PROGRAM Standard Operating Procedure – Laboratory Services	
Title: MIC34300 – Blood Product 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	

GUIDING PRINCIPLE:
Occasionally blood, platelets and other transfusion products may become infected at the time of collection from donors, during processing or at the time of infusion into patients. Any organism isolated must be considered significant.

PURPOSE/RATIONALE:
This standard operating procedure describes how to determine the significance of growth in blood product specimens.

SCOPE/APPLICABILITY:
This standard operating procedure applies to Medical Laboratory Technologists (MLTs) processing specimens for blood product culture.

SAMPLE INFORMATION:

Type	Transfusion products • Red blood cells • Platelets • Other products remaining after transfusion reaction
Source	Blood product bag/container
Stability	Transport remaining blood product to the laboratory immediately after transfusion reaction is detected
Storage Requirements	Refrigerated
Criteria for rejection	1. Improperly collected, labeled, transported, or handled specimens should be processed. SCM40110-Waiver of Responsibility form needs to be filled out by the responsible nurse

REAGENTS and/or MEDIA:

- Blood agar (BA), Chocolate agar (CHO), MacConkey agar (MAC) and Brucella agar (BRU)
- BACTEC Plus Aerobic/F culture bottles and BACTEC Lytic/10 Anaerobic/F culture bottles
- Identification reagents: catalase, oxidase, Staph latex test, Strep latex test, etc.

SUPPLIES:

- Sub culturing/venting unit
- Alcohol pads
- Disposable inoculation needles
- Microscope slides
- Anaerobic jar and pouch
- Wooden sticks

EQUIPMENT

- BD BACTEC FX
- Biosafety cabinet
- 35° ambient air and 35° CO_2 incubators
- 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
Processing specimens for blood product culture	
1	Refer to MIC10250-Blood Product Processing for Culture.

INTERPRETATION OF RESULTS:

Step	Action
1	For blood product cultures, a body fluid culture will always be ordered and processed. Additionally, if there is an adequate volume of the product remaining, fluid in blood culture bottles will also be ordered.
2	If ordered, process blood culture bottles as per MIC34000-Blood Culture.
3	• Observe BA and CHO plates at 24 hours, 48 hours, and 72 hours • Observe MAC plate at 24 hours and 48 hours
4	• Observe BRU at 48 hours and 5 days • If anaerobic growth is suspected, perform gram stain. If gram stain resembles growth on aerobic plates, further workup is not indicated. If growth does not resemble growth on aerobic plates, perform aerotolerance test. Refer to MIC53700-Aerotolerance Test
5	If growth is observed, perform biochemical testing to report preliminary ID of the isolate. Refer to the Microbiology Bacteriology Manual organism ID charts to guide work-up.
6	Provide genus and species identification as soon as possible. If a preliminary identification cannot be made after 24 hours, release a preliminary culture report using the gram stain morphology.

REPORTING INSTRUCTIONS:

IF	REPORT
No growth after 1 day	**PRELIM:** • Report: **"No growth after 1 Day"** • Report: **"Further report to follow"**
No aerobic growth after 3 days	**INTERIM:** • Report: **"No growth aerobically after 3 days"** • Report: **"@Anaerobic culture to follow"**
No anaerobic growth after 5 days	**FINAL:** • Report: **"No anaerobes isolated after 5 days"** • Print a copy of the final report and deliver to the Technical Specialist, Transfusion Medicine
Any growth	• Report organism(s) identification • List quantitation as **"Isolated"** • Report susceptibility results as per ASTM • All growth is considered a critical result and needs to be phoned to the patient's ordering location • Freeze isolate(s) and log into stored isolates log • Print a copy of the final report and deliver to the Technical Specialist, Transfusion Medicine

NOTE:

- Refer to Reportable Diseases-Public Health Act as of September 2009 for reporting to HPU1
- Refer to LQM70620-Laboratory Critical Results List-Microbiology for results that need to be phoned to ordering location
- Refer to MIC36100-Nosocomial Infection Notification Job Aid to determine if organism needs to be copied to Infection Prevention and Control
- Refer to MIC36200-Referral of Category A Specimens to APL for sending category A isolates to APL
- Refer to MIC36300-Referral of Category B Specimens to APL for sending category B isolates to APL

LIMITATIONS:

1. False-positive results may result from contamination of the blood product at time of performing the culture.
2. False-negative results may be caused by low numbers of organism or by the fastidious nature of the infective organism.

CROSS-REFERENCES:

- MIC20115-Gram Stain Procedure
- MIC34000-Blood Culture
- MIC36100-Nosocomial Infection Notification Job Aid
- MIC36200-Referral of Category A Specimens to APL
- MIC36300-Referral of Category B Specimens to APL
- MIC36500-Referral of Category B Specimens to NML
- MIC40100-Suspect High Risk Organism Workup
- MIC53700-Aerotolerance Test
- SCM40110-Waiver of Responsibility
- LQM70620-Laboratory Critical Results List-Microbiology

REFERENCES:

1. Leber, A. (2016). *Clinical microbiology procedures handbook.* (4th 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, 11th 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	21 Mar 19	Initial Release	L. Steven
2.0	22 Feb 21	Procedure reviewed and added to NTHSSA policy template	L. Steven
3.0	27 Feb 23	Procedure reviewed	L. Steven
4.0	21 Mar 25	Procedure reviewed	L. Steven