

Streptococcus Pyogenes

- Causes Pyogenic infections
- Gram -ve, oval or spherical, 0.5-10 μm in dia.
- Arranged in chains or pairs
- Non motile, non sporing, aerobe & a facultative anaerobe.
- Responsible for non suppurative lesions, acute rheumatic fever & glomerulonephritis.
- * Growth occurs on enriched $\bar{c}$ blood or serum.
- * Optimum temp is 37°C, promoted by 10% CO_2 .
- * On blood agar, the colonies are small, circular, semitransparent, low convex discs $\bar{c}$ an area of clear hemolysis around them & virulent strains produce a 'matt' (finely granular) colony & avirulent " " a 'glossy' colony. Strains $\bar{c}$ capsules produce 'mucoid' colonies.
- * In liquid media, such as glucose or serum broth, growth occurs as a granular turbidity $\bar{c}$ a powdery deposit. No pellicle is formed.
- o Ferment several sugars producing acid but no gas.
- o Catalase -ve.

Toxins :-

1) Hemolysins < Streptolysin O - Erythrogenic toxin, antigenic. S - Stable, soluble in serum. Streptolysin S is responsible for the hemolysis around the colonies.

2) Pyogenic exotoxin/erythrogenic/Dick/Scarlatinal toxin :-

- Cause scarlet fever (a type of acute pharyngitis) in children.
- 1st effect of the toxin is induction of fever.

3) Streptokinase/fibrinolysin :-

- Promotes the lysis of human fibrin clots.
- Breaks down the fibrin barrier around the lesions & facilitating the spread of infect?

4) DNAase :-

- Cause depolymerisation of DNA.
- 4 types - A, B, C & D.
- Demonstration of anti-DNAase B antibody is useful in the retrospective diagnosis of Str pyogenes infection, particularly in skin infection.

■ Pathogenicity :-

Source - Upper respiratory tract patient/carrier.
Mode - Contact or through contaminated fingers, dust or fomites.
Causes diff. types of infect?