PROGRAM Standard Operating Procedure – Laboratory Services	
Title: MIC50300 – Catalase 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 catalase test is used to detect the presence of the enzymes, catalase and peroxidase, produced by some bacteria.

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

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

SAMPLE INFORMATION:

Type	One, well isolated colony that is: • 18 to 24 hours old

REAGENTS and/or MEDIA:

Type	Dalynn Catalase Reagent
Stability and Storage Requirements	• Store reagent at 4°C to 8°C • Protect from light

SUPPLIES:
- Glass microscope slides
- Wooden sticks
- Disposable loops

SPECIAL SAFETY PRECAUTIONS:

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

- Ensure that appropriate hang 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.

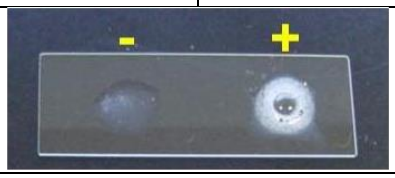
QUALITY CONTROL:

- Quality control is performed daily:
  - Positive: *Staphylococcus aureus* ATCC 25923
  - Negative: *Streptococcus pyogenes* ATCC 19615
- A TQC order is automatically generated daily to record the QC results

PROCEDURE INSTRUCTIONS:

Step	Action
Performing the catalase test	
1	With a sterile loop or wooden stick, pick the center of a colony from an overnight culture plate and place it on a clean, glass slide.
2	Place a drop of catalase reagent onto the smear.
3	Observe for immediate bubbling. It may be necessary to use a magnifying lens to detect weakly positive reactions.

INTERPRETATION OF RESULTS:

IF	THEN
Immediate appearance of bubbles	**Catalase = Positive**
Absence of bubbles	**Catalase = Negative**
	

LIMITATIONS:

1. If a colony is removed from a blood-containing medium, care must be taken to touch the top of the colony only. The enzyme catalase is produced in red blood cells. The carryover of blood cells with a colony could give a false positive result.
2. The test should not be performed on colonies older than 24 hours, because the enzyme is present in viable cultures only. Older cultures may give false-negative reactions.
3. Catalase is inactivated by sunlight.
4. Do not test from Mueller Hinton agar.
5. Do not reverse the order of adding the reagent to the colony as false positive results could occur.
6. Hydrogen peroxide is caustic, avoid exposure to skin. If H_2O_2 does get on the skin, immediately flood the area with 70% ethyl alcohol, not water.
7. Aerosols may be released by the bubbling of the O_2.

REFERENCES:

1. Dalynn. (2014-01). *Catalase Reagent* package insert

APPROVAL:

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Date

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REVISION HISTORY:

REVISION	DATE	Description of Change	REQUESTED BY
1.0	04 Apr 19	Initial Release	L. Steven
2.0	30 Jun 21	Procedure reviewed and added to NTHSSA policy template	L. Steven