

Hep B cAg (C1): sc-52410

BACKGROUND

Hepatitis B virus is a member of a member of the *Hepadnavirus* family that causes an inflammation of the liver, vomiting, jaundice and, sometimes, death. Hepatitis B is one of the small number of known non-retroviral viruses that replicate their genome using reverse transcription. Three major antigens make up different parts of the hepatitis B virus (HBV): surface antigen (HBsAg), an envelope glycoprotein found as membranous aggregates in the sera of individuals infected with HBV; e antigen (HBeAg), which is typically associated with much higher rates of viral replication; and core antigen (HBcAg), which encloses the viral genome and makes up the assembled and unassembled variants of the capsid protein. HBcAg and HBeAg are used primarily in HBV diagnosis, whereas HBsAg is used for HBV prevention in vaccines. Hepatitis B viral antigens are primarily expressed in liver.

REFERENCES

1. Bichko, V., Schodel, F., Nassal, M., Gren, E., Berzinsh, I., Borisova, G., Miska, S., Peterson, D.L., Gren, E., Pushko, P., et al. 1993. Epitopes recognized by antibodies to denatured core protein of hepatitis B virus. *Mol. Immunol.* 30: 221-231.
2. Skrivelis, V., Steinberg, Y., Bichko, V., Gren, E. and Tsimanis, A. 1993. The structure of the variable regions of mouse monoclonal antibodies to hepatitis B virus core antigen. *Scand. J. Immunol.* 37: 637-643.
3. Pushko, P., Sallberg, M., Borisova, G., Ruden, U., Bichko, V., Wahren, B., Pumpens, P. and Magnusius, L. 1994. Identification of hepatitis B virus core protein regions exposed or internalized at the surface of HBcAg particles by scanning with monoclonal antibodies. *Virology* 202: 912-920.
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5. Cao, T., Meuleman, P., Desombere, I., Sallberg, M. and Leroux-Roels, G. 2001. *In vivo* inhibition of anti-hepatitis B virus core antigen (HBcAg) immunoglobulin G production by HBcAg-specific CD4⁺ Th1-type T cell clones in a hu-PBL-NOD/SCID mouse model. *J. Virol.* 75: 11449-11456.
6. Szkaradkiewicz, A., Jopek, A., Wysocki, J., Grzymislawski, M., Malecka, I. and Wozniak, A. 2003. HBcAg-specific cytokine production by CD4 T lymphocytes of children with acute and chronic hepatitis B. *Virus Res.* 97: 127-133.
7. Le Pogam, S., Chua, P.K., Newman, M. and Shih, C. 2005. Exposure of RNA templates and encapsidation of spliced viral RNA are influenced by the arginine-rich domain of human hepatitis B virus core antigen (HBcAg 165-173). *J. Virol.* 79: 1871-1887.

SOURCE

Hep B cAg (C1) is a mouse monoclonal antibody raised against Hep B cAg.

STORAGE

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

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Hep B cAg (C1) is available conjugated to fluorescein (sc-52410 FITC), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

APPLICATIONS

Hep B cAg (C1) is recommended for the detection of an epitope corresponding to amino acids 74-80 of the core antigen of Hep B origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); may cross-react with denatured Hep B cAg.

Molecular Weight of Hep B cAg: 21 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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

SELECT PRODUCT CITATIONS

1. Choi, Y.M., Kim, H., Lee, S.A., Lee, S.Y. and Kim, B.J. 2020. A telomerase-derived peptide exerts an anti-hepatitis B virus effect via mitochondrial DNA stress-dependent type I interferon production. *Front. Immunol.* 11: 652.

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 cAg (C1-5): sc-23945** for Hep B cAg antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.