

## Blood culture collection

### Material

- Sterile gloves
- Adult or paediatric aerobic and anaerobic BacT/Alert® blood culture bottles

### Summary of BacT/Alert® Bottles for Blood Culture

| BacT/Alert® Bottles    | Colour Code of Bottle Cap | Indicated for                  |
|------------------------|---------------------------|--------------------------------|
| 1. BacT/Alert® FA Plus | Green                     | Aerobic and/or yeast culture   |
| 2. BacT/Alert® FN Plus | Orange                    | Anaerobic culture              |
| 3. BacT/Alert® PF Plus | Yellow                    | Aerobic culture for pediatrics |

- Tourniquet

Collection set (winged blood collection set)

- 2.0% chlorhexidine-alcohol or 70% alcohol swabs

### Methods

- Wash and dry hands.
- Put on sterile gloves.
- Prepare the skin for venepuncture.
- Palpate for a vein to locate the venepuncture site.
- Beginning in the centre of the area and moving outward in concentric circles, swab the site with
  - 2% chlorhexidine-70% alcohol (wait 30-60s to dry); **or**
  - 70% alcohol (wait 30-60s to dry) – for those with known reaction to chlorhexidine.
- Without repalpating for the vein, perform the venepuncture.
- Remove the cap of the blood culture bottle.
- Cleanse the septum with 70% alcohol.
- Allow to dry before inoculation.
- Adults: Inoculate **8 to 10ml** of blood into **each** blood culture bottle for adult bottles. Do not exceed 10ml per bottle. Paediatric: **0.5ml to 4ml from children** in Paediatric bottles. Do not exceed 4ml (See fill line in Picture A). Both aerobic (green or yellow capped) and anaerobic (orange capped) bottles should be directly inoculated at the bedside.
- Use the winged blood collection set with the adaptor for the BacT/Alert blood culture bottles.
- **If a syringe and needle is used instead of the winged blood collection set, there is \*no need\* to change the needle** before inoculating the bottle culture bottle. However, **avoid** holding the bottle with one hand while inserting the needle with the other, to avoid needlestick injury.
- If blood is taken for other investigations, always **inoculate the blood culture bottle first**, as other blood tubes may harbour contaminants on occasion. Inoculate aerobic (green/yellow) bottle before the anaerobic (orange) bottle.
- As the needle is removed from the patient's arm, apply pressure with a gauze pad, and ask the patient to hold the pad tightly in place for 2-3mins.
- Remove the needle from the last bottle, and discard the collection set.
- **Discard needle immediately and do not attempt to recap the needles at any point**

