STANTON TERRITORIAL HEALTH AUTHORITY

Yellowknife, Northwest Territories

TITLE: Coagulase – Slide/Rapid Staph	**Revision Date:** 20-April-2018	**Issue Date:** 20-April-2016
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Distribution: Microbiology Test Manual	**Page:** 1 of 5	
Approved by: S. Asmussen, Manager of Diagnostic Services	**Signed by:** 	

INTRODUCTION:

Although most Staphylococcus species are common inhabitants of the skin and mucous membranes, *Staphylococcus aureus* has been associated with skin/soft tissue, bone/joint infections, wound infections, endocarditis, catheter-related bacteremia, septicemia, and nosocomial infections (pneumonia, surgical wound infections). The slide coagulase method has been shown to be a reliable method for identification of *S.aureus* in the routine microbiology laboratory.

PURPOSE:

This test is a rapid method to distinguish staphylococci (particularly *Staphylococcus aureus*) which possess coagulase (clumping factor) and/or protein A from other species of staphylococci in cultured specimens.

PRINCIPLE:

The Prolex Staph Latex kit utilizes polystyrene latex particles which have been sensitized with fibrinogen and IgG. When staphylococcal colonies which possess clumping factor and/or protein A are mixed with the latex reagent, the latex particles agglutinate strongly within 20 seconds.

SAMPLE INFORMATION:

Type	Well isolated colonies that are: • Gram-positive cocci in clusters • catalase positive • from a 18-36 hour culture • grown on non-selective media

REAGENTS and/or MEDIA:

Type	• Staph Test Latex Reagent • Negative Control Latex Reagent
Storage Requirements	• All kit components should be stored at 2-8°C. • Do not freeze the latex reagents.
Stability	• Shelf life of the kit is 12 months from the date of manufacture. The expiration date is stated on the outer label and the vial labels. • Do not use the reagents after the expiry date shown on the product label.

SUPPLIES:

- Staph Test Latex Reagent
- Negative Control Latex Reagent
- Disposable cards
- Disposable mixing sticks

SPECIAL SAFETY PRECAUTIONS:

Containment Level 2 facilities, equipment, and operational practices for work involving infectious or potentially infectious materials or cultures.

- Lab gown must be worn when performing activities with potential pathogens.
- Gloves must be worn when direct skin contact with infected materials is unavoidable.
- Eye protection must be used where there is a known or potential risk of exposure to splashes.
- All procedures that may produce aerosols, or involve high concentrations or large volumes should be conducted in a biological safety cabinet (BSC).
- The use of needles, syringes, and other sharp objects should be strictly limited.

QUALITY CONTROL:

Quality control is performed each day on the following strains:

Positive:	*Staphylococcus aureus*	ATCC 25923
Negative:	*Staphylococcus epidermidis*	ATCC 12228

A TQC order is generated in the TQC system.

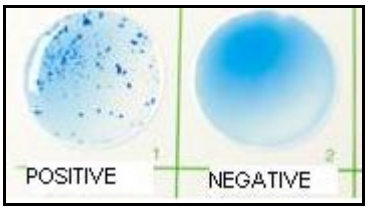
PROCEDURE INSTRUCTIONS:

Step	Action
Performing a Slide Coagulase (Rapid Staph)	
1	In the plate log – Order **^RS**
2	Allow the reagents to come to room temperature (22-28°C) for about 10 minutes before use.
3	Re-suspend the latex reagent by inverting the vial several times prior to use.
4	Dispense 1 drop of test reagent into a circle on the test card for each culture to be tested.
5	Touch 2-4 suspect colonies with the flat end of the mixing stick and emulsify the sample into the latex reagent, covering the complete area of the circle.
6	Gently rock the card the card allowing the mixture to flow slowly over the entire test ring area.
7	At 20 seconds, under normal lighting conditions, observe for agglutination.
8	If the result is positive, repeat steps 2-6 in the same way, using the negative control latex reagent.

INTERPRETATION OF RESULTS:

Positive test: A significantly rapid strong clumping (within 20 seconds) with the Latex Test Reagent and no agglutination with Negative Control Latex Reagent. Reactions occurring after the 20 seconds should be ignored.

Negative test: No visible agglutination of latex particles



NOTES AND PRECAUTIONS:

1. Reagents contain sodium azide. Sodium azide can react explosively with copper or lead if allowed to accumulate. Although the amount of sodium azide in the reagents is minimal, large quantities of water should be used when flushing used reagents down the sink.
2. False positive reactions do occur with strains of *S. capitis*, *S. saprophyticus* and *S. warneri,* since these species possess protein A. *S. lugdunensis* and *S. shleiferi* can also give a positive result, since they possess clumping factor. Positive tests must be confirmed with the tube coagulase test for nonhemolytic strains from urine specimens and for all isolates from any site other than urine.
3. *S. intermedius* and *S. hyicus* may agglutinate the latex reagent, but it is clinically not important to separate these animal pathogens from *S. aureus*, because they are rarely found in humans and are considered as pathogenic as *S. aureus*.
4. False negatives or false positive results can occur if inadequate amounts of culture or reagent are used.

5. Some streptococci and possibly other organisms that possess immunoglobulin binding factors and some species such as *Escherichia coli* may also agglutinate latex reagents non-specifically. Be sure the organism you are testing is catalase positive and gram positive.
6. Negative tests from catalase positive, gram positive cocci in clusters should be confirmed with a tube coagulase test if the isolate is from any site other than urine.

REFERENCES:

- Prolex Staph Latex Kit package insert, 2007
- Clinical Microbiology Procedures Handbook, 2nd Edition, Henry D. Isenberg, 2004, p.3.17.13

REVISION HISTORY:

REVISION	DATE	Description of Change	REQUESTED BY
1.0	25/01/11	Initial Release	J Whitson
1.1	31JUL13	Annual Review	A Darrach
1.2	07Mar14	Update from MTE10500 to MIC50500	C Russell
2.0	31Mar16	Update of “Special Safety Precautions” to reflect risk assessment recommendations.	C. Russell