Collection, Culture, and Interpretation of a Throat Culture Screen for Presumptive Identification of Group A Streptococci

Preanalytical Steps

Required Quality Control (QC) Before Collection and Culture

Primary Inoculation Media

- Use ONLY Selective Streptococcal Agar (SSA)
  - Maintain documentation on manufacturer’s quality control performance.
  - For each new shipment and each new lot number, document receipt date, lot number and expiration date.
  - Document any variations in the physical characteristics of the media.

- If QC fails,
  - Take corrective action; and
  - Document the action in the corrective action log.

TAXO A Disks

- Use ONLY TAXO A Disks (0.04 units bacitracin; 0.02 units bacitracin)
  - Test each new shipment and each new lot number before patient testing by using the following organisms:
    Streptococcus pyogenes ATCC 12284 (or equivalent) — Positive Control
    Streptococcus agalactiae ATCC 12386 (or equivalent) — Negative Control
  - If QC fails,
    - Take corrective action; and
    - Document the action in the corrective action log.

Specimen Handling

- Specimen Collection
  - Correct throat specimen collection is critical in recovering Group A streptococci.
  - Review correct collection technique.
  - Collect specimen with a sterile dry swab (cotton, Dacron, 
    - or calcium alginate) or a transport system.

- Specimen Labelling
  - Date.
  - Patient’s name PLUS date of birth or medical record number.

- Specimen Processing
  - Sterile dry swab: Inoculate SSA plate immediately.
  - Transport media swab: Inoculate SSA plate within manufacturer’s specified time frame.

Analytical Steps

Test Procedure

Inoculation of Agar Plate

- Use ONE SSA plate per patient.
- Label plate bottom, not cover.
  - Include patient’s first name, last name, and unique identifier.
  - Include inoculation date.
- Inoculate plate with specimen swab.
  - Cover ≤1/4 of agar surface.
- Use sterile inoculating loop to streak plate (See Diagram A).
- Apply TAXO A disk.
  - Remove one disk with clean forceps and place disk on first quadrant.
  - Do not allow the forceps to touch agar surface.

Incubation of Agar Plate

- Incubate at 35–37 °C for 24–48 hours.
- Incubate agar plates BOTTOM SIDE UP
  - DO NOT incubate agar plates cover side up.
- Examine agar plates at 24 hours; document results. Re-incubate negative agar plates for an additional 24 hours and document final results.

Test Results

- Positive: Appearance of translucent or opaque white-to-gray-colored colonies surrounded by a zone of beta hemolysis and a zone of no colony growth around the TAXO A disk.
- Negative: Colony growth up to TAXO A disk with or without beta hemolysis (See plate B).
- Questionable (Follow the full procedure as outlined in the guide for these steps.):
  - Moderate-complexity laboratories: Send any culture with questionable results to a reference laboratory for further testing.
  - High-complexity laboratories: Subculture questionable colonies with a TAXO A disk or re-test with Rapid Strep test that is FDA-approved for confirmation of Group A streptococci from cultures.

Postanalytical Steps

Report Results

- Presumptive Group A streptococci isolated (See Diagram B).
- Negative for Group A streptococci (See Diagram C).

Quality Assessment Program

- Written procedure.
- Proficiency program enrollment.
- Testing personnel training documentation
- Annual testing personnel competency documentation
- Monthly QC records review.
- Quality assessment of patient test results.