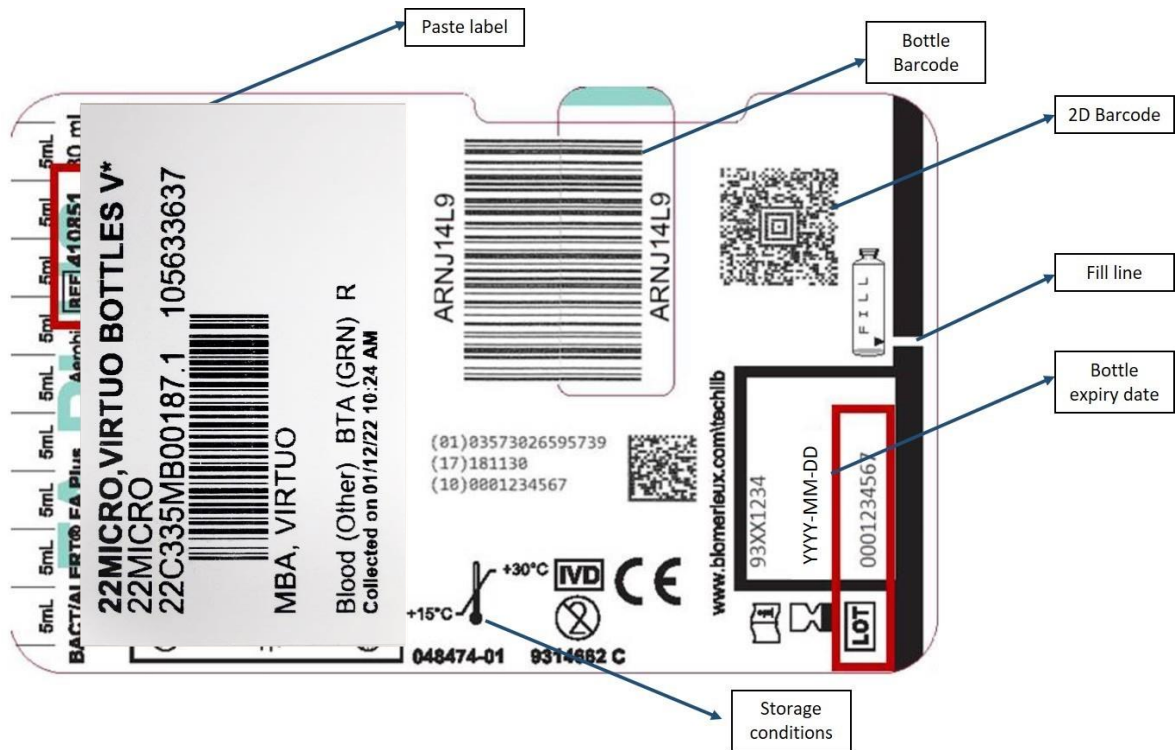
### Labelling

- Label the blood bottles with correct patient labels. The sticky label must be pasted over the bottle as shown on Picture A

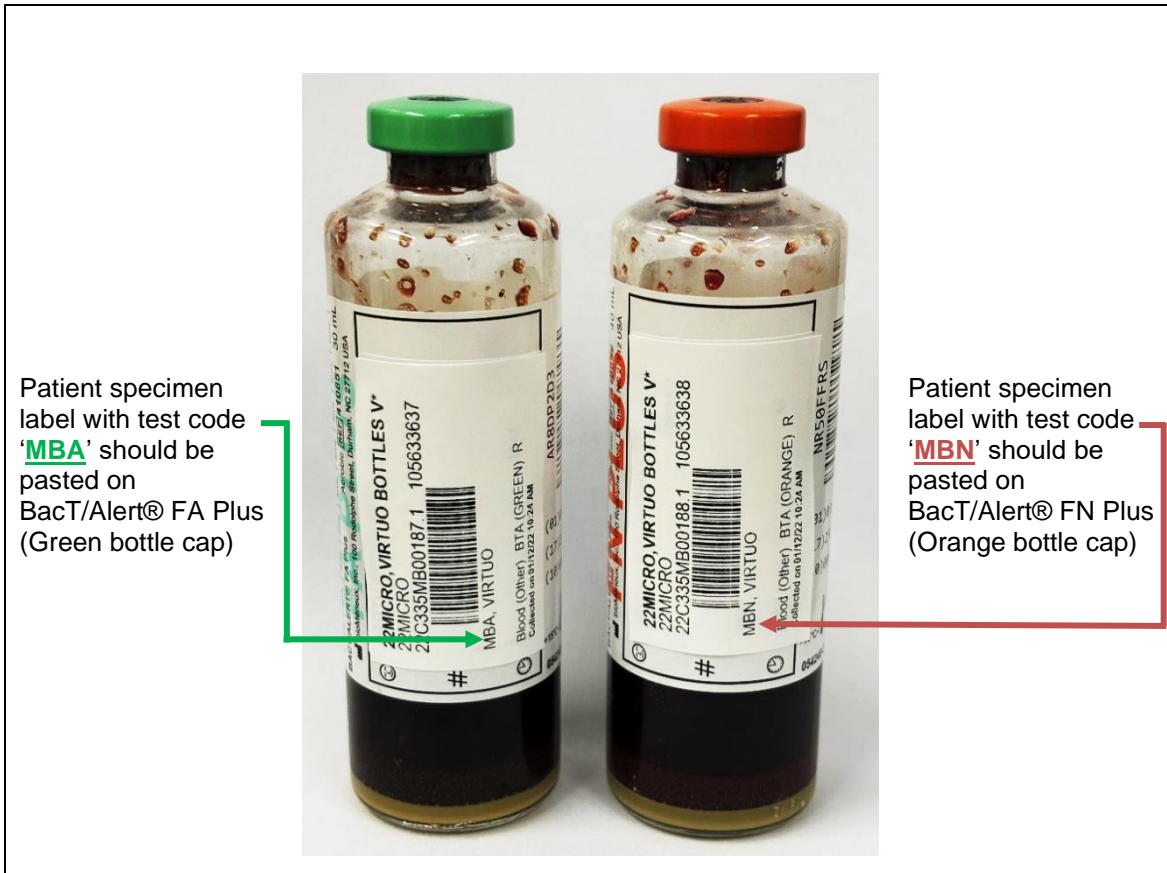
Note: The barcode of the patient label must be parallel to the bottle barcode. The patient label must be placed in between the 2 Bottle IDs. Do ensure that the label does not cover the entire bottle barcode or 2D barcode.

