Subject: MICROBIOLOGY

Policy: ANAEROBIC CULTURES

APPROVED BY: Laboratory Director or designee
Subsidiaries: ☑ Copley Hospital ☐ Copley Woodlands ☐ Copley Terrace
Department(s): Laboratory

POLICY STATEMENT: To assure accurate testing in the Microbiology section of the Laboratory

POLICY PROVISIONS:

ANAEROBIC CULTURES

PRINCIPLE:

Anaerobic organisms are highly pathogenic and can quickly lead to tissue necrosis and death. They are very fastidious in nature and require specific environmental conditions in which to survive. Areas in the body where the oxygen tension is naturally low, bowel, abdominal cavity, abscesses, etc. is where many anaerobes are found as normal flora. Normally they are kept in balance by the presence of other aerobic and facultative anaerobic bacteria that make up the normal flora in the body.

Note: Copley Hospital Lab does not culture and evaluate specimens for anaerobic organisms. We have the capability to identify by gram morphology and presence in THIO broth any suspect anaerobic organism(s). Specimens are submitted to our reference laboratory for culture.

NORMAL FLORA:

Site dependent in the body.

PATHOGENS

Bacteroides fragilis group
Clostridium species
Cutibacterium( Propionibacterium) acnes
Peptostreptococcus
Anaerobic cocci
and others
Determining pathogenesis depends on clinical information and body site.

**SAMPLE HANDLING**

Appropriate collection of specimens is the first and an extremely significant phase in anaerobic bacteriology. Only certain methods for collection and only certain types of infectious situations are acceptable for culture. These are listed as follows:

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>METHOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Empyema</td>
<td>Thoracentesis</td>
</tr>
<tr>
<td>Lower respiratory infection</td>
<td>Percutaneous transtracheal aspiration</td>
</tr>
<tr>
<td>Any closed abscess</td>
<td>Aspiration by needle and syringe</td>
</tr>
<tr>
<td>Urine</td>
<td>Suprapubic needle aspiration of bladder</td>
</tr>
<tr>
<td>Sinus tract, uterine</td>
<td>Aspiration by needle and syringe</td>
</tr>
<tr>
<td>Cavity, deep wounds</td>
<td>Using plastic intravenous type of catheter threaded into infected site*</td>
</tr>
<tr>
<td>Tissue</td>
<td>Aseptic surgical excision</td>
</tr>
<tr>
<td>Blood</td>
<td>Routinely drawn for aerobic and anaerobic cultures</td>
</tr>
</tbody>
</table>

* After prior decontamination of surface with proper antiseptic

Unsuitable specimens for anaerobic workup:

**No swabs are accepted. Fluid or tissue are the only specimens accepted by UVMMC.**

1. Sputum collected in the usual manner.
2. Bronchoscopy specimens, unless the culture is the first step of the procedure.
3. Throat cultures.
4. Nasopharyngeal swabs and cultures.
5. Voided or urethral catheterized urine.
6. Nonloculated purulent drainage (including blind swabs of free flowing pus in or from the abdominal cavities and drainage of open surface wounds).
7. Abdominal wounds freshly contaminated with intestinal or fecal material.
8. Rectal swabs or feces.
9. Skin or subcutaneous abscesses not meticulously collected after proper surface decontamination.
10. Blindly obtained swabs of the vagina, uterine cervix, or urethra.
MATERIALS:

ANAEROBIC TRANSPORT MEDIUM SURGERY PACK – AS-914

PRINCIPLE:

Exposure to oxygen will kill anaerobic bacteria. The specimen must be inoculated immediately for optimum recovery of these pathogens. Color change of the media in the glass vial indicates the presence of oxygen. The indicator is resazurin. The indicator turns pink when exposed to oxygen and will turn to a faint blue after a while, once the cap has been tightened. The original clear color will not return.

The media in the vial is a semi-solid medium with reducing agents providing an oxygen free environment.

The tube and contents are sterile. The product is stored at room temperature (13 degrees C. to 27 degrees C.) Do not used past the expiration date.

PROCEDURE FOR COLLECTION OF BIOPSIES, TISSUE OR ASPIRATES (SWABS ARE NOT ACCEPTABLE):

1. Remove the outer wrapper and open the vial. If the specimen is being harvested in a sterile surgical area open the outer wrap and with sterile gloves take the tube to the sterile site. Quickly put the tissue in the vial and immediately close the cap. You may insert the specimen into the gel which is recommended as a way to avoid oxygen in the headspace due to the tube being open. If the specimen is a fluid or aspirate you may inject through the rubber septum (clean the septum first with an alcohol wipe).

2. Lab personnel affix the proper “send out” labels, collect and receive, and store at ambient temperature to be transported to the UVMMC lab. All “ortho” specimens (joint fluid/tissues) need the comment sticker attached to the specimen (as well as on the “batch” print-out) stating “RULE OUT C.ACNES”.

REFERENCES: Anaerobe Systems product insert and Quality Control