Hepatitis B Virus Molecular Test

HBV Detection • Viral Load Measurement

Early Diagnosis • Better Clinical Management
HBV - Hepatitis B Virus

HBV causes viral infections that attacks the liver and causes both acute and chronic Hepatitis B which leads to development of jaundice, liver failure and liver cancer. Hepatitis B virus primarily interferes with the functions of the liver by replicating in liver cells (hepatocytes).

Transmission of hepatitis B virus results from exposure to infectious blood. Possible forms of transmission include unprotected sex, blood transfusions and transfusion with other human blood products, re use of contaminated needles and syringes and vertical transmission from mother to child (MTCT) during childbirth. Hepatitis B virus can be spread to other people even if you have no symptoms.

Hepatitis B and Health

Acute infection with hepatitis B virus is associated with acute viral hepatitis an illness that begins with general ill-health, loss of appetite, nausea, vomiting, body aches, mild fever and dark urine, and then progresses to development of jaundice. Chronic hepatitis B is a long-lasting infection with the hepatitis B virus. Chronic hepatitis B occurs when the body cannot get rid of the hepatitis B virus. It is an asymptomatic condition which revealed at later stages when signs of liver damage appears.

Hepatitis B Virus clinical testing

Detection of hepatitis B virus infection involve blood test that detects either viral antigens (proteins produced by the virus) or antibodies produced by the host. HBV testing is done after sometime of infection. Clinical testing is carried out using conventional methods like Immunoassay (IA) that identifies various antiviral antibodies in sample. HBV testing is strongly recommended for:

- Individuals who has got liver infection previously.
- Individuals who has got severe jaundice.
- Individuals who has family history of Hepatitis B infection.

Persistence of Hepatitis B surface antigen for greater than 6 months is an indicator of chronic Hepatitis B infection. Molecular HBV test looks for the HBV virus itself (often called an HBV DNA or viral load). This test will detect the hepatitis B virus and become positive after some time of infection, so it is an important test for diagnosing patients with any HBV infection.

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. RT PCR results provides information on number of HBV-DNA copies/ml in the sample. This results indicates the stage and seriousness of disease condition. At Xcelris Labs, we use artus HBV RG PCR Kit on QIAsymphony platform to measure viral load i.e. notify DNA copies in HBV positive patient sample. It is fully automated system right from sample preparation to assay set up and sample testing. The analytical detection limit of the artus HBV RG PCR Kit in combination with the Rotor-Gene system is 10 IU/ml. The detection range for this test is 10 IU/ml to 200 lacs IU/ml.

**Test Methodology**

1. **Sample procurement (Plasma sample at -20 degree)**
2. Subject sample to QIAsymphony instrument
3. Automated DNA extraction
4. Purification of Nucleic acids
5. Artus HBV RG RT PCR Kit
6. Detection of HBV
7. Detection of viral load (If ordered)

Fully automated process on QIAsymphony

Final Report

Importance of Molecular testing in HBV infection
Conventional methods like immunoassay(I) gives only confirmation of HBV infection. It is important to get quantitative values about copies of hepatitis B virus before initiation of treatment for chronic HBV infection. This test measures the amount of virus present in the blood. The viral load in sample provides information about the risk of disease progression and establishes a baseline for assessing the effect of Anti-Retroviral treatment and further monitors response to therapy. It predicts likelihood of response to therapy and also resistant variants during antiviral therapy. Viral quantity of HBV by Real-Time PCR will determine if there is sufficient virus to perform the resistance test.
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

IDHB05 Confirmation Test
IDHBQ05 Viral Load Test

Contact our Local Representative or email us at diagnostics@xcelrislabs.com

Contact Details
Name: .......................................................... Mobile: ..............................................

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.