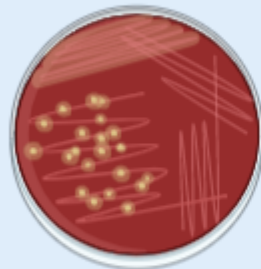


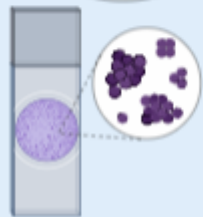
Staphylococcus aureus

Identification



Colonial Morphology:

- Small/Medium
- Yellow
- BH
- Facultative anaerobe

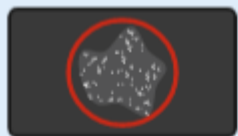


Gram:

- Gram positive
- Cocci in clusters



Catalase: Positive



Staphaurex: Positive



Tube Coagulase: Positive

AST Testing



Vitek AST Testing:

- Penicillin
- Oxacillin
- Erythromycin
- Clindamycin
- SXT
- Vancomycin*



Oxacillin Screen:

- S = MSSA
- R = MRSA



PBP2a Test Strip:

- T line = invalid
- C line = MSSA
- C + T line = MRSA



Vancomycin Screen:

- S = MRSA
- R = VISA/VRSA

Natural Habitat

Human Carriers

(Otto, 2011)



30% General Public Colonized

Environment



Dairy Products
(Other Foodstuff)



Soil



Contaminated
Water & Air

Livestock

(Haag et al., 2019)



Pigs: 14-35% carriers



Sheep: 29% carriers



Pigs: 42% carriers



Chicken: 90% carriers

Infection



Pathologies caused by *Staphylococcus aureus* infections:

- Food poisoning
- Abscesses
- Furuncles
- Carbuncles
- Folliculitis
- Cellulitis
- Impetigo
- Pneumonia
- Bacteremia
- Osteomyelitis
- Bacterial endocarditis
- Septic arthritis
- Toxic Epidermal Necrolysis (TEN)
- Scalded Skin Syndrome (SSS)
- Toxic Shock Syndrome (TSS)

Community-acquired or nosocomial opportunistic infection through ingestion, inhalation, or skin lesions.

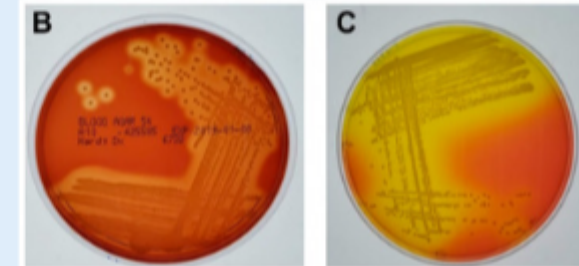
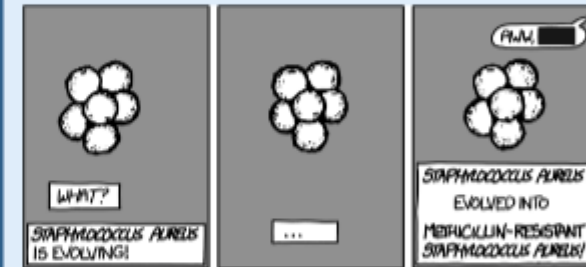
Scalded Skin Syndrome (Ritter Disease):

- Caused by exfoliative toxin produced by *Staphylococcus aureus*
- Causes blistering and peeling of epidermis
- Occurs primarily in newborns and young children
- High mortality rate in adults

Toxic Shock Syndrome:

- Caused by enterotoxin produced by *Staphylococcus aureus*
- Non-menstruating and menstruating associated
- Fatal and rapid progression if not treated quickly

Staphylococcus = Stackylococcus = Clusters
Streptococcus = Striptococcus = Pairs & Chains



Staphylococcus aureus grown on 5% sheep blood agar incubated 24 hours at 37°C. (Astley et al., 2019)

Staphylococcus aureus grown on mannitol salt agar incubated 24 hours at 37°C. (Astley et al., 2019)



Methicillin-resistant *Staphylococcus aureus* (MRSA) on chromogenic agar (MRSA Select) courtesy of Toronto-based MLT (@tinymicrobes)