

74226 Coagulase Test (Tubes)

For the detection of coagulase-negative or -positive organisms (*Staphylococcus aureus*).

Product Description:

1 box contains 6 vials (each with 3 ml lyophilized rabbit plasma with EDTA)

Store below 8°C and use before expiry date. The rehydrated plasma is stable for 30 days at – 20°C.

Directions:

- a) Conduct the coagulase test on 5 typical and/or 5 atypical colonies on Baird-Paker Agar (Cat. No. 11705) or 5 suspect colonies from other culture media (Staphylococcus Agar, Cat. No. 70193, Blood Agar (Base), Cat. No. 70133, Vogel Johnson Agar, Cat. No. 70195).
- b) Transfer each of the selected colonies with a sterile inoculation loop to separate culture tubes containing Brain Heart Broth (Cat. No. 53286) and incubate at 37°C for 20-24 hours.
- c) Rehydrate the lyophilized rabbit plasma with EDTA in 3 ml of distilled water.
- d) Pipette 0.3 ml of the rabbit plasma into a sterile culture tube using a sterile pipette.
- e) Carefully mix 0.1 ml of the Brain Heart Broth culture or 1/2 an inoculation loop of colony material from Baird-Paker, Staphylococcus or Blood Agar with the plasma in the sterile culture tube and incubate at 37°C. (Material from Vogel Johnson or Mannitol Salt Phenol Red Agar is not suitable for the test. A Brain Heart Broth culture is favored.)
- f) Check the tubes every hour for coagulation by gently tipping to the side (do not shake).
- g) The coagulase test is positive if more than 75% of the tube contents has formed a coherent clot.
- h) If the test is negative after 4-6 hours, continue incubating the tube and make a final assessment after 24 hours.

As negative control a non-inoculated Brain Heart Broth is used. There must not be any formed clumps or the entire series of tests have to be repeated.

In one tube, a coagulase-positive staphylococci strain is used as a positive control.

Principle and Interpretation:

This test is to differentiate potentially pathogenic *Staphylococcus* species from other Gram positive, catalase-positive cocci by the detection of coagulase. It is thought that an infective organism that produces the coagulase enzyme may protect itself by inducing clotting in surrounding tissues, thereby inhibiting destruction by normal body defenses such as phagocytosis or antibodies. The coagulase formation by *Staphylococcus aureus* and its formation of enteric toxins are very closely related. Therefore, together with the DNase test, the Coagulase Test is an important indicator for the pathogenicity of *Staphylococcus* strains.

Staphylococcus aureus produce free and bound coagulase. Free coagulase is an extracellular enzyme which reacts with prothrombin and its derivatives. Bound coagulase is localized on the surface of the cell wall and reacts with α - and β -chains of the plasma fibrinogens to form a coagulate. With this test both forms of coagulase are measured.



Reference:

W.H. Sperber, S.R. Tatini, Interpretation on the tube coagulase test for the identification of *Staphylococcus aureus*. - Appl. Microbiol., 29, 502 (1975)

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

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