

BacT/Alert Blood Culture Collection

BacT/Alert Process Bottle Principle

Patient Samples are placed in disposable sterile culture bottles for continuous monitoring by BacT/Alert. Each bottle contains an internal colorimetric sensor on the bottom that detects carbon dioxide as a measure of bacterial growth. If bacteria are in the patient's blood, they will produce CO₂ and the sensor will change from blue-green to yellow. The instrument detects this increase in reflectance during testing.

- **General Information**

Media used for collection:

BacT/Alert SA (Aerobic) Bottle
BacT/Alert SN (Anaerobic) Bottle
BacT/Alert PF (Pediatric) Bottle

Media Storage:

Store all media at room temperature. Observe expiration date.

Recommended Frequency of Blood Cultures:

- Acute sepsis, meningitis, pneumonia, etc: Obtain two or three blood samples from **separate sites** before starting therapy.
- Continuous bacteremia and suspected endocarditis: Draw three samples from **separate sites** and begin therapy. If all are negative 24h later, obtain three more samples.
- Patients on antimicrobial therapy: Collect sample prior to the next dose of antibiotic.
- Fever of unknown origin: Draw two or three separate initial samples. Obtain two more samples after 24 to 36 hours.

Duration of Incubation

Maximum test time will be 5 days. Incubation time for a bottle can be changed as needed (e.g. 21 days for suspected yeast).

Specimen Volume

Adult: Up to 10ml blood or normally sterile body fluid

Pediatric: Up to 4ml blood

If only enough blood has been drawn to fill one bottle, inoculate an aerobic bottle.

- **Collection**

Specimen collection is extremely important in obtaining blood cultures. Proper skin disinfection is essential to reduce the incidence of contamination. Universal Precautions must be followed.

Skin Preparation

- After location of the vein, scrub the venipuncture site with 70% alcohol for a minimum of 30 seconds.
- Apply iodine solution (1-2% tincture of iodine) for 30 seconds in concentric circles away from the puncture site covering a circular area 1 to 2 inches in diameter.
- For patients with iodine sensitivity, cleanse with alcohol for 60 seconds.
- Allow site to air dry for 1 minute before venipuncture. Do not re-palpate the vein.

Bottle Preparation

- Inspect the bottle surface, the media, and the sensor. Ensure that the broth is clear and the sensor is intact and a blue-green color. **Do not use a bottle if the sensor is yellow, media is cloudy, or if the bottle is cracked or has been dropped.**
- Remove protective flip top overcap.
- Cleanse the rubber stopper with 70% alcohol or iodine solution. Iodine adds a visual confirmation that the stopper has been disinfected.
- Allow to dry 1 minute before inoculation.

Venipuncture and Bottle Inoculation: Using one of the following methods to obtain the sample and inoculate the bottles.

- **Needle and Syringe:** Draw appropriate amount. Directly inoculate the bottles, using the syringe markings as a guide for correct volume. Inoculate aerobic bottle first, then anaerobic bottle. Take care when inoculating bottles, in general, **do not have any air introduced from the syringe into the anaerobic bottle.**

OR

- **Direct Draw with Butterfly:** Use the BacT/Alert Adapter Cap (and insert, if needed for other blood collection tubes).
 - Connect the Adapter Cap to the luer connector of the butterfly collection set.

- Perform venipuncture. When the needle is in the vein, secure it with tape or hold in place.
 - Place Adapter Cap on the aerobic BacT/Alert culture bottle rubber stopper and press down to penetrate and obtain blood flow. Hold the Adapter Cap down on the bottle.
 - After obtaining the specified amount of blood, move the Adapter Cap from the aerobic bottle to the anaerobic bottle and continue the collection.
 - If additional blood is required for other tests, place the Adapter Insert into the Adapter Cap and snap into place. This makes the cap compatible with vacuum collection tubes.
 - After blood collection is complete, remove the Adapter Cap from the culture bottle and then remove the needle from the patient's vein.
- **Label Bottles with:** Patient's name, Medical Record #, date, time, and site used. **Take care not to cover barcode labels and lot numbers.** If laboratory labels are available, put label around bottom of the bottle not covering the barcode.
 - **Send bottles to the laboratory immediately; DO NOT REFRIGERATE.**
- **REMINDERS:**
 - Recommended blood to broth ratio is 1:5 to 1:10. As the volume of blood drawn is increased, the yield of positive cultures increases. Optimally, 20ml of blood should be drawn from adults (10ml per bottle).
 - Do not overfill the bottles, this may cause false positive readings.
 - For best volume control, mark the fill level on side of bottle prior to collection.
 - When using Adapter Caps, be sure luer is connected firmly and the needle is straight when entering and leaving the rubber stopper. Twisting or turning the bottle may increase the chance that the sheath may not retract and reseal.
 - To avoid contamination of the blood culture sample, inoculate blood culture bottles first, then fill additional blood collection tubes.
 - When labeling the bottles, do not cover barcode labels or the lot numbers.
 - A different site should be used for each culture set collected.
 - Please direct any questions to the Laboratory's Microbiology Department.