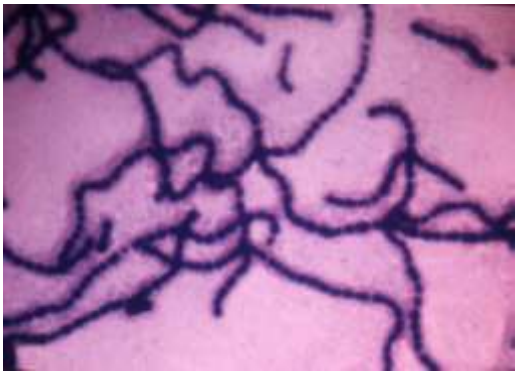
Streptococcus Genus Characteristics



Many members of the *Streptococcus* genus are normal flora to the mouth, nose, and throat. The genus *Streptococcus* is a complex group causing a wide range of diseases such as: rheumatic fever, impetigo, pharyngitis, laryngitis, toxic shock syndrome, scarlet fever, and endocarditis.

Streptococci are often classified based on hemolysis which can be seen by their reaction on blood agar. Alpha hemolytic species produce alpha-hemolysin which reduces hemoglobin (red) to methemoglobin (green) causing a brownish or greenish zone around the colony. Beta hemolytic species produce a hemolysin that forms a clear zone around the colony, indicating complete lysis of red blood cells. Gamma hemolytic species are non-hemolytic, having no apparent effect on red blood cells.

- Gram positive cocci (0.5-2.0µm in diameter) - single, in pairs, or chains
- Non motile
- Non spore-forming
- Facultative anaerobes
- Chemo-organotrophic (fermentative metabolism producing mainly lactose, no gas)
- Require nutritionally rich media for growth, such as Brain Heart Infusion (BHI) Agar, & 5% CO_2
- Capsule variable - virulent strains encapsulated
- Nutritionally fastidious - growth enhanced by addition of blood
- Associated with mouth & upper respiratory tract

The table below indicates the results or our strains of bacteria and how they respond to classical media tests. Click on a link to an organism to learn more about that specific organism. Click on a link to a media test to learn more about that specific media test. Click on a link to a specific result to see a picture and a more elaborate description of the reaction.

	Streptococcus agalactiae	***Streptococcus bovis***	***Streptococcus faecalis***	***Streptococcus mutans***	***Streptococcus pyogenes***
Macromorphology	Medium	Pinpoint	Medium	Pinpoint	Small
FTM	Facultative Anaerobe	Facultative Anaerobe	Facultative Anaerobe	Facultative Anaerobe	Facultative Anaerobe
Motility	Non Motile	Non Motile	Non Motile	Non Motile	Non Motile
Catalase	Negative	Negative	Negative	Negative	Negative
Oxidase	Negative	Negative	Negative	Negative	Negative
Optochin	Resistant	Resistant	Variable	Resistant	Resistant
Bacitracin	Variable	Resistant	Resistant	Resistant	Susceptible
SXT	Resistant	Variable	Variable	Variable	Resistant
Hemolysis	Gamma Hemolysis	Alpha Hemolysis	Alpha Hemolysis	Gamma Hemolysis	Beta Hemolysis
Hippurate	Positive	Negative	Positive	Negative	Negative
Salt Tolerance	Variable	Negative	Positive	Negative	Negative
Bile Esculin	Negative	Variable	Positive	Positive	Negative

Table of Probable Results for Streptococcus Organisms