

<b>PROGRAM Standard Operating Procedure – Laboratory Services</b>	
Title: MIC31300 – Throat Culture	Policy Number:
Program Name: Laboratory Services	
Applicable Domain: Lab, DI and Pharmacy Services	
Additional Domain(s): NA	
Effective Date:	Next Review Date:
Issuing Authority: Director, Laboratory and Diagnostic Imaging Services	Date Approved:
Accreditation Canada Applicable Standard: NA	

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**GUIDING PRINCIPLE:**

Throat swabs, as well as pharyngeal and peritonsillar abscess swabs are submitted for the diagnosis of *Streptococcus pyogenes* pharyngitis or Group A Strep.

**PURPOSE/RATIONALE:**

This standard operating procedure describes the screening for Group A *Streptococcus* (GAS) in throat specimens.

**SCOPE/APPLICABILITY:**

This standard operating procedure applies to Medical Laboratory Technologists (MLTs) processing specimens for throat culture.

**SAMPLE INFORMATION:**

<b>Type</b>	Swab • Amie’s with or without charcoal
<b>Source</b>	• Throat swab
<b>Stability</b>	If the sample is received in the laboratory and processed greater than 48 hours from collection: • Add specimen quality comment: “Delayed transport may adversely affect pathogen recovery”
<b>Storage Requirements</b>	Room temperature
<b>Criteria for rejection</b>	1. Unlabeled/mislabeled swab 2. Specimen container label does not match patient identification on requisition 3. Duplicate specimens obtained with same collection method within 24 hours

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**REAGENTS and/or MEDIA:**

- Blood agar (BA)
- Identification reagents: catalase and Strep latex test

**SUPPLIES:**

- Disposable inoculation needles
- Wooden sticks
- Glass test tubes
- Sterile pipettes
- Anaerobic jar, pack, and indicator

**EQUIPMENT:**

- Biosafety cabinet
- 35° ambient air incubator
- VITEK 2 and supplies

**SPECIAL SAFETY PRECAUTIONS:**

Containment Level 2 facilities, equipment, and operational practices for work involving infectious or potentially 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:**

- Refer to Test Manual for reagent quality control procedures

**PROCEDURE INSTRUCTIONS:**

Step	Action
<b>Processing swabs for throat culture</b>	
1	In the biosafety cabinet: <ul style="list-style-type: none"><li>• Inoculate BA with the swab</li><li>• Ensure all surfaces of the swab make contact with the agar</li><li>• Streak for isolated growth using a disposable inoculation needle</li></ul>
2	Incubate the media: <ul style="list-style-type: none"><li>• Place BA in the CO<sub>2</sub> incubator in throat rack in CO<sub>2</sub> incubator to be set up in anaerobic jar by evening technologist</li></ul>

**INTERPRETATION OF RESULTS:**

Step	Action	
1	<ul style="list-style-type: none"> <li>Observe BA plate at 24 hours and 48 hours</li> <li>Examine for large (&gt;0.5 mm), beta hemolytic colonies resembling GAS</li> </ul>	
2	If no large colony, beta-hemolytic Strep. colonies seen at 18 to 24 hours: <ul style="list-style-type: none"> <li>Record observations in the LIS</li> <li>Re-incubate plates anaerobically for an additional 24 hours</li> </ul>	
3	If no large colony, beta-hemolytic Strep. colonies seen at 48 hours: <ul style="list-style-type: none"> <li>Record observations in the LIS</li> <li>Workup complete</li> <li>GAS not isolated</li> </ul>	
4	If large colony, beta-hemolytic Strep. colonies are seen: <ul style="list-style-type: none"> <li>Record observations in the LIS</li> <li>Perform Strep latex test for Group A</li> </ul>	
5	<b>IF</b>	<b>THEN</b>
	Strep A latex test NEGATIVE	<ul style="list-style-type: none"> <li>Record observations in LIS</li> <li>Workup complete, GAS not isolated</li> </ul>
	Strep A latex test POSITIVE	<ul style="list-style-type: none"> <li>Record observations in LIS</li> <li>GAS isolated</li> </ul>

**NOTE:** Each Streptococcus grouping latex test should be tested with at least one extra grouping latex suspension as a negative control

**REPORTING INSTRUCTIONS:**

IF	REPORT
GAS not isolated	<ul style="list-style-type: none"> <li>Report: <b>"No Streptococcus pyogenes (Group A) isolated"</b></li> </ul>
GAS isolated and clinical history does not indicate: <ul style="list-style-type: none"> <li>History of penicillin allergy</li> <li>Recurrent pharyngitis</li> <li>Treatment failure</li> <li>Current therapy with erythromycin or clindamycin</li> <li>If requested by physician</li> </ul>	<ul style="list-style-type: none"> <li>Choose key 4 on STRA keypad to add isolate: <b>"Streptococcus pyogenes (Group A)"</b></li> <li>List quantitation as <b>"Isolated"</b></li> <li>The following isolate comments will be added: <b>&amp;2109 and &amp;A373</b></li> </ul>
GAS isolated and clinical history does indicate: <ul style="list-style-type: none"> <li>History of penicillin allergy</li> <li>Recurrent pharyngitis</li> <li>Treatment failure</li> <li>Current therapy with erythromycin or clindamycin</li> <li>If requested by physician</li> </ul>	<ul style="list-style-type: none"> <li>Choose key 5 on STRA keypad to add isolate: <b>"Streptococcus pyogenes (Group A)"</b></li> <li>List quantitation as <b>"Isolated"</b></li> <li>VITEK AST-ST03 panel will be ordered</li> <li>Report susceptibility results as per ASTM</li> </ul>

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**LIMITATIONS:**

1. A negative throat culture does not eliminate the possibility of a throat infection. Inadequate specimen collection, improper specimen handling, low organism levels in the specimen or overgrowth with normal oral microorganisms may yield a false negative result.

**CROSS-REFERENCES:**

NA

**REFERENCES:**

1. Leber, A. (2016). *Clinical microbiology procedures handbook*. (4<sup>th</sup>ed.) Washington, D.C.: ASM Press
2. Jorgensen J.H., Pfaller M.A., Carroll K.C., Funke G., Landry M.L., Richter S.S., Warnock D.W. (2015). *Manual of Clinical Microbiology*, 11<sup>th</sup> edition. Washington, D.C: ASM Press

**APPROVAL:**

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Date

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**REVISION HISTORY:**

REVISION	DATE	Description of Change	REQUESTED BY
1.0	22 Nov 17	Initial Release	L. Steven
2.0	30 Nov 19	Procedure reviewed	L. Steven
3.0	31 Dec 21	Procedure reviewed and added to NTHSSA policy template	L. Steven
4.0	05 Jun 23	Procedure reviewed and updated to add new VITEK AST-ST03 card	L. Steven