PROGRAM Standard Operating Procedure – Laboratory Services	
Title: MIC50600 – Streptococcus Latex Test	Policy Number:
Program Name: Laboratory Services	
Applicable Domain: Lab, DI and Pharmacy Services	
Additional Domain(s):	
Effective Date:	Next Review Date:
Issuing Authority: Director of Health Services	Date Approved:
Accreditation Canada Applicable Standard: N/A	

GUIDING PRINCIPLE:
The Streptococcus latex test is used to serologically identify beta-hemolytic *Streptococci* belonging to Lancefield groups A, B, C, D, F and G.

PURPOSE/RATIONALE:
This standard operating procedure describes how to perform the Streptococcus latex test.

SCOPE/APPLICABILITY:
This procedure applies to Medical Laboratory Technologists (MLTs) performing the Streptococcus latex test.

SAMPLE INFORMATION:

Type	One to four, well-isolated colonies that are: • Gram-positive cocci • Beta-hemolytic • Catalase negative

REAGENTS and/or MEDIA:

Type	PROLEX STREPTOCOCCAL GROUPING LATEX KIT
Stability and Storage Requirements	• Store at 2°C to 8°C • Do not freeze

SUPPLIES:
- Glass test tubes
- Disposable loops
- Wooden sticks
- Sterile pipettes
- Disposable test cards

NOTE:

- ***Streptococcus pyogenes* (Group A) from invasive sites is a critical result and needs to be phoned to ordering location and phoned and copied to OCPHO (HPU1). Refer to Reportable Diseases – Public Health Act as of September 2009 for reporting to OCPHO (HPU1) and 15-10-V1 Laboratory Critical Results Procedure**
- ***Streptococcus agalactiae* (Group B) from invasive sites in neonates need to be copied to OCPHO (HPU1). Refer to Reportable Diseases – Public Health Act as of September 2009 for reporting to OCPHO (HPU1)**

SPECIAL SAFETY PRECAUTIONS:

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

- Ensure that appropriate hand hygiene practices be used.
- 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 when there is a known or potential risk of exposure of 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.

All patient specimens are assumed to be potentially infectious. Routine Practices must be followed. Since viable micro-organisms are used, all cultures must be handled with appropriate precautions. All equipment in contact with cultures should be decontaminated by appropriate methods.

QUALITY CONTROL:

- Quality control is performed weekly:
  - Positive: Polyvalent positive control
  - Negative: Sterile saline
- A TQC order is automatically generated on Wednesdays to record the QC results
- Each test should be tested with at least one extra grouping latex suspension as a negative control

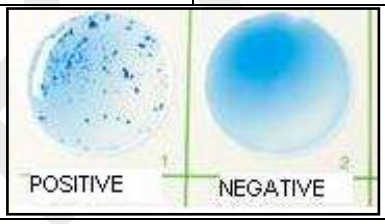
PROCEDURE INSTRUCTIONS:

Step	Action
Performing the Streptococcus latex test	
1	Remove the test kit from the refrigerator 10 minutes prior to use and allow the reagents to reach room temperature.

2	Label one test tube for each specimen to be tested.
3	Add 2 drops of Extraction Reagent 1 to each tube.
4	Select 1 to 4 colonies using a wooden stick or disposable loop and suspend in the extraction reagent. If colonies are small, emulsify enough well isolated colonies so that the extraction reagent becomes turbid.
5	Add 2 drops of Extraction Reagent 2 to each tube. Mix by tapping for 5 to 10 seconds.
6	Add 2 drops of Extraction Reagent 3 to each tube. Mix by tapping for 5 to 10 seconds.
7	Re-suspend the latex reagent by inverting the dropper bottle several times.
8	Dispense one drop of each latex suspension to be tested onto separate circles on the test card.
9	Using a sterile pipette, place one drop of extract beside each drop of latex suspension.
10	Using a new stick for each circle, mix the latex and the extract over the complete area of the circle.
11	Gently rock the card allowing the mixture to flow slowly over the entire test ring area.
12	At 1 minute, under normal lighting conditions, observe for agglutination.

INTERPRETATION OF RESULTS:

IF	THEN
Strong agglutination within 1 minute	**Streptococcus latex test = Positive**
No visible agglutination within 1 minute	**Streptococcus latex test = Negative**



LIMITATIONS:

1. False negative or false positive results can occur if insufficient amounts of culture or extraction reagents are used.
2. The kit is intended for use in identification of beta-hemolytic *Streptococcus* only. If alpha or non-hemolytic *Streptococci* are tested, the identification should be confirmed with a Vitek 2 GP card.
3. False positive reactions have been known to occur with organisms from unrelated genera, e.g. *Escherichia coli*, *Klebiella* or *Pseudomonas*.
4. Some strains of Group D *Streptococcus* can cross-react with Group G latex. Confirm as Group D with a Vitek 2 GP card.
5. *Enterococcus* can be differentiated from Group D *Streptococcus* with a Vitek 2 GP card.

6. *Listeria monocytogenes* may cross-react with Group B and/or G latex. Perform the catalase test and Gram-stain to differentiate *Listeria* (catalase +, Gram-positive bacilli) from *Streptococcus*.
7. *Streptococcus* isolates from sterile sites that are positive with group A latex must have a PYR test performed. Do not report Group A *Streptococcus* that is PYR negative as *Streptococcus pyogenes*. Report as *Streptococcus* species and refer organism to *Dyna*LIFE for further identification.
8. Some reagents contain a small amount of sodium azide. Sodium azide can react explosively with copper or lead plumbing if allowed to accumulate. Although the amount of sodium azide in the reagents is minimal, large quantities of water should be used if the reagents are flushed down the sink.
9. The extraction reagents contain a mildly caustic agent. In case of skin contact, immediately wash the area with soap and copious amounts of water. If the reagent comes into contact with an eye, flush with water for at least 15 minutes.

CROSS-REFERENCES:

- 15-10-V1 Laboratory Critical Results Procedure
- Reportable Diseases – Public Health Act as of September 2009
- MIC35100-Nosocomial Infection Notification Job Aid

REFERENCES:

1. PRO-LAB. (2015-06). *PROLEX STREPTOCOCCAL GROUPING LATEX KIT* package insert

APPROVAL:

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Date

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REVISION HISTORY:

REVISION	DATE	Description of Change	REQUESTED BY
1.0	08 Apr 19	Initial Release	L. Steven
2.0	30 Jun 21	Procedure reviewed and added to NTHSSA policy template	L. Steven