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## General Information

- The QuantiFERON®-TB Gold Plus (QTF-Plus) assay requires the following four blood collection tubes:
  - QuantiFERON Nil Tube (grey cap)
  - QuantiFERON TB1 Tube (green cap)
  - QuantiFERON TB2 Tube (yellow cap)
  - QuantiFERON Mitogen Tube (purple cap)
- Unused QTF-Plus blood collection tubes can be stored at 4°C to 25°C, but should always be between 17°C to 25°C at the time of blood filling.
- Never use QTF-Plus blood collection tubes after the expiry date printed on the tube label.
- Antigens have been dried onto the inner wall of the QTF-Plus blood collection tubes so it is essential that the contents of the tubes be thoroughly mixed with blood.
- After collection, the QTF-Plus blood collection tubes must be maintained and transported at room temperature (22°C ± 5°C) and must be transferred to a 37°C ± 1°C incubator as soon as possible and within 16 hours of collection.
- Please note that the NMRS-S does NOT accept non-incubated nor frozen blood samples.
- Blood samples must reach the NMRS-S within 72 hours post incubation.

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## Blood Collection and Handling Procedure

The following procedure should be followed for optimal results:

1. For each patient collect 1 ml of blood by venipuncture directly into each of the QTF-Plus blood collection tubes. (Important note: tubes should be between 17°C to 25°C at the time of blood filling.)
  - As 1 ml tubes draw blood relatively slowly, keep the tube on the needle for 2-3 seconds once the tube appears to have completed filling to ensure that the correct volume is drawn.
  - The black mark on the side of the tubes indicates the validated range of 0.8 to 1.2 ml. If the level of blood in any tube is outside the range of the indicator mark, a new blood sample should be obtained.
  - If a "butterfly needle" is being used to collect blood, a "purge" tube should be used to ensure that the tubing is filled with blood prior to the QTF-Plus tubes being used.
2. Immediately after filling the tubes, mix the tubes by inverting them 10 times ensuring that the entire inner surface of the tube has been coated with blood. This will dissolve antigens on the tube walls. (Important note: tubes should be between 17°C to 25°C at the time of mixing.)
3. Label all tubes with following information:
  - Patient forename and surname
  - Patient date of birth
  - Patient hospital number
  - Date and time of blood collection
  - Name of individual collecting the blood samples
4. After blood collection and mixing, maintain the tubes in an upright position in a rack at room temperature (22°C ± 5°C). Do NOT refrigerate or freeze blood samples.
5. Transfer the blood collection tubes to a 37°C ± 1°C incubator (CO<sub>2</sub> and humidification not required) as soon as possible and within 16 hours of collection. The tubes must be incubated for 16 to 24 hours in an upright position.

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## Transportation Requirements

- After 16 to 24 hours of incubation, ship the QTF-Plus blood samples to the NMRS-S un-centrifuged.
- Please ensure that the samples are packaged appropriately. For more information refer to the NMRS-S User Manual found at <https://www.gov.uk/government/publications/national-mycobacterium-reference-laboratory-nmri-user-manual>).
- All QTF-Plus blood samples must be accompanied by a QuantiFERON®-TB Gold Plus request form (N4) found at <https://www.gov.uk/government/publications/quantiferon-tb-gold-test-request-form>. Please ensure that all requested information has been included on the request form and that the tubes have been marked as incubated.
- Blood samples must be shipped at 4°C to 27°C and must be received by the NMRS-S within 72 hours post incubation. Please note that the NMRS-S is closed on weekends and bank holidays.

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