



Document Name: Throat Culture

Approved By:
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Status: **APPROVED**

PURPOSE: To determine the presence or absence of bacterial pathogens in throat specimens.

SAMPLE INFORMATION:

| | |
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| Type | Swab <ul style="list-style-type: none"> Amie's with or without charcoal |
| Source | <ul style="list-style-type: none"> Throat swab |
| Stability | <p>If the sample is received in the laboratory and processed greater than 48 hours from collection:</p> <ul style="list-style-type: none"> Add specimen quality comment: "Delayed transport may adversely affect pathogen recovery" |
| Storage Requirements | Room temperature |
| Criteria for rejection and follow up action | <ol style="list-style-type: none"> Unlabeled/mislabeled swabs. Specimen container label does not match patient identification on requisition. Duplicate specimens obtained with same collection method within 24 hours. Dry swabs. |

| Pathogens | Normal Flora |
|---|---|
| <ul style="list-style-type: none"> <i>Streptococcus pyogenes</i> <i>Arcanobacterium haemolyticum</i> <i>Neisseria gonorrhoeae</i> – See MIC30450 Yeast – See MIC32200 <p>NOTE: If gonorrhoeae culture is ordered on throat specimen, full throat culture along with gonorrhoeae culture will be performed.</p> | <ul style="list-style-type: none"> Viridans streptococci Non-hemolytic streptococci <i>Streptococcus agalactiae</i> <i>Staphylococcus</i> spp. <i>Neisseria</i> spp. <i>Moraxella catarrhalis</i> Anaerobes <i>Haemophilus</i> spp. <i>Corynebacterium</i> spp. Aerobic gram-negative bacilli |

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REAGENTS and/or MEDIA:

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

SUPPLIES:

- Disposable inoculation needles
- Biosafety cabinet
- Anaerobic jar, pack and indicator
- 35° ambient air incubator
- Glass test tubes
- Wooden sticks
- Sterile pipettes
- Vitek 2 and supplies

SPECIAL SAFETY PRECAUTIONS:

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

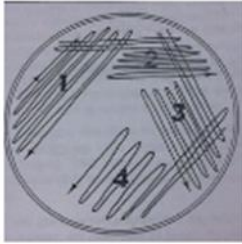
- Lab gown must be worn when performing activities with potential pathogens.
- Gloves must be worn when direct skin contact with infected materials is unavoidable.
- Eye protection must be used when there is a known or potential risk of exposure of splashes.
- All procedures that may produce aerosols, 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 throat culture | |
| 1 | In the biosafety cabinet, inoculate Blood agar from the swab, ensuring all surfaces of the swab make contact with the agar. |
| 2 | <p>Streak for isolated growth using a disposable inoculation needle:</p> <div style="text-align: center;">  </div> <p>Streak out to cover the whole plate.</p> |
| 3 | Place plate in throat rack in CO ₂ incubator to be set up in anaerobic jar by evening technologist. Incubate for 18-24 hours. |

INTERPRETATION OF RESULTS:

| Step | Action | | | | |
|---|---|---|---|---|---|
| 1 | Remove culture plate after 18-24 hour incubation. | | | | |
| 2 | Observe plate for beta hemolytic colonies. | | | | |
| If beta-hemolytic colonies are not seen: | | | | | |
| 3 | <table border="1" style="width: 100%;"> <tr> <td style="width: 30%;">No beta-hemolytic colonies seen at 18-24 hours</td> <td> <ul style="list-style-type: none"> Record observations in the LIS. Re-incubate plates anaerobically for an additional 24 hours. </td> </tr> <tr> <td>No beta-hemolytic colonies seen at 48 hours</td> <td> <ul style="list-style-type: none"> Record observations in the LIS. Workup complete. GAS not isolated. </td> </tr> </table> | No beta-hemolytic colonies seen at 18-24 hours | <ul style="list-style-type: none"> Record observations in the LIS. Re-incubate plates anaerobically for an additional 24 hours. | No beta-hemolytic colonies seen at 48 hours | <ul style="list-style-type: none"> Record observations in the LIS. Workup complete. GAS not isolated. |
| | No beta-hemolytic colonies seen at 18-24 hours | <ul style="list-style-type: none"> Record observations in the LIS. Re-incubate plates anaerobically for an additional 24 hours. | | | |
| No beta-hemolytic colonies seen at 48 hours | <ul style="list-style-type: none"> Record observations in the LIS. Workup complete. GAS not isolated. | | | | |

