SANTA CRUZ BIOTECHNOLOGY, INC.

Hep B cAg (C1-5): sc-23945

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Hep B (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. Hep 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 Hep B Virus (HBV). These three include: surface antigen (Hep B sAg), an envelope glycoprotein found as membranous aggregates in the sera of individuals infected with HBV; and e-antigen (Hep B eAg), which is typically associated with much higher rates of viral replication; and core antigen (Hep B cAg), which encloses the viral genome and makes up the assembled and unassembled variants of the capsid protein. Hep B cAg and Hep B eAg are used primarily in HBV diagnosis, whereas Hep B sAg is used for HBV prevention in vaccines. Hep B viral antigens are primarily expressed in liver.

REFERENCES

1. Bichko, V., et al. 1993. Epitopes recognized by antibodies to denatured core protein of hepatitis B virus. Mol. Immunol. 30: 221-231.
2. Skrivelis, V., et al. 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., et al. 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.

SOURCE

Hep B cAg (C1-5) is a mouse monoclonal antibody raised against Hep B cAg.

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 (C1-5) is available conjugated to agarose (sc-23945 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-23945 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-23945 PE), fluorescein (sc-23945 FITC), Alexa Fluor® 488 (sc-23945 AF488), Alexa Fluor® 546 (sc-23945 AF546), Alexa Fluor® 594 (sc-23945 AF594) or Alexa Fluor® 647 (sc-23945 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-23945 AF680) or Alexa Fluor® 790 (sc-23945 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

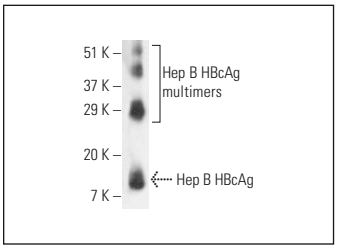
Hep B cAg (C1-5) is recommended for detection of an epitope corresponding to amino acids 74-80 of the core antigen of Hep B origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), flow cytometry (1 µg per 1 x 10^6 cells) 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.

STORAGE

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

DATA



Hep B HBcAg (C1-5): sc-23945. Western blot analysis of human recombinant Hep B HBcAg. Note presence of Hep B cAg dimers, trimers and tetramers at multiples of 14 kDa.

SELECT PRODUCT CITATIONS

1. Fernandez, A.F., et al. 2009. The dynamic DNA methylomes of double-stranded DNA viruses associated with human cancer. Genome Res. 19: 438-451.
2. Guo, Y.H., et al. 2011. HBc binds to the CpG islands of HBV cccDNA and promotes an epigenetic permissive state. Epigenetics 6: 720-726.
3. Seeger, C. and Sohn, J.A. 2014. Targeting hepatitis B virus with CRISPR/ Cas9. Mol. Ther. Nucleic Acids 3: e216.
4. Seeger, C. and Sohn, J.A. 2016. Complete spectrum of CRISPR/Cas9-induced mutations on HBV cccDNA. Mol. Ther. 24: 1258-1266.
5. Ko, H.L., et al. 2019. HNF4α combinatorial isoform heterodimers activate distinct gene targets that differ from their corresponding homodimers. Cell Rep. 26: 2549-2557.e3.
6. Luo, J., et al. 2020. Involvement of host ATR-Chk1 pathway in hepatitis B virus covalently closed circular DNA formation. mBio 11: e03423-19.
7. Yu, H.B., et al. 2021. SIRT7 restricts HBV transcription and replication through catalyzing desuccinylation of Histone H3 associated with cccDNA minichromosome. Clin. Sci. 135: 1505-1522.
8. Lucifora, J., et al. 2021. Evidence for long-term association of virion-delivered HBV core protein with cccDNA independently of viral protein production. JHEP Rep. 3: 100330.
9. Zhang, X., et al. 2022. A polysaccharide from *Eupolyphaga sinensis* walker with anti-HBV activities *in vitro* and *in vivo.* Front. Pharmacol. 13: 827128.
10. Kostyushev, D., et al. 2023. Depleting hepatitis B virus relaxed circular DNA is necessary for resolution of infection by CRISPR-Cas9. Mol. Ther. Nucleic Acids 31: 482-493.

RESEARCH USE

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