

TEST: HEPATITIS B SURFACE ANTIBODY (HBsAB)

PRINCIPLE:

Viral hepatitis is a major public health problem of global importance with an estimated 300 million persistent carriers of HBV worldwide. Infection with HBV results in a wide spectrum of acute and chronic liver diseases that may lead to cirrhosis and hepatocellular carcinoma.

HBV infection produces an array of unique antigens and antibody responses that, in general follow distinct serological patterns. Hepatitis B surface antigen (HBsAg), derived from the viral envelope, is the first antigen to appear following infection. The development of neutralizing anti-HBs occurs in 90% of patients infected with HBV and is associated with resolution of the infection and protective immunity.

Individuals who have resolved their HBV infection usually demonstrate both anti-HBs and antibody to hepatitis B core antigen (anti-HBc) in their serum. The absence of both anti-HBs and anti-HBc is indicative of susceptibility to HBV infection, and can identify individuals who may benefit from vaccination.

Both plasma derived and recombinant protein based vaccines have been developed and shown to be effective in inducing immunity to HBV through production of antibodies to HBsAg. Anti-HBs testing is useful for identifying HBV susceptible individuals in pre- and post-vaccination screening programs.

A variety of standard immunological techniques have been used for the detection of anti-HBs including immuno-diffusion, "sandwich" immuno-radiometry, electroimmuno-osmophoresis, and passive agglutination, or agglutination inhibition. The more recent solid phase "sandwich" enzyme-labeled immunoassays provide a rapid, specific, and highly sensitive test system for the measurement of anti-HBs.

SPECIMEN REQUIREMENTS:

2 ml serum collected in a red top tube with no additive or in a serum separator tube (gel barrier). Serum should be separated from the clot as soon as possible to avoid hemolysis. Store at 2-8°C for 48 hours. Store frozen at -20°C if not tested within 48 hours. Avoid repeat freeze-thaw cycles.

METHOD: Enhanced Chemiluminence

REFERENCES:

1. Maynard JE. et al. In Zuckermann AJ. (ed), *Viral Hepatitis and Liver Disease*. New York: Alan R. Liss Inc; 1988; 967-969.
2. Beasley RP, Hwang L. In Vyas GN. (ed), *Viral Hepatitis and Liver Disease*. New York: Grune & Stratton; 1984; 209-224.
3. Specter S. Hepatitis B Vaccines. In Specter S. (ed), *Viral Hepatitis, Diagnosis, Therapy and Prevention*. Totowa, NJ: Humana Press; 1999; 377-391.

Normal Range:

0-1000 mIU/ml

Turnaround Time: 1 day