



## HIV-1 DNA Test PRO

Molecular test for the detection and quantification of HIV-1 DNA in human blood

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HIV infection has been transformed over the past decades from a lethal disease to a manageable chronic condition thanks to the advent of combination antiretroviral therapy (ART).

Treatment with antiretroviral drugs is effective in suppressing replication of the virus, however this treatment cannot eliminate a population of infected white blood cells that contain copies of the virus's genetic material within their own genomes. Persistence of the virus depends on the long-term survival of these cells which constitute the HIV reservoir.



The evolution of HIV-1 infection can be evaluated by measuring total cell-associated HIV-1 DNA, that is the most widely used marker to estimate the size of HIV reservoir in infected cells.

The HIV DNA provides an overall quantification of all viral forms of HIV-1 DNA: stable integrated proviruses and extrachromosomal forms, including both circular (1-LTR and 2-LTR) and linear forms, each playing a different role in HIV replication and pathophysiology.

The evaluation of this marker at different stages in the history of infection can help clinicians to choose the best therapeutic strategies and to control the progression of HIV infection.

Moreover HIV-1 proviral DNA detection is indicated for HIV diagnosis in infants born to infected mothers below 2-years of age: serology may remain positive due to passive transfer of antibodies through placenta. The detection of proviral DNA is a sensitive and specific way of diagnosing HIV infection and is a very useful adjunct test in the context of primary infection in those with negative or indeterminate serology.

The HIV-1 DNA Test PRO is intended for the qualitative and quantitative detection of HIV-1 DNA using real-time PCR that is to date the most sensitive and reproducible technology for the monitoring of HIV-1 persistence in infected cells. HIV-1 DNA Test PRO allows the simultaneous amplification of HIV DNA and human Telomerase Reverse Transcriptase (hTERT). The endogenous gene allows to verify DNA extraction success, to determine the presence of PCR inhibitors and to obtain HIV DNA copies without cellular DNA quantification.

#### Field of application

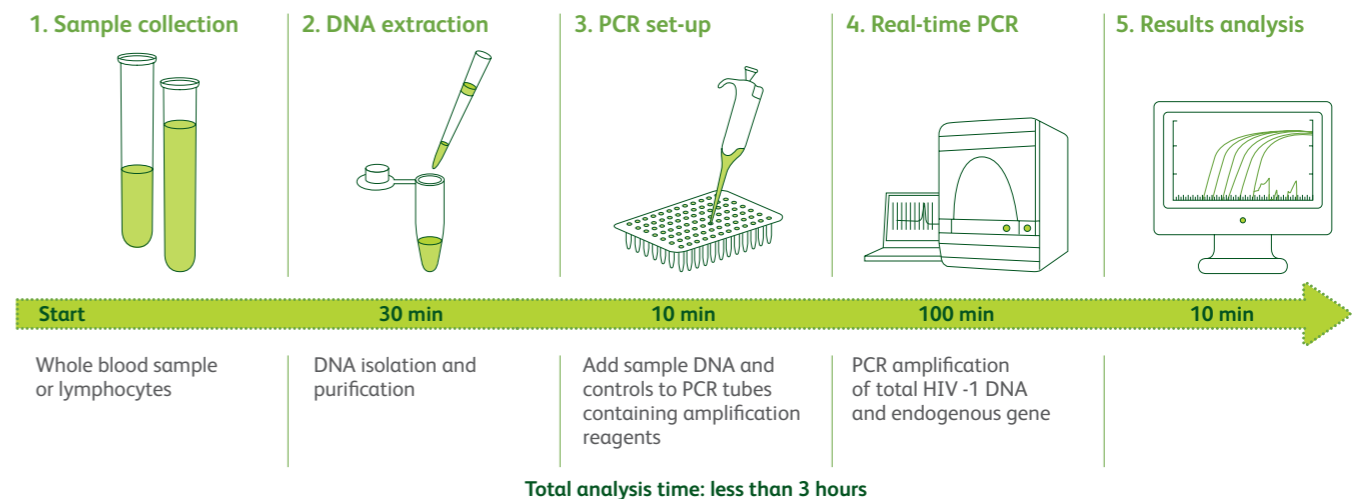
##### Quantitative test

- Evaluation and study of HIV-1 reservoir
- Predicting the failure of antiretroviral therapy at an early stage
- Monitoring and refining therapeutic strategies

##### Qualitative test

- Diagnosis of HIV in mother-to-child transmission cases
- Diagnosis of early HIV-1 infection

## Workflow



#### Benefits

**Superior performance** Accurate detection and quantification of HIV-1 DNA using an amplification mix with a technology that neutralizes a broad spectrum of PCR inhibitors that compromise assay performance with whole blood

**Reliability** The amplification of the endogenous gene hTERT reveals the presence of inhibitory factors in the sample

**Compatibility** Highly consistent results on various real-time cyclers in terms of sensitivity, reproducibility and efficiency

**Ease of use** Minimal hands-on time

**Speed** Less than 3 hours from sample to result

**Convenience** PCR mix and standard curve ready to use. DNA quantification is not necessary to obtain HIV-1 DNA copies because of the endogenous gene amplification.

#### Technical specifications

Type of samples	Whole blood or lymphocytes
Target gene	LTR (HIV gene) hTERT (endogenous gene)
Limit of quantification	5 HIV-1 DNA copies/PCR well 34 HIV-1 DNA copies/10 <sup>6</sup> cells
Limit of detection	4 HIV-1 DNA copies/PCR well 27 HIV-1 DNA copies/10 <sup>6</sup> cells
Linear range	5 - 50 000 HIV-1 DNA copies/PCR well
Internal Control in each sample	Detects the presence of inhibitors in the sample allowing to check the validity of negative results and to guarantee the accuracy of DNA quantification
Thermal cycler compatibility	Require qPCR cycler with filter sets for FAM™ and VIC/HEX/JOE dyes

#### Ordering information

Code	Product	Size
MBK0086-32T	HIV-1 DNA Test	32 Tests
MBK0086	HIV-1 DNA Test	96 Tests
MBK0087-32T	HIV-1 DNA Test PRO	32 Tests
MBK0087	HIV-1 DNA Test PRO	96 Tests