaxis), osmotic pressure (osmotaxis), oxygen (aerotaxis), and temperature (thermotaxis).

A rigid, helical structure that extends from the bacterial surface and composed of the protein flagellin.

Appears as an unorganized, more loosely attached accumulation of gelatinous material.

Bacteria colonize tissue and resist being flushed from the body.

Bacterial flagellin functions as a pathogen-associated molecular pattern or PAMP that binds to pattern-recognition receptors or PRRs on a variety of defense cells of the body and triggers innate immune defenses.

Counterclockwise rotation leads to long, straight or curved runs without a change in direction.

Enables certain bacteria to resist phagocytic engulfment by white blood cells in the body or protozoans in soil and water.

Glycocalyx (Capsules and Slime Layers)

Layers of bacterial populations adhering to host cells and embedded in a common capsular mass.

long conjugation pili ("F" or sex pili)

monotrichous: A single flagellum, usually at one pole.

Motility serves to keep bacteria in an optimum environment via taxis.

Organelles of locomotion for most bacteria capable of motility.

peritrichous: Flagella over the entire surface.

pili (fimbriae)

The pilus has a shaft composed of a protein called pilin. At the end of the shaft is the adhesive tip structure having a shape corresponding to that of specific glycoprotein or glycolipid receptors on a host cell.

The process where pathogen-associated molecular patterns or PAMPs - common molecules such as peptidoglycan, teichoic acids, lipopolysaccharide, and mannans, common in microbial cell walls but not found on human cells - bind to endocytic pattern-recognition receptors on the surface of the phagocytes.

Usually quite numerous; organelles of adhesion allowing bacteria to colonize environmental surfaces or cells and resist flushing.

