

Bacitracin can be used to distinguish *Streptococcus pyogenes* from other beta- hemolytic *Streptococci*, like *Strep agalactiae*. *Streptococcus pyogenes* is bacitracin- sensitive, while *Streptococcus agalactiae* is bacitracin-resistant.

## **Hyaluronic Acid Capsule**

### [Hay Capsule](#)

Many strains of *Streptococcus pyogenes* have a hyaluronic acid capsule, which aids this organism in resisting phagocytosis.

## **Streptolysin O**

### [Stripper with O Earrings](#)

Streptolysin O is an oxygen-labile exotoxin released by *Streptococcus pyogenes*. This is often tested for with an ASO, or antistreptolysin O titer.

## **DNase**

### [DNA Lace](#)

*Streptococcus pyogenes* species produce DNase, an enzyme which cleaves the DNA backbone, degrading DNA. This allows this organism to infect pharyngeal tissues and skin, while degrading DNA of neutrophil extracellular traps, which would normally kill these bacteria.

## **Streptokinase**

### [Stripper with Kite-ace](#)

Streptokinase is an enzyme which inhibits the coagulation cascade in humans. These bacteria produce this enzyme, causing blood clots to dissolve so the bacteria can easily spread throughout the body.

## **Exotoxin A**

### [Exploding Apples](#)

Exotoxin A produced by *S. pyogenes* aids in virulence by decreasing the production of antibodies and potentiating the likelihood for necrotizing fasciitis and streptococcal toxic shock syndrome. The expression is highly variable among different strains of this bacteria.

## **Pyrrolidonyl Arylamidase (PYR) Positive**

### [Positive Pyro](#)

The pyrrolidonyl arylamidase (PYR) test is a rapid test, which has largely replaced the bacitracin test. *Streptococcus pyogenes* is a positive control, and is well known to be positive for PYR, which can be tested for in 10-15 minutes.