Organisms	Infections
S. aureus	• cutaneous infections (folliculitis, furuncles, carbuncles & bullous impetigo) • food poisoning • Scalded skin syndrome (SSS) • Toxic shock syndrome (TSS) • Toxic epidermal necrolysis (TEN)
S. epidermidis	• nosocomial infections
S. saprophyticus	• UTI (in adolescent girls & young women)
S. haemolyticus	• wound • septicemia • UTIs • native valve infections
S. lugdunensis	• catheter-related bacteremia and endocarditis

Staphylococcus aureus

Virulence factors:

1. Enterotoxins

- **Groups A-E & G-J**
- Staphylococcal food poisoning A, B, D
- TSS B, C, G, I
- Staphylococcal pseudomembranous enterocolitis B
- Heat stable exotoxins (100° C for 30 mins)

- Interacting with TSST-1: interact with T cells

Staphylococcus aureus

Virulence factors:

4. Cytolytic toxin

- **δ-hemolysin:** less toxic than α-hemolysin or β-hemolysin
- **γ-hemolysin:** (PVL) Panton-Valentine leukocidin

- **Staphylococcal leucocidin**
  - (PVL) Panton-Valentine leukocidin
  - exotoxin lethal to PMN
  - suppresses phagocytosis
  - associated with severe cutaneous infections and necrotizing pneumonia
  - often associated with community-acquired staphylococcal infections

Workflow

Biochemical Tests

- **Oxidation-Fermentation (O/F) reactions**
  - Principle: determine whether an organism uses carbohydrate substrates to produce acid byproducts using OF glucose medium
  - Result: glucose, xylose, mannitol, lactose, sucrose, and maltose
    - (+) yellow medium; acid production — staphylococci
    - (-) no change in color; no acid production — micrococci

except *M. kristinae and M. varians*

S. saprophyticus
S. auricularis
S. hominis
S. xylosus
S. cohnii

Workflow

Biochemical Tests

- **Voges-Proskauer (VP) test**
  - Principle: determine the ability of some organisms to produce neutral end products from glucose fermentation — acetyl-methylcarbinol or acetoin
  - Result:
    - (+) Red color — *S. aureus*
    - (-) Yellow color — *S. intermedius, S. lugdunensis, S. haemolyticus* & *S. schleiferi*