Title: MIC51200-PYR Test

Issuing Authority: Director of Health Services

Next Review Date:

Type: Laboratory Services Program SOP

Policy Number: Date Approved:

PROGRAM Standard Operating Procedure – Laboratory Services		
Title: MIC51200 - PYR Test Policy Number:		
Program Name: Laboratory Services		
Applicable Domain: Lab, DI and Pharmacy Services		
Additional Domain(s):		
Effective Date:	Next Review Date:	
Issuing Authority: Date Approved:		
Director of Health Services		
Accreditation Canada Applicable Standard: N/A		

### **GUIDING PRINCIPLE:**

The PYR test is used for the identification of catalase negative, gram positive cocci, including *Enterococci* and Group A *Streptococcus*; to differentiate *Escherichia coli* from other indole-positive, lactose positive Gram-negative rods and to differentiate coagulase-negative *Staphylococci*.

## **PURPOSE/RATIONALE:**

This standard operating procedure describes how to perform the PYR test.

## SCOPE/APPLICABILITY:

This procedure applies to Medical Laboratory Technologists (MLTs) performing the PYR test.

### **SAMPLE INFORMATION:**

Туре	Few, well isolated colonies	
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### **REAGENTS and/or MEDIA:**

Туре	remel PYR DISK with REAGENT	
Stability and Storage Requirements	<ul> <li>Store in the dark at 2°C to 8°C</li> <li>Allow to come to room temperature before use</li> <li>Protect disks from moisture by removing only those disks necessary for testing</li> <li>Promptly replace the cap and return the vial to 2°C to 8°C</li> </ul>	

### **SUPPLIES:**

- Forceps
- Glass microscope slides
- Sterile saline

- Sterile pipettes
- Wooden sticks
- Disposable loops

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#### **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: Enterococcus faecalis ATCC 29212
  - Negative: Streptococcus agalactiae ATCC 12386
- A TQC order is automatically generated on Wednesdays to record the QC results

### PROCEDURE INSTRUCTIONS:

Step	Action
Perfo	rming the PYR test
1	Using forceps, place a disk on a clean microscope slide or on the surface of the Blood agar plate.
2	If the disk was placed on a slide, moisten with sterile saline. Do not oversaturate the disk.
3	With a wooden stick or disposable loop, remove a heavy visible paste (5 to 10 colonies) of the test isolate and rub it into the disk.
4	Incubate at room temperature for 2 minutes.
5	Add one drop of Colour Developer to the disk. Wait for 1 minute.

### **INTERPRETATION OF RESULTS:**

IF	THEN
Diply to rad calcur	PYR =
Pink to red colour	Positive
Croam vollow or no colour change	PYR =
Cream, yellow or no colour change	Negative

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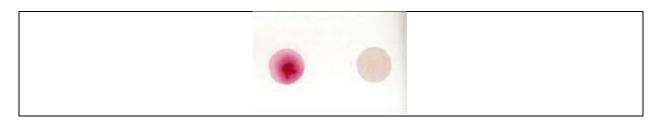
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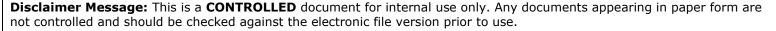


### LIMITATIONS:

- 1. This test is only part of the overall scheme for identification.
- 2. Aerococcus viridans, Lactococcus garvieae, certain Staphylococci and most Corynebacterium haemolyticum strains are PYR positive, as are some Enterobacteriaceae and other gram-negative bacilli. Consult appropriate references for differential tests when necessary.
- 3. Some Streptococcus pyogenes may give negative PYR reactions.
- 4. Some *Enterococci* do not possess detectable Group D antigen although they give a positive reaction in the PYR test. The identity of such organisms should be confirmed using the Vitek 2 instrument.
- 5. Some strains of *Enterococci* are beta-hemolytic; therefore, colony morphology must be carefully evaluated to differentiate between *Enterococci* and *Streptococcus pyogenes*.
- 6. False negative reactions may occur if inadequate inoculum is used or if inoculum is removed from selective media or if disk is too moist.
- 7. The product should not be used if the color of the disk has changed from white, the expiration date has passed or there are other signs of deterioration.
- 8. PYR reagent is toxic and may cause harm to the environment; harmful by inhalation, contact with skin or eyes, or if swallowed.

#### **REFERENCES:**

1. remel. (2008-12). PYR Disk package insert



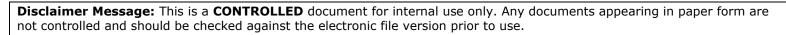
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APPROVAL:			
Date			

# **REVISION HISTORY:**

REVISION	DATE	Description of Change	REQUESTED BY
1.0	05 Apr 19	Initial Release	L. Steven
2.0	30 Jun 21	Procedure reviewed and added to NTHSSA policy template	L. Steven



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