



National Department of Health

Title: Staph Latex Test (Staphaurex* or Staphyloslide*)

ID: G_90_T_6A

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Changes to the last authorized version:

Version	Date issued	Changes

1. Purpose and Scope

This document describes the Staph latex test procedure used to differentiate *Staphylococcus* sp.

Staphaurex* and Staphyloslide* are rapid slide agglutination procedures for differentiating *Staphylococcus aureus* which possess coagulase and/or protein A, from staphylococci which possess neither of these factors.

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2. Principle/Clinical application

Over 95% of human strains of *Staph. aureus* produce protein A, independently of clumping factor or staphylocoagulase, and this may be cell-associated and/or extracellular. Protein A has a specific affinity for the Fc moiety of immunoglobulin G (IgG).

The Staphaurex* and Staphyloslide* reagent consists of polystyrene latex particles which have been coated with fibrinogen and IgG.

On mixing the latex reagent with colonies of staphylococci which have clumping factor or Protein A present, cross-linking will occur giving visible agglutination of the latex particles.

Such agglutination will occur notably with *Staph. aureus*. If neither clumping factor nor Protein A are present, no agglutination will occur and the result will be regarded as negative. The most frequent coagulase and Protein A negative isolates of staphylococci are *Staphylococcus epidermidis*.

3. Responsibilities

- Staff performing Staph Latex tests require specific training and demonstrated competency.
- Staff performing Staph Latex tests are responsible for the setup, reading and recording of the Latex result.
- Staff are required to test and record Staph Latex positive and negative controls daily.

4. Specimen

- Test isolated colonies of *Staph.* species preferably grown on non-selective media after 18-24hrs incubation (Gram positive cocci and catalase positive)

5. Safety

For safety aspects, please review this document G_10_Info_3 Laboratory Biosafety.

6. Equipment and Materials

- Commercially available Staph Latex kit
- Quality Control organisms: *S. aureus* ATCC 29213 & *S. epidermidis* ATCC 12228
- Toothpicks or wooden applicator sticks
- Disposable Latex Reaction cards
- Gloves
- Timer


7. Procedure

7.1 Mix the latex reagent by shaking; expel any latex from the dropper for complete mixing

7.2 Dispense 1 drop of Test Latex onto one of the circles on the reaction card and add 1 drop of Control Latex onto another circle.

7.3 Using a microbiological loop or wooden applicator stick pick up and smear 5 suspect colonies onto the Test Latex-containing circle and mix this into the Test Latex reagent. Spread to cover the circle

7.4 Repeat step 7.3 for the Control Latex

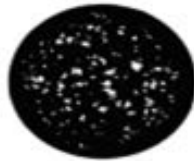
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7.5 Hand rock the card for up to 20 sec and observe for agglutination under normal lighting conditions. Read macroscopically; do not use a magnifying glass.

7.6 Dispose of the reaction card in an appropriate biohazard container

7.7 Re-cap the bottles and return to the refrigerator

Positive



Negative



8. Results Recording

- Record patient results on paper worksheet with registered lab number and patient identification
- Record results in LIMS

9. Interpretation

- A positive result is obtained if agglutination of the latex particles occurs within 20 sec in the test circle, with no agglutination in the control circle. The result is positive when there is noticeable clearing of the background in the test latex. This indicates the presence of *S. aureus*.
- A negative result is obtained if no agglutination occurs and a smooth suspension remains at 20 sec in the test circle. The result is negative when there is no noticeable clearing of the blue background in the test latex. Reactions occurring after 20 sec should be ignored.
- The test is uninterpretable if the control reagent shows agglutination or autoagglutination. If granular or stringy reactions occur, they should be interpreted using the following criteria: (1) The result is POSITIVE when there is a noticeable clearing of the background. (2) The result is NEGATIVE when there is no noticeable clearing of the background.
- Limitations- Some staphylococci other than *S. aureus* may give positive coagulase results. These strains include *S. hyicus*, *S. intermedius*, *S. lugdunensis*, and *S. schleiferi*, which may also react in rapid latex tests. If necessary, these species would require identification using biochemical test procedures. Both *S. intermedius* and *S. hyicus* are rarely isolated from human specimens.

10. Quality Control

- Follow the procedure method using the control organisms once each day
Staph aureus ATCC 29213 – Latex Pos
S. epidermidis ATCC 12228 – Latex Neg
- Record the QC results on the Bench Reagent QC Worksheet G_90_WS_1

11. Related Documents

- Bench Reagent QC Worksheet G_90_WS_1
- Laboratory Biosafety Info Sheet G_10_Info_3

12. Reference

- Remel Staphaurex and BBL Staphyloslide Latex package inserts