HIV1 Molecular Test
HIV1 Detection • Viral Load Measurement
Early Diagnosis • Better Clinical Management
Human Immunodeficiency Virus Type-I Testing

HIV-I affects human immune system and reduces the ability of immune system to fight against pathogenic infections, this condition is called as Acquired Immuno-Deficiency Syndrome (AIDS). HIV is a slowly replicating retrovirus, responsible for infection throughout the world. HIV shows high genetic variability.

These virus infect vital cells of the human immune system such as helper T cells (CD4+), macrophages and dendritic cells. It reduces the level of CD4+ T cells in body by direct viral killing of infected cells and self destruction of CD4+ T cells. When CD4+ T cell numbers decline below a critical level, cell-mediated immunity is lost, and the body becomes progressively more sensitive to infections.

AIDS is a chronic, potentially life-threatening condition caused by prolonged HIV infection. There's no cure for HIV/AIDS, but there are medications that can dramatically slow the progression of the disease.

HIV-I Clinical Testing

HIV infection test is for screening, diagnosis and management of HIV infection in patients. HIV testing is strongly recommended for:

- Individuals who are recently diagnosed with HIV-1 infection.
- Individuals who are in the clinically latent period of the HIV -I infection and are not receiving Anti-Retro viral Therapy (ART).
- Individuals who are receiving Anti-Retro viral Therapy.

Different types of testing facilities are available to check HIV infection in patients. The most common test is ELISA which looks for antibodies that the body specifically makes in response to the HIV virus. It is primary test to confirm HIV antigen and antibody in patients. The molecular HIV test looks for the HIV virus itself (often called an HIV RNA or viral load). This test will detect the HIV virus and become positive shortly after infection (as early as 5 days), so it is an important test for diagnosing patients that are recently infected with HIV virus.

Why go for molecular testing?

High Specificity and Precision: Molecular testing can detect and measure presence of minimal residual gene mutation or protein associated with disease condition which cannot be done by conventional biochemical testing, thus reveals precise cause of disease.

High sensitivity and accuracy: Molecular testing can determine minimum viral load in the sample up to lacs of virus copies that nullifies the chances of false positive or false negative results, thereby reducing chances of incorrect diagnosis.

Early diagnosis and efficacy: Molecular diagnosis can detect disease at early stage which helps clinicians to monitor the progression of disease and determine effective drug therapy for the patient.
**Real Time PCR for Detection & Viral Load Measurement**

Currently RT PCR method is used for detection of viral load and provides information on number of HIV-I RNA copies/ml in the sample of patient. This result indicates the stage and seriousness of disease condition. At Xcelris Labs, we use artus HI Virus-1 RG RT-PCR Kit on QIAsymphony platform latest technology to measure viral load i.e. notify RNA copies in HIV-I positive samples. It is fully automated system right from sample preparation to assay set up and sample testing. The analytical detection limit of artus HI Virus-1 RG RT-PCR Kit with the Rotor-Gene® Q is approximately 34 copies/ml. The detection range for this test is 34 copies to 45 lacs viral copies/ml. (Reference: artus HI Virus-1 RG RT-PCR Kit)

**Test Methodology**

- Sample procurement (Plasma sample at -20 degree)
- Subject sample to QIAsymphony instrument
  - Automated RNA extraction
  - Purification of Nucleic acids
  - artus HIV-1 RG RT-PCR assay
  - Detection of HIV-1
  - Detection of viral load (If ordered)
- Final Report

**Fully automated process on QIAsymphony**

**Importance of Molecular testing in HIV Infection**

Conventional testing methods like Enzyme Immunoassay or Western Blot only gives confirmation of infection. Before treatment initiation, it is important to know viral load (HIV RNA copies) in HIV positive patients. This test measures the amount of virus in your blood. The viral load in sample provides information on the risk of disease progression and establishes a baseline for assessing the effect of Anti-Retro viral Treatment. After treatment is initiated, a primary goal is to decrease the viral load below the limits of detection (LODs) of the available assays within 12 to 24 weeks. Thereafter, viral load measurement is useful in assessing the continuing effectiveness of therapy. This makes molecular test of HIV-I infection as one of the most important part of therapeutic regime.
Sample Requirement: 5-8ml isolated plasma sample

Specimen Handling: Deep freeze the sample until shipment.

Note: Samples from heparinized humans must not be used.

Transport:
Isolated plasma samples should be shipped to Xcelris labs in labeled polypropylene tubes at -20 degree.

Unacceptable conditions:
Plasma samples shipped below -20 degree or received at room temperature will be unacceptable.

Turn Around Time: 3-4 working days after receiving of sample at our lab.

How to Order Test?:
You can order test with following product code

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<tr>
<th>IDHV05</th>
<th>IDHVQ05</th>
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<tbody>
<tr>
<td>Confirmation Test</td>
<td>Viral Load Test</td>
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Contact our Local Representative or email us at diagnostics@xcelrislabs.com

About Xcelris
Xcelris is one of the leading genomic research organizations and service provider offering cutting edge solutions to the life science industry and research institutions.
Xcelris Molecular Diagnostics (XMDx) offers clinical testing services based on Real time PCR, Sequencing and Microarray technology using latest state of art platforms. Xcelris Labs provides genetic testing for cancer, inherited disorders, drug response screening and molecular testing for infectious diseases.
At Xcelris, we believe that Next Generation Sequencing Technology will be a break through in the diagnostic segments by which clinicians will be able to track diseases at early stages, making clinical management more effective and easy.