4th Generation HBsAg Detection Kit

Based on Direct sandwich principle

Detects all known 11 sub-types of HBV and also mutant strains

Analytical Sensitivity: 0.05 ng/ml

Ready to use conjugate

Easy Interpretation of results

Long Shelf Life 12 months. Storage at 2-8°C

Excellent Specificity

Available packsize: 96 Tests
Hepatitis B: An Introduction

Hepatitis B is a potentially life-threatening liver infection caused by the hepatitis B virus. Originally known as “serum hepatitis. It is a major global health problem and the most serious type of viral hepatitis. It can cause chronic liver disease and puts people at high risk of death from cirrhosis of the liver and liver cancer. Worldwide, an estimated two billion people have been infected with the hepatitis B virus (HBV), and more than 350 million have chronic (long-term) liver infections. The disease has caused epidemics in parts of Asia and Africa.

HBV: The silent Killer

Hepatitis B virus (HBV) is a member of the Hepadnavirus family. The Virus consists of an outer lipid envelope, core and DNA polymerase. The genetic material is partially double stranded DNA. The outer envelope contains embedded proteins which are involved in viral binding of, and entry into, susceptible cells. The outer surface of the virus is composed of lipid and protein, which is called the surface antigen (HBsAg), and is produced in excess during the life cycle of the virus.

The virus is divided into 4 major serotypes (adr, adw, ayr, ayw) based on antigenic epitopes present on its envelopes proteins. Due to variation in ‘w’ determinant, 11 subtypes are formed. There are 8 genotypes (A-H) according to overall nucleotide sequence variation of the genome.

HBsAg: An Ideal Marker

The diagnosis of Hepatitis B virus (HBV) infection was revolutionized by the discovery of Australian antigen, now called Hepatitis B Surface Antigen (HBsAg).

- It is first detected during HBV infection before appearance of symptoms.
- It is the most reliable & universal marker of HBV infection.
- It persists for more than 6 months in carrier & chronic state also produced in large quantities.
- HBsAg carries a highly antigenic determinant. Hence it is also used to make Hepatitis B vaccine.
**Test Procedure**

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add Sample Diluent</td>
<td>25 µl</td>
</tr>
<tr>
<td>Add Controls &amp; Sample</td>
<td>100 µl</td>
</tr>
<tr>
<td>Cover the Plate and Incubate</td>
<td>60 Minutes at 37°C</td>
</tr>
<tr>
<td>Add enzyme conjugate (Ready to use)</td>
<td>50 µl</td>
</tr>
<tr>
<td>Cover the Plate and Incubate</td>
<td>60 min. at 37°C</td>
</tr>
<tr>
<td>Wash</td>
<td>6 Cycles</td>
</tr>
<tr>
<td>Prepare Chromogenic Substrate</td>
<td>No. of strips: 1 2 3 4 5 6 7 8 9 10 11 12</td>
</tr>
<tr>
<td>Add Working Substrate</td>
<td>100 µl</td>
</tr>
<tr>
<td>Incubate in Dark</td>
<td>30 min. at room temperature</td>
</tr>
<tr>
<td>Add Stop Solution</td>
<td>100 µl</td>
</tr>
<tr>
<td>Read Results</td>
<td>450 nm / 630 nm</td>
</tr>
</tbody>
</table>

**Key Facts about Hepatitis-B**

- Hepatitis B is a viral infection that attacks the liver and can cause both acute and chronic disease.
- The virus is transmitted through contact with the blood or other body fluids of an infected person - not through casual contact.
- About 2 billion people worldwide have been infected with the virus and about 350 million live with chronic infection. An estimated 600,000 persons die each year due to the acute or chronic consequences of hepatitis B.
- About 25% of adults who become chronically infected during childhood later die from liver cancer or cirrhosis (scarring of the liver) caused by the chronic infection.
- The hepatitis B virus is 50 to 100 times more infectious than HIV. Hepatitis B virus is an dangerous occupational hazard for health workers.
- Highest incidence of the disease is in the age group 20-49.
- HBV can survive outside the body at least 7 days and still be capable of causing infection.

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