T-SPOT. TB

Test Code 906927 | CPT* Code 86481

• Antigen stimulation is performed on a normalized cell suspension comprised of a significantly reduced inhibitory granulocyte population, as opposed to whole blood.²

• A cell washing step enables removal of plasma and potentially interfering substances that may inhibit interferon-gamma release.³,⁴,⁵

• Cells are counted to allow for an adjustment in cell concentration to correct for variations in patient cell counts, minimizing the risk of false-negative or invalid results due to abnormal patient cell counts.

THE SCIENCE BEHIND THE T-SPOT. TB TEST

1. Whole blood Isolated cells

A blood specimen is collected using routine phlebotomy and a standard blood collection tube from which a subset of white blood cells, known as peripheral blood mononuclear cells, are isolated. The cells are washed, counted and normalized to create a standard cell suspension.

2. ESAT-6 and CFP10 antigens Washed PBMC Interferon-gamma

A standard number of cells are added into specially designed plates and stimulated with TB-specific antigens, ESAT-6 and CFP10. Cells responding to these antigens release interferon-gamma.

3. Secondary labeled antibody Captured interferon-gamma

Interferon-gamma antibodies are used to directly capture interferon-gamma as it is released by the cells. A secondary labeled antibody is added and binds to the captured interferon-gamma.

4. Spots produced where interferon-gamma was released

A detection reagent is added and reacts with the secondary labeled antibody. This reaction produces spots, which are a footprint of where the interferon-gamma was released. Spots are then enumerated.
INTERPRETATION OF RESULTS

- Interferon-gamma is captured and presented as spots from T cells sensitized to TB infection.

- Results are interpreted by subtracting the spot count in the negative (NIL) control from the spot count in Panels A and B.
  - Positive ≥ 8 spots
  - Negative ≤ 4 spots
  - Borderline 5, 6 or 7 spots
  - Invalid

- The inclusion of a borderline category is intended to reduce the likelihood of false-positive or false-negative results around the test cut-off.

Note: It is recommended that borderline and invalid results be retested with a new specimen.

SPECIMEN REQUIREMENTS

- One room temperature 9 mL Green-Top for T-Spot tube (supply # 38235).

- Collect Monday – Friday after 10 a.m. ONLY**. Do not collect on holidays or weekends.

- Do not spin or centrifuge samples. Do not refrigerate or freeze. Place sample in separate bag and apply the neon green T-Spot label provided with your tubes to the outside of the specimen transport bag or tube.

- Lockbox use is not recommended, however, if necessary, configure the ice packs in an a-frame or lean-to formation.

CONSISTENT DIAGNOSTIC RESULTS

- Sensitivity and specificity exceeding 95% provides reliable detection of TB infection, even in patients with weakened immune systems.

- Low invalid rates, even in immunocompromised patients, ensures only a few repeat tests are necessary.

REFERENCES:


* The CPT codes provided are based on AMA guidelines and are for informational purposes only. CPT coding is the sole responsibility of the billing party. Please direct any questions regarding coding to the payor being billed.

** Some Sonora Quest Patient Service Centers can facilitate specimen collection prior to 10 a.m. for this testing. Please refer to the specimen requirements for this test on https://www.sonoraquest.com/test-directory/ for details.