



**LD Biopharma, Inc.**  
7384 Trade Street, Suite B  
San Diego, CA 92121  
Tel: 858-876-8266  
<http://www.ldbiopharma.com>

## - PRODUCT DATA SHEET -

**Name of Product:** Recombinant CFP-**HBxAg** Fusion Protein  
**Catalog Number:** VRP-3452  
**Manufacturer:** LD Biopharma, Inc. USA

### Introduction

HBxAg gene encodes a 17-kDa viral protein 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 CFP protein as N-terminal (CFP; 262aa) fusion partner 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:** 1.0 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 CFP-HBxAg protein with protein delivery reagent such as ProFectin.
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.
5. As native HBxAg antigen for its specific antibody production.

## Quality Control

Purity: > 92 % by SDS-PAGE.

CFP protein: **Ex λ** = 435nm, and **Em λ** = 477nm.

## Recombinant **CFP**- HBxAg Fusion Protein Sequence (47.0 kD)

MK**HHHHHH**QVSKGEELFGGIVPILVELEGDVNGHKFSVSGEGEGDATYGKLTCLKFICTTGKLPV  
PWPTLVTTLTWGVQCFSRYPDHMKQHDFKSVMEPEGYVQERTIFFKDDGNYKTRAEVKFEGDTL  
VNRIELKGI~~DFKEDGNI~~LGHKLENYIISHNVYITADKQKNGIKANFKARHNI TDGSVQLADHYQ  
QNTPIGDGPVILPDNHYLSTQSALS~~KDPNEKRDH~~MVLLFVTAAGITHGMDELYKVTSGSPGLQ  
EFGTGS**ENLYFQGEF**AARLYCQLDPSRDVLC~~LRPVGAESRGRPF~~SGPLGTLSSPSPSAVPADHG  
**AHLSLRRLPVCAFSSAGPCTLRFTSARC**METTVNAHQILPKVLHKRTLGLSAMSTTDLEAYFKD  
CVFKDWEELGEEIRLKVFLGGCRHKLVCAPAPCNFF**TTSA**