

Mycobacterium tuberculosis Infection Determination by QuantiFERON-TB Gold Plus: Collection and Processing Instructions for Hospitals

BLOOD COLLECTION

M. tuberculosis testing by QFT-TB Gold Plus has special collection and processing instructions. This test must be collected at UVMMC (by appointment only) or at our reference hospital laboratories.

NOTE: All collection tubes need to be at room temperature (17-27°C) at the time of draw.

1. Collect 1 ml of blood into each of the 4 QFT-Plus tubes. NOTE: There is not order of draw with the 4 tube set, however the tubes do contain heparin as the anticoagulant so tube must be collected in the proper order relative to other tube types. See Collecting a Blood Sample, for tube order of collection.
 - **Tubes fill very slowly.** Keep the tube on the needle for 2-3 seconds once the tube appears to have completed filling.
 - Use of a syringe may ensure correct blood volume, do not force or push blood into vial. If a butterfly needle is used, first collect other required tubes or use a discard tube to remove the air in the tubing and then proceed with collecting the QFT tubes.
 - These tubes are manufactured to draw 1 mL of blood and perform optimally within the range of 0.8 to 1.2 mL. If the level of blood is below or above the black indicator line the sample will be rejected and another blood specimen should be collected and submitted.
2. Immediately after tubes are filled rock tubes by bending your arm at the elbow and rocking your hand up and down for **5 seconds** (10 times).
 - Ensure entire inner surface of the tubes is coated with blood.
 - Over-energetic shaking may cause gel disruption and could lead to aberrant results.
 - Thorough mixing is required to ensure complete integration of the tube's contents into the blood.
3. Label tubes with at least 2 patient identifiers. The label should be placed below the colored Quantiferon band so the back window and black marks are visible on all 4 collection tubes
4. Maintain tubes at room temperature (17-27°C) until incubation. Do not refrigerate or freeze
5. Incubation of the 4 tubes must be started within 16 hours of collection.

INCUBATION AND CENTRIFUGATION

NOTES: The following types of specimens will be rejected unless prior arrangements have been made with the UVMMC laboratory:

- Not incubated
- Not centrifuged

(Continued on page 2)

- Incubation in waterbath or heat block.

1. Incubate all 4 QFT-Plus tubes upright in a dry incubator at $37^{\circ}\text{C} \pm 1^{\circ}\text{C}$ for 16 to 24 hours. If there is a delay following collection, remix the tubes by inverting for 5 seconds (10 times) immediately prior to incubation. Humidity and CO_2 is not required.
2. Following incubation centrifuge the tubes for 15 minutes at 2,000-3,000 RCF (g) in a swing bucket centrifuge to ensure that the gel lies flat in the tube.
 - Hemolyzed plasma is acceptable.
 - If unable to centrifuge immediately, the tubes may be held at $4 - 27^{\circ}\text{C}$ up to 3 days.
3. Place all 4 QFT-Plus tubes together in the supplied QFT Transport Bag (supplied).
4. Store refrigerated at $2-8^{\circ}\text{C}$ until forwarded to the UVMHC laboratory. Samples are stable 28 days refrigerated following incubation and centrifugation.

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REFERENCE

QuantiFERON-TB Gold Plus (QFT-Plus) Blood Collection Tubes Package Insert, QIAGEN, 19300 Germantown Road, Germantown, MD 20874, 1095852, Rev. 02, August 2017.

