SANTA CRUZ BIOTECHNOLOGY, INC.

Hep B xAg (X36C): sc-57760

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The Power to Question

BACKGROUND

Hep B (hepatitus B) virus is a member of the Hepadnavirus family that causes an inflammation of the liver, vomiting, jaundice and, sometimes, death. Three major antigens make up different parts of the Hep B virus (HBV): surface antigen (Hep B sAg), an envelope glycoprotein found as membranous aggregates in the sera of individuals infected with HBV; 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. Hep B xAg represents the Hep B virus X protein which contributes to human hepatocellular carcinoma metastasis by the upregulation of matrix metalloproteinases.

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.
4. Naoumov, N.V., et al. 1997. Differentiation of core gene products of the hepatitis B virus in infected liver tissue using monoclonal antibodies. J. Med. Virol. 53: 127-138.

SOURCE

Hep B xAg (X36C) is a mouse monoclonal antibody raised against baculovirus expressed recombinant Hep B xAg.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Hep B xAg (X36C) is available conjugated to agarose (sc-57760 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-57760 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-57760 PE), fluorescein (sc-57760 FITC), Alexa Fluor® 488 (sc-57760 AF488), Alexa Fluor® 546 (sc-57760 AF546), Alexa Fluor® 594 (sc-57760 AF594) or Alexa Fluor® 647 (sc-57760 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-57760 AF680) or Alexa Fluor® 790 (sc-57760 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

Hep B xAg (X36C) is recommended for detection of x-antigen of Hep B origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Molecular Weight of Hep B xAg: 17 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).

SELECT PRODUCT CITATIONS

1. Yang, S.L., et al. 2014. Hepatitis B virus X protein disrupts the balance of the expression of circadian rhythm genes in hepatocellular carcinoma. Oncol. Lett. 8: 2715-2720.
2. Wu, Y.H., et al. 2015. c-Jun N-terminal kinase inhibitor favors transforming growth factor-β to antagonize hepatitis B virus X protein-induced cell growth promotion in hepatocellular carcinoma. Mol. Med. Rep. 13: 1345-1352.
3. Shi, X., et al. 2016. Interleukin-33-induced immune tolerance is associated with the imbalance of memory and naïve T-lymphocyte subsets. Mol. Med. Rep. 14: 4837-4843.
4. Yang, S.L., et al. 2017. Hepatitis B virus X protein and hypoxia-inducible factor-1α stimulate Notch gene expression in liver cancer cells. Oncol. Rep. 37: 348-356.
5. Yang, S.L., et al. 2018. Hepatitis B virus upregulates GP73 expression by activating the HIF-2α signaling pathway. Oncol. Lett. 15: 5264-5270.
6. Liu, W., et al. 2019. Repression of death receptor-mediated apoptosis of hepatocytes by hepatitis B virus e antigen. Am. J. Pathol. 189: 2181-2195.
7. Ye, Y., et al. 2019. SIP1 serves a role in HBx-induced liver cancer growth and metastasis. Int. J. Oncol. 55: 1019-1032.
8. Wan, H., et al. 2020. 3,4,5-Tri-O-caffeoylquinic acid methyl ester isolated from *Lonicera japonica Thunb.* flower buds facilitates hepatitis B virus replication in Hep G2.2.15 cells. Food Chem. Toxicol. 138: 111250.
9. Yoon, H. and Jang, K.L. 2022. Hepatitis B virus X protein and hepatitis C virus core protein cooperate to repress E-cadherin expression via DNA methylation. Heliyon 8: e09881.
10. Sozzi, V., et al. 2022. The *in vitro* replication phenotype of hepatitis B virus (HBV) splice variant Sp1. Virology 574: 65-70.

RESEARCH USE

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