

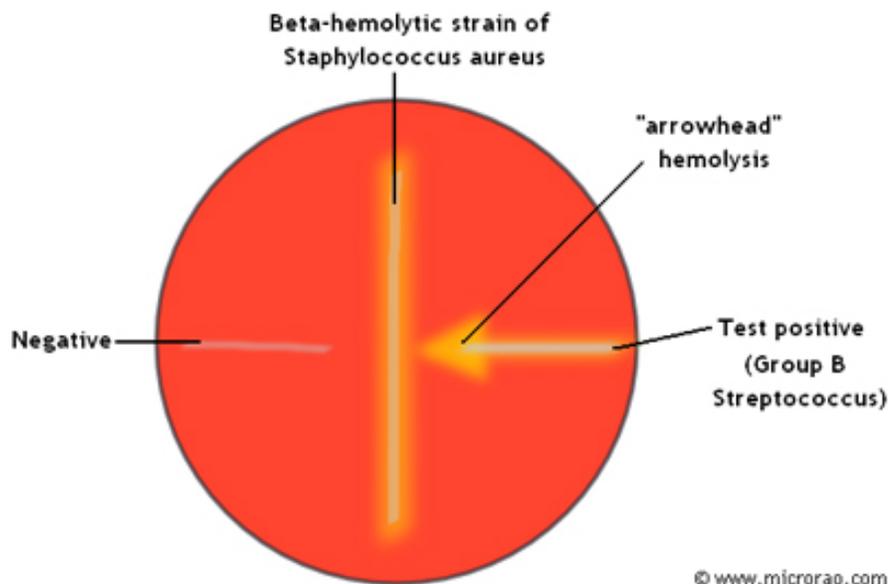
CAMP TEST

This test is used for the presumptive identification of Group B Streptococcus (*Streptococcus agalactiae*). It is the only beta-hemolytic Streptococcus which yields a positive CAMP test. The test has been named after Christie, Atkins, and Munch-Peterson, who described it in 1944.

This test detects a diffusible, heat-stable, extracellular protein produced by Group B Streptococcus that enhances the hemolysis of sheep erythrocytes by *Staphylococcus aureus*. The CAMP factor acts synergistically with the beta hemolysin produced by *S. aureus* to induce enhanced hemolysis of sheep or bovine RBCs but not human, rabbit or horse RBCs.

A known hemolytic strain of *S. aureus* (ATCC 25923) is streaked in a straight line across the centre of the sheep blood agar plate. Test inoculum is streaked in a straight line (2-3 cms in length) perpendicular to *S. aureus* streak but without touching it. A known Group B Streptococcus may also be streaked similarly as a positive control. Four-five test organisms may be tested per plate. The plate is incubated at 37°C for 18-24 hours.

A positive test for CAMP factor appears as “arrowhead” hemolysis between the junction of growth of *S. aureus* and Group B Streptococcus. There is no enhanced or “arrowhead” hemolysis if the test isolate is not Group B Streptococcus.



A similar test has been described for *Listeria ivanovii*, where an “arrowhead” hemolysis occurs appear between streaks of *Listeria ivanovii* and *Rhodococcus equi*.

Reverse CAMP test can be used for differentiation of *Clostridium perfringens* from other Clostridium species. Here, a CAMP positive Group B Streptococcus is streaked in the center of sheep blood agar, and *Clostridium perfringens* is streaked perpendicular to it. Following incubation at 37°C for

24-48 hours in anaerobic conditions, an “arrowhead” hemolysis is seen between growth of *C. perfringens* and Group B Streptococcus. This is because of alpha toxin produced by *C. perfringens* interacts with CAMP factor and produce synergistic hemolysis.