1 INTENDED USE

Rabbit Plasma recovered over EDTA and freeze-dried is used for the detection of staphylocoagulase. Coagulase is an enzyme that can coagulate blood plasma and was demonstrated for the first time by Loeb in 1903 in some staphylococci. Since that time, a number of authors have tried to link coagulase production in *Staphylococcus aureus* to its capacity to produce an enterotoxin and thus to its pathogenic power. Today, the presence of a coagulase is considered to be the main factor in the determination of the pathogenicity of staphylococci. Nevertheless, it is not rare to isolate coagulase negative strains with proven pathogenicity. *Staphylococcus aureus* produces two types of coagulase:

- free extracellular coagulase that reacts with plasma prothrombin;
- bound coagulase, localized in the bacterial wall, that reacts with plasma fibrinogen to produce a clot.

In tests done in tubes, free coagulase reacts primarily by forming a clot in plasma, indicating a positive reaction. In the case of coagulase-negative staphylococci, it is recommended to screen for the presence of other enzymes such as phosphatase or deoxyribonuclease, that are also indicators of pathogenicity. More information can be found by consulting the technical sheets for Baird Parker agar (BK055, BM018, BM091).

2 INSTRUCTIONS FOR USE

- Using aseptic techniques, fill the vial of lyophilisate with 6 mL of sterile distilled water.
- Turn end-over-end to dissolve. Avoid frothing the solution.
- Add successively into a serological tube:
  - 0.3 mL of reconstituted Coagulase Rabbit Plasma.
  - 0.1 mL of the 24 hour staphylococcal culture in Brain-heart broth (BK015).
- Mix well.
- Incubate at 37°C in a thermostated water bath.

3 RESULTS

The reaction is considered positive when the clot occupies 3/4 of the initial volume. Coagulation in principle occurs within less than 3 hours and most often the clot adheres to the tube walls. Coagulation sometimes occurs more slowly and in this case the reaction can be considered positive if a clot appears in less than 24 hours.

As a control, add 0.1 mL of sterile Brain-heart broth (BK015) to 0.3 mL of reconstituted Coagulase Rabbit Plasma: this control tube should show no sign of coagulation after 24 hours of incubation.

4 COMPOSITION

Rabbit Plasma, EDTA, lyophilised.

5 QUALITY CONTROL

Appearance: light beige lyophilisate giving an amber yellow solution after reconstitution, opalescent.

Coagulation test in Brain-heart broth after 24 hours of incubation at 37°C:

<table>
<thead>
<tr>
<th>Microorganisms</th>
<th>Coagulation</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Staphylococcus aureus</em></td>
<td>Positive</td>
</tr>
<tr>
<td><em>Staphylococcus aureus</em></td>
<td>Positive</td>
</tr>
<tr>
<td><em>Staphylococcus epidermidis</em></td>
<td>Negative</td>
</tr>
<tr>
<td><em>Escherichia coli</em></td>
<td>Negative</td>
</tr>
</tbody>
</table>
6 STORAGE

Lyophilisate supplement: 2-8°C, shielded from light.
Once reconstituted, the product can be stored for a maximum duration of 30 days at 2-8°C, shielded from light.
The expiration date is indicated on the label.

7 PRESENTATION

Lyophilisate supplement:
10 vials (20 tests per vial)........................................................................................................................................BR00208

8 BIBLIOGRAPHY


9 ADDITIONAL INFORMATION

The information provided on the package takes precedence over the formulations or instructions described in this document and are susceptible to modification at any time, without warning.

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Update: 2015-02
Grounds for revision: General revision (§ 8 : Bibliography).