

Corynebacterium diphtheriae - Key Terms:

Gram-positive – bacteria that stain purple after a Gram staining procedure, meaning they retain crystal violet dye inside of a thick peptidoglycan cell wall collapsed during the staining protocol

Morphology – shape of a cell or grouping of cells

Bacillus – rod-shaped bacterium

Pathogenesis – sequence of biological events/mechanisms by which a disease originates and develops in a host

Virulence – capacity to infect, evade a host immune system, and cause disease/damage in a host (severity of disease-causing ability)

Virulence factors – traits present in pathogens that contribute to virulence

Pseudomembrane – a false membrane on the surface of tissue during severe inflammation, due to the buildup of fibrin, dead cells, and inflammatory exudate/pus

Fibrin – a fibrous protein that acts as the structural foundation of a blood clot

Leukocytes – white blood cells, including granulocytes (neutrophils, basophils, eosinophils), lymphocytes (T, B, NK cells), and monocytes

Lysogenic phage – viruses that infect bacteria and integrate their genetic material into the chromosome of the host bacterium

Exotoxin – a protein secreted by a pathogen which causes damage/disease in a host

AB toxin – a categorization of exotoxins, indicating a “B” subunit which Binds to host cell receptors, and an “A” subunit which is Active on its target (the catalytic or enzymatic component that causes damage to the host cell).

Toxoid – inactivated toxin (often by formalin treatment) which is capable of triggering an antibody response, but not causing toxic effects to the host cells (usually by failing to bind host receptors)

Antibodies – part of the adaptive immune system; Y-shaped protein complexes made by B cells and plasma cells that recognize specific antigens; bind, neutralize, and opsonize their target; and can interact with other immune cells and the complement cascade

DTaP vaccine – the diphtheria toxoid, tetanus toxoid, and acellular pertussis (toxoid + subunit) vaccine, usually started in young children

Tdap vaccine – essentially the same as the DTaP vaccine, with lower dosage of diphtheria and pertussis antigens, usually used in adult boosters