



Hep B sAg (1025): sc-53300

BACKGROUND

Hep B (Hepatitis B) virus is a member the Hepadnavirus family that causes an inflammation of the liver, vomiting, jaundice and, sometimes, death. Hep B infection is associated with a 100-fold increased risk of hepatocellular carcinoma and currently infects over 250 million people worldwide. Hep B is one of the small number of known non-retroviral viruses that replicate their genome using reverse transcription. Hep B has a partially double stranded 3.2 kilobase DNA genome which contains four open reading frames, one of which encodes a 154 amino acid protein called the HBx protein. Hep B sAg (Hep B surface antigen) is a protein antigen produced by the Hep B virus. When in the blood, Hep B sAg is one of the earliest markers of infection with Hep B, appearing even before symptoms occur.

REFERENCES

1. Aden, D.P., et al. 1979. Controlled synthesis of HBsAg in a differentiated human liver carcinoma-derived cell line. *Nature* 282: 615-616.
2. Courouce-Pauty, A.M., et al. 1983. Distribution of HBsAg subtypes in the world. *Vox Sang.* 44: 197-211.
3. Sun, T.T., et al. 1986. A pilot study on universal immunization of newborn infants in an area of hepatitis B virus and primary hepatocellular carcinoma prevalence with a low dose of hepatitis B vaccine. *J. Cell. Physiol. Suppl.* 4: 83-90.
4. Samuel, D., et al. 1991. Passive immunoprophylaxis after liver transplantation in HBsAg-positive patients. *Lancet* 337: 813-815.
5. Liaw, Y.F., et al. 1991. Incidence, determinants and significance of delayed clearance of serum HBsAg in chronic hepatitis B virus infection: a prospective study. *Hepatology* 13: 627-631.
6. McMahon, G., et al. 1992. Genetic alterations in the gene encoding the major HBsAg: DNA and immunological analysis of recurrent HBsAg derived from monoclonal antibody-treated liver transplant patients. *Hepatology* 15: 757-766.
7. Wachs, M.E., et al. 1995. The risk of transmission of hepatitis B from HBsAg⁻, HBcAb⁺, HBIGM⁻ organ donors. *Transplantation* 59: 230-234.
8. Chisari, F.V. and Ferrari, C. 1995. Hepatitis B virus immunopathogenesis. *Annu. Rev. Immunol.* 13: 29-60.
9. Waters, J.A., et al. 1998. A study of the antigenicity and immunogenicity of a new hepatitis B vaccine using a panel of monoclonal antibodies. *J. Med. Virol.* 54: 1-6.

SOURCE

Hep B sAg (1025) is a mouse monoclonal antibody raised against recombinant Hep B sAg.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Hep B sAg (1025) is recommended for detection of surface antigen of Hep B by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000).

Molecular Weight of Hep B sAg: 28 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™
 Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

SELECT PRODUCT CITATIONS

1. Cui, H., et al. 2016. Effect of hepatitis B virus infection on trophoblast cell line (HTR-8/SVneo) and choriocarcinoma cell line (JEG3) is linked to CD133-2 (AC141) expression. *Am. J. Transl. Res.* 8: 3235-3240.
2. Chen, H., et al. 2020. Hepatocyte endoplasmic reticulum stress inhibits hepatitis B virus secretion and delays intracellular hepatitis B virus clearance after entecavir treatment. *Front. Med.* 7: 589040.
3. Lim, H.Y., et al. 2022. Tumor suppressor p53 inhibits hepatitis B virus replication by downregulating HBx via E6AP-mediated proteasomal degradation in human hepatocellular carcinoma cell lines. *Viruses* 14: 2313.
4. Yoon, H., et al. 2022. Hepatitis B virus X protein stimulates hepatitis C virus (HCV) replication by protecting HCV core protein from E6AP-mediated proteasomal degradation. *Microbiol. Spectr.* 10: e0143222.
5. Han, J. and Jang, K.L. 2023. All-trans retinoic acid inhibits hepatitis B virus replication by downregulating HBx levels via siah-1-mediated proteasomal degradation. *Viruses* 15: 1456.
6. Yoon, H., et al. 2023. Hydrogen peroxide inhibits hepatitis B virus replication by downregulating HBx levels via Siah-1-mediated proteasomal degradation in human hepatoma cells. *Int. J. Mol. Sci.* 24: 13354.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.



See **Hep B sAg (1023): sc-53299** for Hep B sAg antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.