

Cat # RP-456

Recombinant Hepatitis B Virus x

Size: 5 ug

25 ug

Introduction:

Hepatitis B virus X protein (HBx) is a 17 kD transcriptional coactivator that plays a significant role in the regulation of genes involved in inflammation and cell survival. It regulates many transcription factors including nuclear factor kappa B (NF-kappaB) and plays a key role in hepatocarcinogenesis. rHBx facilitates the binding of cAMP response element binding protein (CREB) to its responsive element. rHBx stabilizes the cellular coactivator ASC-2 through direct protein-protein interaction, affecting the regulation of genes actively transcribed in liver cancer cells. HBx transactivates both JNK and MAPK signal transduction pathways in association with the mobilization of cytosolic Ca²⁺. The communication between HBx and general transcription factor TFIIB is also one of the mechanisms which account for its transcriptional transactivation. HBx decreased the expression of PTEN a known tumor suppressor and a negative regulator of phosphatidylinositol 3'-kinase/AKT and HBx decreased the expression of PTEN in HBx-transfected cells. The etiology of hepatocellular carcinoma (HCC) is involved with hepatitis B virus (HBV) infection and HBx in particular plays a role in the development of HBV-related HCC. The persistence of HBx is important to the pathogenesis of early HCC and HBx expression in the liver during chronic HBV infection may be an important prognostic marker for the development of HCC.

Description:

17 kDa protein containing 154 amino acid residues.
MAARVCCQLD PARDVLCLRP VGAESRGRP V SGPFGTL PSP
SSSAVPADHG AHLRLRGLPV CAFSSAGPCA LRFTSARRME
TTVNAHQVLP KVLHKRTLGL SAMSTTDLEA YFKDCLFKDW
EELGEEIRLK VFVLGGCRHK LVCSPAPCNFF TSA

Specificity:

The amino acid sequence of the recombinant HBx is 100% homologous to amino acid sequence of the native HBx.

Purification Method:

Two-step procedure using size exclusion chromatography before and after refolding.

Source:

E.coli

Purity:

95% (SDS-PAGE analyzed).

Formulation:

Sterile filtered and lyophilized from 0.5 mg/ml in 0.05 M Acetate buffer pH4 Reconstitution: Add 0.2 ml of 0.1M Acetate buffer pH4 and let the lyophilized pellet dissolve completely. For conversion into higher pH value, we recommend intensive dilution by relevant buffer to a concentration of 10µg/ml. In higher concentrations the solubility of this antigen is limited.

Storage:

Store lyophilized protein at -20°C. Reconstituted protein can be stored at 4°C for a limited period of time; it does not show any change after two weeks at 4°C. If supplied in powder then reconstitute it in 100 ul water for 1 mg/ml stock and store in liquid at 4°C for ~1 week or aliquots in suitable size and store at -20°C for long term storage..

Stability/Shelf Life:

The lyophilized protein remains stable until the expiry date when stored at -20°C.

Applications:

Western blotting, ELISA

References:

- Hwang GY, Lin CY, Huang LM, Wang YH, Wang JC, Hsu CT, Yang SS, Wu CC. Detection of the hepatitis B virus X protein (HBx) antigen and anti-HBx antibodies in cases of human hepatocellular carcinoma. J Clin Microbiol. 2003 Dec; 41(12): 5598-603.
- Song CZ, Bai ZL, Song CC, Wang QW. Aggregate formation of hepatitis B virus X protein affects cell cycle and apoptosis. World J Gastroenterol. 2003 Jul; 9(7): 1521-4.
- Tralhao JG, Roudier J, Morosan S, Giannini C, Tu H, Goulenok C, Carnot F, Zavala F, Joulin V, Kremsdorf D, Brechot C. Paracrine in vivo inhibitory effects of hepatitis B virus X protein (HBx) on liver cell proliferation: an alternative mechanism of HBx-related pathogenesis. Proc Natl Acad Sci U S A. 2002 May 14; 99(10): 6991-6.
- Madden CR, Slagle BL. Stimulation of cellular proliferation by hepatitis B virus X protein. Dis Markers. 2001; 17(3): 153-7. Review.
- Arbuthnot P, Kew M. Hepatitis B virus and hepatocellular carcinoma. Int J Exp Pathol. 2001 Apr; 82(2): 77-100. Review

Usage:

This item is for LABORATORY RESEARCH USE ONLY. The product may not be used as drugs, agricultural or pesticidal products, food additives or household chemicals.

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