



Subject: MICROBIOLOGY

Policy: ANAEROBIC CULTURES

APPROVED BY: Laboratory Director or designee

Subsidiaries:  Copley Hospital  Copley Woodlands  Copley Terrace

Department(s): Laboratory

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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:

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

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\* 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 UVMCC.**

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. Nonoculated 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 use 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 UVMC 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