Difference Between Strep A and Strep B

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Key Difference - Strep A vs Strep B

Streptococcus is a genus of bacteria that includes gram-positive, non-motile, non-spore forming, negative catalase cocci. Most of the Streptococcus bacteria are facultative anaerobes while some are obligate anaerobes. This genus contains over 50 species that are parts of the salivary microbiome. Streptococci are responsible for several diseases. Among them, scarlet fever, rheumatic heart disease, glomerulonephritis, and pneumococcal pneumonia are attributed to human streptococcal diseases. Many species of Streptococci are not pathogenic. They are a part of the normal microbial flora that resides in skin, mouth, intestine and upper respiratory tract. When considering the nomenclature of Streptococci, it is basically for the medical use. Strep A and Strep B are two medically important two beta hemolytic species of Streptococci. Strep A or group A refers to Streptococcus pyogenes while Strep B or group B refers to Streptococcus agalactiae. This is the key difference between Strep A and Strep B.

What is Strep A?

Strep A is the Streptococcal species Streptococcus pyogenes. Strep A is caused by group A infections. S. pyogenes is a beta hemolytic bacterium which is gram-positive, nonmotile coccus. Strep A is commonly caused by throat and skin infections. It is responsible for both invasive and noninvasive diseases. Common diseases of Strep A are pharyngitis or strep throat, impetigo, rheumatic cellulitis fever, scarlet fever, necrotizing fasciitis and toxic shock syndrome. Pharyngitis and impetigo are noninvasive diseases. Toxic shock syndrome, pneumonia, and bacteremia are invasive diseases. These diseases are transmitted from person to person by respiratory droplets coming out during the coughs, sneezes or due to direct contact.
The cell wall of Strep A contains a polymer of N-acetylglucosamine and rhamnose. Pathogenesis of Strep A is caused due to several virulence factors such as M protein, hemolysins, toxins and extracellular enzymes. M protein serves an antiphagocytic mechanism while extracellular enzymes contribute to tissue invasion and destruction. Toxins of Strep A are caused by rash and organ failure. Human Streptococcal diseases are caused mainly due to Strep A.

What is Strep B?

Strep B or group B streptococci is referred to *Streptococcus agalactiae*. It is a beta hemolytic bacterium that is nonmotile and gram-positive. Strep B is a catalase negative facultative anaerobic bacterium that is round in shape. The cell wall of the *S. agalactiae* is composed of a rhamnose-glucosamine polymer. Pathogenicity of Strep A is associated with few virulence factors such as lipoteichoic acid that helps in adherence to human cells at the initial infection. Strep B is a common normal vaginal flora.
Invasive neonatal infections are occasionally caused by this species. Newborns and babies are affected by Strep B infections. If Strep B infection occurs during the pregnancy, it can lead to miscarriage and stillbirths. However, it is a rare occurrence. Strep B has several serotypes; Ia, Ib, III, II and V.

What are the Similarities Between Strep A and Strep B?

- Strep A and Strep B are two species of the bacterial genus Streptococcus.
- Both Strep A and Strep B are caused by beta hemolysis.
- Both are gram-positive
- Both are cocci in chains.
- The infections caused by Strep A and Strep B can be cured by antibiotic Penicillin and other antibiotics.
- Both are beta-hemolytic.

What is the Difference Between Strep A and Strep B?

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<th>Strep A vs Strep B</th>
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<td>Strep A refers to group A streptococcal species <em>pyogenes</em>.</td>
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Streptococcus is a genus of bacteria that are medically important. These bacteria are caused mainly by respiratory tract infections, bloodstream infections and skin infections in humans. Strep A and Strep B are two groups of streptococci. Strep A is *S. pyogenes*. Strep B refers to *S. agalactiae*. Strep throat, Rheumatic fever, Acute glomerulonephritis, Scarlet fever, bacteremia, toxic-shock syndrome and necrotizing fasciitis are caused by Strep A. Strep B is caused for sepsis (septicemia), pneumonia and sometimes neonatal meningitis in newborns. This is the difference between Strep A and Strep B.

Reference:

1. 'Streptococcus pyogenes' By Centers for Disease Control and Prevention's Public Health Image Library (PHIL) (Public Domain) via Commons Wikimedia
2. 'Staphylococcus aureus and Streptococcus agalactiae on blood agar' By HansN. - Own work, (CC BY-SA 3.0) via Commons Wikimedia

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