SANTA CRUZ BIOTECHNOLOGY, INC.

# Hep B xAg (X36C): sc-57760

## 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. 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.
8. 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.
9. Sozzi, V., et al. 2022. The *in vitro* replication phenotype of hepatitis B virus (HBV) splice variant Sp1. Virology 574: 65-70.
10. Li, H., et al. 2023. Secreted LRPAP1 binds and triggers IFNAR1 degradation to facilitate virus evasion from cellular innate immunity. Signal Transduct. Target. Ther. 8: 374.


## RESEARCH USE

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