TECHNICAL NOTICE
THE MEDICAL FOUNDATION

QantiFERON®-TB Test ● Conversion to QuantiFERON®-TB Gold PLUS

Notification Date: 26 Mar 2018
Effective Date: 01 May 2018

The South Bend Medical Foundation (SBMF) will offer a new version of QFT testing with the goal to increase the sensitivity of the assay for detection of both active disease and latent infection.

New Test Code: 30182 (QuantiFERON-TB Gold Plus)……Effective Date: May 1, 2018
This test has simplified collection instructions

Current QFT-Gold and New QFT-Plus
The new QFT-Plus assay includes TB peptide antigens to stimulate both CD4-and CD8-positive T cells while the current QFT-Gold assay contains TB peptide antigens which can only stimulate CD4 T cells. Evidence now supports a role for $CD8^+$ T-cells in host defense against *M tuberculosis* infection. As a result of this change the current QFT-Gold assay has 3 tubes (Nil, TB, and Mitogen tubes), while the new QFT-Plus assay has 4 tubes (Nil, TB1, TB2, and Mitogen Tubes), in which the TB1 tube contains the antigens to stimulate $CD4^+$ T-cell response and the TB2 tube contains antigens for stimulation of both $CD4^+$ and $CD8^+$ T-cell responses. The mitogen and nil tubes are identical between the two tests. As a reminder, the mitogen tube contains phytohemaglutanin, which serves as a positive control for T-cell activity, while the nil tube essentially measures the level of background or circulating Intra FERON-gamma in the patient. Early observations indicate that in active TB infection the levels of TB1 and TB2 and the difference of TB1-TB2 are generally higher than the results obtained from latent TB infection.

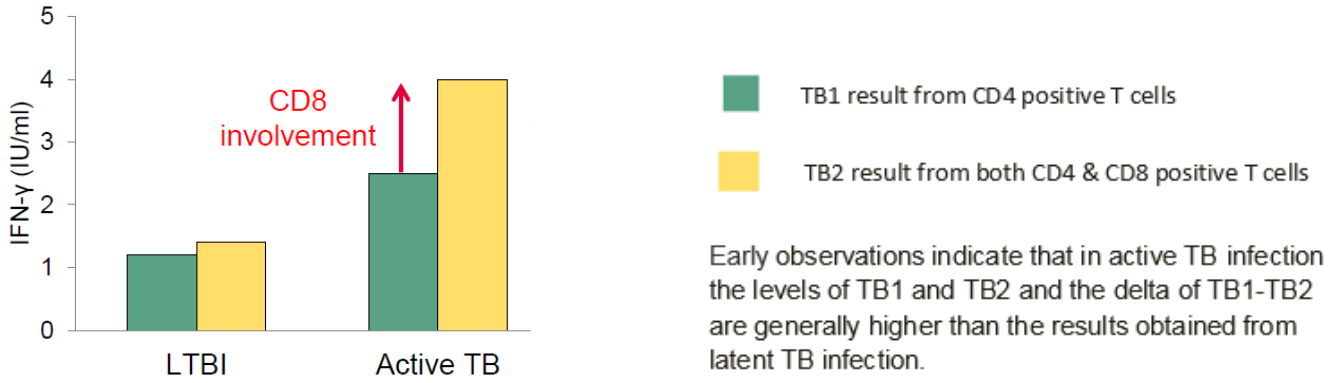

Fig. 1 TB1 and TB2 results generated from latent TB infection (LTBI) and active TB

QFT-Plus: Result Reporting
In terms of result calculation, qualitative cutoff values, and result interpretation, the QFT-Plus is identical to the current QFT-Gold assay, with the key exception that the results for both TB1 and TB2 antigen tubes will be reported and if either one or both of the QFT-Plus TB antigen tubes are equal to or greater than 0.35 IU/mL and are at least 25% of the nil tube values, the patient is considered positive.

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Joyce Simpson, M.D. • *Medical Director*

QFT-Plus: Result Interpretation
A single positive result by this test should not be used solely to diagnose latent tuberculosis (TB). Results should be used in conjunction with risk assessment, radiography, and other medical and diagnostic evaluations.

Result	*Interpretation*
TB Positive:	Interferon that is used to identify in vitro response to M. Tuberculosis associated peptide antigens was **DETECTED**. It indicates that M. Tuberculosis infection is LIKELY. The magnitude of the measured interferon level cannot be correlated to stage or degree of infection, level of immune responsiveness, or likelihood of progression of active disease. Positive results in patients at low-risk for TB should be interpreted with caution and repeat testing on a new sample should be considered as recommended by the 2017 ATS/IDSA/CDC Clinical Practice Guidelines for Diagnosis of Tuberculosis in Adults and Children. (1) False-positive results may occur in patients with prior infection with *M marinum*, *M szulgai*, or *M kansasii*.
TB Negative:	Interferon that is used to identify in vitro response to M. Tuberculosis associated peptide antigens was **NOT DETECTED**. It indicates that M. Tuberculosis infection is NOT likely but cannot be excluded, especially when illness is consistent with TB disease and likelihood of progression to TB disease is increased. In patients at high risk for *M tuberculosis* infection, a second test should be considered in accordance with the 2017 ATS/IDSA/CDC Clinical Practice Guidelines for Diagnosis of Tuberculosis in Adults and Children.(1)
TB Indeterminate	The result is indeterminate due to either low mitogen or high background response. The likely hood of M. Tuberculosis infection cannot be determined. Repeat testing on a new specimen is suggested.

QFT-Plus Specimen Collection
Another key difference between the two QuantiFERON versions is that for the QFT-Plus test, whole blood can be collected into a single lithium heparin-tube, which can then be aliquoted into the four separate tubes at SBMF's Central Laboratory. See Collection, Storage and Handling instructions at the end of this notice.

Next Steps for Clients

- Begin using the new order code and collection instructions May 1, 2018.
- Complete your conversion to the new test as soon as possible after May 1st. The current test is being discontinued by the manufacturer and supplies are limited.
- Return current 3-tube collection kits to SBMF after May 1st (*ATTN: Stockroom).*
- Read new sample collection storage and handling instructions attached to this notice.

References

1. Lewinsohn DM, Leonard MK, LoBue PA, et al: Official American Thoracic Society/Infectious Diseases Society of America/Centers for Disease Control and Prevention Clinical Practice Guidelines: Diagnosis of Tuberculosis in Adults and Children. Clin Infect Dis 2017 Jan 15;64(2):e1-e33

2. Moon HA, Gaur RL, Tien SS, et al: Evaluation of QuantiFERON-TB Gold Plus in Health Care Workers in a Low-Incidence Setting. J Clin Micobiol 2017;55(6):1650-1657

3. Telisinghe L, Amofa-Sekyi M, Maluzi K, et al: The sensitivity of the QuantiFERON-TB Gold Plus assay in Zambian adults with active tuberculosis. Int J Tuberc Lung Dis 2017;21(6):690-696

TMF online Test Directory

Questions: Please contact **CLIENT SERVICES 800-950-7263**, Qing Li, PhD, qli@sbmf.org
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Technical Notices and Lab Alerts are distributed electronically.
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