



LD Biopharma, Inc.
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- PRODUCT DATA SHEET -

Name of Product: Recombinant **sfGFP-HBxAg -11R** Fusion Protein
Catalog Number: VRP-3454
Manufacturer: LD Biopharma, Inc. USA

Introduction

HBx gene encodes a 17-kDa viral protein (HBxAg) that plays an essential role in the HBV replication cycle. It was recently determined that a key function of HBxAg is to promote the degradation of the cellular structural maintenance of chromosomes 5/6 complex (Smc5/6). Smc5/6 directly binds DNA, and has been shown to topologically entrap DNA plasmids. As such, HBxAg is a potential therapeutic target since it promotes the degradation of the hepatocyte Smc5/6 complex that inhibits HBV transcription.

Full-length HBxAg cDNA (153aa, derived from Adw2 subtype) was constructed with codon optimization gene synthesis and expressed with SuperGFP protein as N-terminal (sfGFP; 257aa) fusion domain and 11 Poly-Arginine (11R) tag at its C-terminal in *E.coli* as inclusion bodies. The final product was refolded using our unique “temperature shift inclusion body refolding” technology and chromatographically purified.

Gene Symbol: HBxAg
Accession Number: AAK97176.1
Species: Viral
Size: 50 µg / Vial
Composition: 2.0 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, Sucrose, DTT and others.
Storage: In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 30 days.

Key References

Mark Feitelson, et al. *Hepatitis B virus x antigen in the pathogenesis of chronic infections and the development of HCC.* [American Journal Of Pathology](#) 150(4):1141-57. (1997)



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Kornyeyev D, et al., *Spatiotemporal analysis of hepatitis B virus X protein in primary human hepatocytes*. J Virol 93:e00248-19.
<https://doi.org/10.1128/JVI.00248-19>. (2019)

Decorsiere A, et al., *Hepatitis B virus X protein identifies the Smc5/6 complex as a host restriction factor*. Nature 531:386 -389.
<https://doi.org/10.1038/nature17170>. (2016)

Applications

1. May be used for in vitro HBxAg protein mediated signal regulation for hepatocytes study using intracellular delivery of recombinant sfGFP-HBxAg-11R protein directly by adding protein into cell culture medium.
2. May be used for HBxAg protein-protein interaction assay.
3. May be used as specific substrate protein for HBxAg specific kinase, and ubiquitin (Sumo pathway) related enzyme functional screening assays.
4. Potential therapeutic protein, by blocking HBxAg / host target protein interactions may be a useful strategy to control HBV replication or preventing liver cancer.

Quality Control

Purity: > 92 % by SDS-PAGE.

sfGFP protein: **Ex λ** = 485nm, and **Em λ** = 510nm.

Recombinant sfGFP- HBxAg-11R Fusion Protein Sequence (48.9 kD)

MKHHHHHHQVSKGEEELFTGVVPIILVELDGDVNGHKFSVRGEGEGDATNGKLTTLKFICTTGKLPVPWPTLV
TTLTYGVQCFSRYDPDHMKRHDFFKSAMPEGYVQERTISFKDDGTYKTRAEVKFEGDTLVNRIELKGIDFK
EDGNILGHKLEYNFNHNHYITADKQKNGIKANFKIRHNVEDGSVQLADHYQQNTPIGDGPVLLPDNHYL
STQSVLSKDPNEKRDMVLLFVTAAGITHGMDELYKSGLSGGSGGENLYFQGSEFAARLYCQLDPSR
DVLCLRPVGAESRGRPFSGPLGTLSSPSPSAVPADHGAHLSLRRLPVCAFSSAGPCTLRFTSAR
CME'VVNAHQILPKVLHKRTLGLSAMSTTDLEAYFKDCVFKDWEELGEEIRLKVFLVGGCRHKL
VCAPAPCNFFTSAESGGGGSPGRRRRRRRRRRR