**PURPOSE:** To determine the presence or absence of *Staphylococcus aureus* in nasal specimens.

## SAMPLE INFORMATION:

| | |
|---|---|
| **Type** | Swab<br>• Amie's with or without charcoal |
| **Source** | Nose |
| **Stability** | If the sample is received in the laboratory and processed greater than 48 hours from collection:<br>• Add specimen quality comment: "Delayed transport may adversely affect pathogen recovery" |
| **Storage Requirements** | Room temperature |
| **Criteria for rejection** | 1. Unlabeled/mislabeled swabs.<br>2. Specimen container label does not match patient identification on requisition.<br>3. Dry swabs. |

## REAGENTS and/or MEDIA:

- Blood agar (BA) and Mueller Hinton agar (MHP)
- Identification reagents: catalase, Staph latex test and Cefoxitin antibiotic disks

## SUPPLIES:

- Disposable inoculation needles
- Biosafety cabinet
- 37° $CO_2$ incubators
- Wooden sticks
- Plastic test tubes
- 0.9% sterile saline

## SPECIAL SAFETY PRECAUTIONS:

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

- 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. Universal precautions 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 swabs for nose culture** | |
| 1 | In the biosafety cabinet, inoculate Blood agar. |
| 2 | Streak for isolated growth using a disposable inoculation needle:<br>  <br><br>Streak out to cover the whole plate. |
| 3 | Place BA plate in the $CO_2$ incubator. |
| 4 | Examine plates after 24 hour incubation. Record observations in the LIS. |
| 5 | Re-incubate $CO_2$ plate(s) for an additional 24 hours. |
| 6 | At 48 hours, examine plates and record observations. |

## INTERPRETATION OF RESULTS:

| Step | Action | |
|---|---|---|
| 1 | Remove culture plate after 24 hours incubation. | |
| 2 | Observe plate for *Staphylococcus aureus* colonies. | |
| 3 | **If *Staphylococcus aureus* colonies are not seen:** | |
| | No S.aureus colonies seen at 24 hours | • Record observations in the LIS.<br>• Re-incubate plate in $CO_2$ incubator on the "Old wound culture" shelf. |
| | No S.aureus colonies seen at 48 hours | • Record observations in the LIS.<br>• Workup complete. *S.aureus* not isolated. |
| 4 | **If *Staphylococcus aureus* colonies are seen:** | |
| | **IF** | **THEN** |
| | *S.aureus* colonies are not isolated | • Subculture colonies to Blood agar.<br>• Perform Staph latex test from subculture plate. |
| | *S.aureus* colonies are isolated | • Perform Staph latex test. |
| | **IF** | **THEN** |
| | Staph latex test: NEGATIVE | • Record observations in the LIS.<br>• Workup complete. *S.aureus* not isolated. |
| | Staph latex test: POSITIVE | • Record observations in the LIS.<br>• *S.aureus* isolated.<br>• Perform cefoxitin disk diffusion test. Refer to MIC51300 – Cefoxitin Screen. |
| | **IF** | **THEN** |
| | Cefoxitin screen: SENSITIVE | • Record results in the LIS as per MIC51100 – Disk Diffusion Test.<br>• Methicillin sensitive *S.aureus* isolated. |
| | Cefoxitin screen: RESISTANT | • Record results in the LIS as per MIC51100 – Disk Diffusion Test.<br>• Methicillin resistant *S.aureus* isolated. |

## REPORTING RESULTS:

| IF | REPORT |
|---|---|
| No *Staphylococcus aureus* isolated after 2 days | • Report: **"No Staphylococcus aureus isolated"** |
| Methicillin sensitive *Staphylococcus aureus* isolated | • Add organism: **"Staphylococcus aureus"**<br>• List quantification as **"Isolated"**<br>• Isolate comment &MSSA will be reflexed from the susceptible cefoxitin KB result to state: **"***Methicillin susceptible (MSSA)***"** |
| Methicillin resistant *Staphylococcus aureus* isolated | • Add organism: **"Staphylococcus aureus"**<br>• List quantification as **"Isolated"**<br>• Isolate comment &MRSA will be reflexed from the resistant cefoxitin KB result to state: **" ***Methicillin Resistant*** This organism is cloxacillin resistant (MRSA) and is resistant to all beta-lactam agents."** |

## REFERENCES:


- Clinical Microbiology Procedures Handbook, 4th edition, ASM Press, 2016
- 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, ASM Press, Washington, D.C.


## REVISION HISTORY:

| REVISION | DATE | Description of Change | REQUESTED BY |
|---|---|---|---|
| 1.0 | | Initial Release | L. Steven |
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