**PLEASE CHECK EXPIRY DATE OF THE BOTTLE (SEE PICTURE A). To avoid a blood culture bottle exceeding the use-by date during processing time, bottles which are expiring within 7 days should not be used. Please return these to Microbiology lab.**

**Picture A: Overview of labeling blood culture bottles**



**Picture B: BacT/Alert® FA Plus and FN Plus bottles with correct patient labels**



- Indicate the time of collection and the site, including any intravascular device through which it is taken.
- Note whether the patient is on antibiotics on request form.
- Include clinical details and suspected diagnosis on the request form.

**Transport**

- Do not refrigerate the specimen. Hold it at room temperature. Transport the specimen to the laboratory immediately. The laboratory is open 24hours to receive bottles for incubation.

**Timing and number of cultures**

- One set of blood cultures = One aerobic bottle (8 - 10ml blood) AND one anaerobic bottle (8 - 10ml blood)
- Blood cultures should be collected preferably before antibiotic administration; before or during a predicted fever spike; or any time sepsis is suspected.
- The volume of blood taken is more important than the timing of blood drawn – you can take 2 blood cultures within 30 mins; it is not necessary to space out the timing of

---

each blood culture, but separate sets of blood culture should be drawn from different venepuncture sites.

- Endocarditis: draw 3 culture sets from 3 different sites. If patient had been on antibiotics during the past 2 weeks, or if prosthetic valve endocarditis is suspected, draw another 3 cultures the next day.
- Intravascular infections: draw 3 culture sets. Draw two sets as a pair with one set from the suspected source (Intravascular catheter, or central intravascular line), and another set from a separate venipuncture.
- Other forms of sepsis (e.g. acute sepsis, meningitis, osteomyelitis, septic arthritis, pneumonia): draw 2-3 culture sets.

### Comments

- Blood for culture should not be withdrawn through an indwelling intravenous or intra-arterial catheter unless it cannot be obtained by venepuncture, or if line sepsis is suspected.
- A second set of cultures may help to predict the clinical significance of isolate(s).
- A single aerobic culture is acceptable for paediatric cases, only when there is insufficient blood. Do not send a single unpaired anaerobic bottle.
- Fungal blood cultures: *Candida* spp. and *Cryptococcus* spp. can grow in the usual blood culture bottles.
- For systemic fungi infection like histoplasmosis or fusariosis, please send blood in lithium heparin tube and order MBF (Blood fungal culture) instead.
- Blood culture bottle should only be stored between 15 to 30 degrees Celsius and away from direct sunlight.
- Should blood culture bottles be expired, to discard or/ return to MMD.