

Streptococcus pneumoniae can be differentiated from Streptococcus viridans based on sensitivity to lysis by bile. Streptococcus pneumoniae is bile soluble and will lyse in presence of bile, while Streptococcus viridans will not.

Alpha-Hemolytic

Alpha Afro

This bacteria is alpha-hemolytic, which causes dark green colonies on blood agar. It is caused by hydrogen peroxide produced by bacterium, which oxidizes hemoglobin to green methemoglobin.

Polysaccharide Capsule

Polly-sack Capsule

This organism has a capsule, which has anti-phagocytic properties.

Positive Quellung Reaction

Positive Quail-lungs

A Quellung reaction is a biochemical reaction in which antibodies bind to a bacterial capsule, allowing species with a positive Quellung reaction to be visualized under a microscope. *Streptococcus pneumoniae* has a positive Quellung reaction.

IgA Protease

(IgA) Apple-goblin with Propeller-ace

An IgA protease is an enzyme that cleaves certain amino acid sequences of proteins, including immunoglobulin A. *Streptococcus pneumoniae* releases IgA proteases which destroy IgA, leading to increased pathogenicity. Other IgA protease producers include *Neisseria gonorrhoeae*, *Neisseria meningitidis*, and *Haemophilus influenzae* type B.