Please Note:

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

| If beta-hemolytic colonies are seen, perform Strep latex test for Group A: | |
|--|--|
| IF | THEN |
| <p>Group A Strep latex test is negative and clinical history does <u>not</u> indicate:</p> <ul style="list-style-type: none"> • Sore throat or pharyngitis accompanied by a rash. • History of treatment failure. • History of recurrent/persistent pharyngitis. | <ul style="list-style-type: none"> • Record observations in LIS. • Workup complete. GAS not isolated. |
| <p>Group A Strep latex test is negative and clinical history does indicate:</p> <ul style="list-style-type: none"> • Sore throat or pharyngitis accompanied by a rash. • History of treatment failure. • History of recurrent/persistent pharyngitis. | <ul style="list-style-type: none"> • Record observations in LIS. • Perform gram stain on beta hemolytic colony. • If gram-stain results are Gram-positive bacilli, perform Vitek GP card to screen for <i>Arcanobacterium haemolyticum</i>. |
| IF | THEN |
| <p>4 Group A Streptococcus latex testing is positive and clinical history does <u>not</u> indicate:</p> <ul style="list-style-type: none"> • History of penicillin allergy. • Recurrent pharyngitis. • Treatment failure. • Current therapy with erythromycin/clarithromycin/azithromycin/clindamycin. • If requested by physician. | <ul style="list-style-type: none"> • Record observations in LIS. • Susceptibility testing not performed. |
| <p>Group A Streptococcus latex testing is positive and clinical history does indicate:</p> <ul style="list-style-type: none"> • History of penicillin allergy. • Recurrent pharyngitis. • Treatment failure. • Current therapy with erythromycin/clarithromycin/azithromycin/clindamycin. • If requested by physician. | <ul style="list-style-type: none"> • Record observations in LIS. • Perform susceptibility testing as per ASTM. |

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REPORTING RESULTS:

| IF | REPORT |
|--|--|
| No beta hemolytic colonies isolated at 48 hours and significant clinical history is <u>not</u> provided. | <ul style="list-style-type: none"> Report: “No Group A streptococcus isolated” |
| No beta hemolytic colonies isolated at 48 hours and significant clinical history is provided. | <ul style="list-style-type: none"> Report: “No Group A streptococcus isolated” |
| Strep latex testing positive for Group A and susceptibility testing not required. | <ul style="list-style-type: none"> Choose key A on STRA keypad to add isolate: “Streptococcus pyogenes (Group A)” List quantitation. The following canned susceptibility comment will be added: “This organism is predictably susceptible to penicillin and resistant to TMP-SMX. Susceptibility to erythromycin and clindamycin is variable” |
| Strep latex testing positive for Group A and susceptibility testing is required. | <ul style="list-style-type: none"> Choose key B on STRA keypad to add isolate: “Streptococcus pyogenes (Group A)” List quantitation. KB susceptibility panel for Streptococcus pyogenes is ordered. Report susceptibility results as per ASTM. |
| Streptococcus latex testing negative for Group A and <i>Arcanobacterium haemolyticum</i> isolated. | <ul style="list-style-type: none"> Report: “No Group A streptococcus isolated.” Report: “Arcanobacterium haemolyticum” List quantitation. Report susceptibility results as per ASTM. |

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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.
2. A throat culture positive for *Streptococcus pyogenes* does not distinguish between infection and colonization.

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 | 22 Nov 2017 | Initial Release | L. Steven |
| 2.0 | 30 Nov 2018 | Updated to include new Vitek 2 instrument | L. Steven |
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