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**TEST: HEPATITIS B SURFACE ANTIGEN (HBsAg)**

**PRINCIPLE:**

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

Viral hepatitis is a disease of the liver that is caused by a number of well-characterized viruses including HBV. Transmission of HBV occurs by percutaneous exposure to blood products and contaminated instruments, sexual contact and perinatally from HBV-infected mothers to their unborn child.

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 and can be detected serologically as an aid in the laboratory diagnosis of acute HBV infection.

Detection of HBsAg by sensitive enzyme immunoassays was described by Engvall and Perlmann, Engvall, Jonsson and Perlmann, and VanWeemen and Schuurs in 1971. Subsequently, solid-phase sandwich enzyme immunoassays for the detection of HBsAg were described by Wisdom, Wolters et al, and Wei et al. Production, characterization and application of monoclonal antibodies for the detection of HBsAg have also been described.

**SPECIMEN COLLECTION AND PREPARATION**

2ml 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:**

Enzyme Linked Immunosorbent Assay (ELISA).

**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: Non-reactive**

**Turnaround time: One Week**