M. tuberculosis complex

Monoplex

Tuberculosis is a contagious, chronic and granulomatous disease caused by *M. tuberculosis*. This disease was declared in 1993 as a "global health emergency" due to its magnitude as a public health problem.

Infection occurs through the inhalation of aerosols that contain the pathogen and are transmitted by people with active pulmonary tuberculosis. After inhalation, the bacteria deposit in the alveoli and spread through the lymphatic circulation. Further dissemination to other parts of the lung and occasionally to other organs is achieved through hematogenous circulation.

The most common form of the disease is pulmonary tuberculosis, although tuberculous meningitis, miliary tuberculosis (disseminated), intestinal tuberculosis, lymphadenitis, osteomyelitis and Pott's disease (affected bones) also occur. Primary infection leads to active disease in approximately 10% of infected people and in 80% of cases in the period of two years. In the remaining 90%, the immune system controls the infection and the individual is not infectious or asymptomatic.

It is estimated that one third of the world population has latent tuberculosis; that is, these people are infected with the bacillus, but (still) have not become ill or can transmit the infection. In this clinical state, TB bacilli can remain inactive for years (latent TB). However, when the immune system weakens, the latent infection can be reactivated. In a person infected with HIV, the risk of reactivation of latent TB is more than 10% per year, compared to a lifetime risk of 10-20% for HIV negative people.

When the active form of the disease occurs, the symptoms (cough, fever, night sweats, weight loss, etc.) can be mild for many months. As a result, patients sometimes take time to seek medical attention and transmit the bacteria to others. Over a year, a tubercular patient can infect 10 to 15 people through close contact. If they do not receive the appropriate treatment, up to two thirds of the tubercular patients die.

M. tuberculosis complex

VIASURE *M. tuberculosis complex* Real Time PCR Detection Kit is designed for the diagnosis of Tuberculosis caused by M. tuberculosis complex strains in clinical samples.

After DNA isolation, the detection of M. tuberculosis complex strains is performed by the amplification of regions of the insertion sequence IS6110 and IS1081 using specific primers and fluorescent-labeled probes.

Analytical sensitivity

VIASURE *M. tuberculosis complex* Real Time PCR Detection Kit has a detection limit of ≥10 DNA copies per reaction (Figure 1).

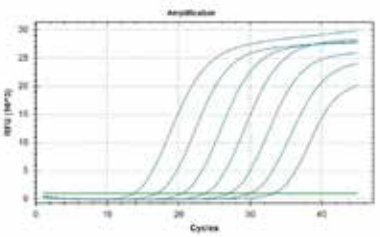

Figure 1.
Dilution series of Insertion sequences IS6110 and IS1081 (107-101 copies/rxn) template run on the Bio-Rad CFX96™ Real-Time PCR Detection System (FAM channel).

Figure 1.

Available kit. ▶▶

VIASURE *M. tuberculosis complex* Real Time PCR Detection Kit contains in each well all the components necessary for real time PCR assay (specific primers/probes, dNTPS, buffer, polymerase) in a stabilized format, as well as an internal control to monitor PCR inhibition. The Insertion sequences IS6110 and IS1081 are amplified and detected in FAM channel and the internal control (IC) in HEX, VIC or JOE channel (depending on the equipment used select the proper detection channel).

References:

VIASURE *M. tuberculosis complex* Real Time PCR Detection Kit:

6 x 8-well strips, low profile	VS-MTC106L
6 x 8-well strips, high profile	VS-MTC106H
12 x 8-well strips, low profile	VS-MTC112L
12 x 8-well strips, high profile	VS-MTC112H
96-well plate, low profile	VS-MTC113L
96-well plate, high profile	VS-MTC113H
9 x 4-well strips, Rotor-Gene®	VS-MTC136
18 x 4-well strips, Rotor-Gene®	VS-MTC172

CerTest BIOTEC

For more information and use procedure, read the instructions for use included in this product.

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