

Gram +ve bacteria

Cocci

Branching filament

- Actinomyces (Anaerobe, not acid fast)
- Nocardia (Aerobe, acid fast)

Rods

- ↳ Clostridium
- ↳ Corynebacterium
- ↳ Listeria
- ↳ Bacillus
- ↳ Mycobacterium

Staphylococcus catalase(+)

- * inhibit in skin & mucous membrane
- * spherical cells → irregular cluster
- * many virulence factors

Catalase (+) S. aureus

- Food poisoning
- localized + systemic + spreading + Necrotizing infection
- ↓
- abscess
- ↓
- osteomyelitis

Coagulase (-)

- S. saprophyticus
- live on skin, ~~muscle~~ ~~endocarditis~~, ~~endocarditis~~
- ~~urethritis~~, UTI, intestn. vagina.
- S. epidermidis
- live on skin, mucous membrane, endocarditis
- bacteremia, UTI

Streptococcus catalase (-)

- * sensitive to drying, heat & disinfectant

Hemolysis of RBCs

→ α (none) enterococcus

→ β (complete) → S. agalactiae

- S. pyogenes → GAS, most serious pathogen.
- inhibit throat, nasopharynx, skin
- Diseases: paratubercular glitis
- skin + systemic + Mediating infection

→ viridans streptococci

- S. pneumoniae
- inflammatory of the lung.
- inhibit in nasopharynx of healthy people
- infect brain meningitis
- infect blood stream septicemia

→ α (partial)

Gram +ve bacteria

RODS

Bacillus

① Bacillus cereus

- Grow in food
- survive cooking, reheating
- causes nausea, vomiting abdominal cramps, diarrhea
- No treatment
- reported in immunosuppressed

② Bacillus anthracis

- long, black shaped rods.
- center spores
- virulence factors polypeptide
- exotoxins
- 3 types
 - ↳ Cutaneous → through skin
 - ↳ pulmonary → inhalation lung
 - ↳ Gastrointestinal → ingested

Listeria

- Found in soil, raw, uncheese meat
- hot dogs & cheese
- Resistant to long storage, refrigeration, heat, salt
- PH extreme, bilics

~~Sarc~~ Corynebacterium

- Diphtheria
- Virulence factor diphtheria toxin
- vaccine DPT
- pseudomembrane
- Asphyxiation ← cause
- via respiratory droplets
- ↳ from carriers
- ↳ actively infected individuals

Mycobacterium

- irregular bacilli
- Acid-fast staining
- Grow slowly
- virulence factor complex waxes that prevents destruction by lysosomes & macrophage

Clostridium

Difficile

- normal flora colon ↓ number
- antibiotic 5 colitis
- Enterotoxin's Xintistine
- major cause of diarrhea in hospital
- treatment: stop antibiotics, fluid electrolyte replacement

perfringens

- soft tissue: wound infection
- virulence factor lytic enzyme
- treatment: Antibiotic, amputation

Tetanus

- common in soil, GI tract of animal
- cause tetanus or lockjaw
- neuromuscular disease
- IV drug abusers
- neonate in developing countries

Botulinum

- inadequate food preservation
- toxin carried to neuromuscular junction
- ↳ block the release of Ach
- flaccid paralysis clinically
- ↳ Double vision
- ↳ Difficulty swallowing
- ↳ Neuromuscular symptom