



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

- PRODUCT DATA SHEET -

Name of Product: Recombinant Human PBX1 Protein
Catalog Number: HTF-1907
Manufacturer: LD Biopharma, Inc. USA

Introduction

Human pre-B-cell leukemia transcription Factor 1 (PBX1) gene encodes a nuclear protein that belongs to the PBX homeobox family of transcriptional factors. It binds the sequence 5'-ATCAATCAA-3'. PBX1 acts as a transcriptional activator of PF4 in complex with MEIS1. It converted into a potent transcriptional activator by the (1;19) translocation. PBX1 may have a role in steroidogenesis and, subsequently, sexual development and differentiation. Isoform **PBXb1** as part of a PDX1:PBX1b:MEIS2b complex in pancreatic acinar cells is involved in the transcriptional activation of the ELA1 enhancer; the complex binds to the enhancer B element and cooperates with the transcription factor 1 complex (PTF1) bound to the enhancer A element. Probably in complex with MEIS2, is involved in transcriptional regulation by KLF4. PBX1 acts as a transcriptional activator of NKX2-5 and a transcriptional repressor of CDKN2B. Together with NKX2-5, it is required for spleen development through a mechanism that involves CDKN2B repression.

Full-length human PBX1 cDNA (429aa. Isoform-1) was constructed with codon optimization using gene synthesis technology and expressed with a small T7-His-TEV cleavage site Tag (29aa) fusion at its N-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:	PBX1	(CAKUHEd)
Accession Number:	NP_002576.1	
Species:	Human	
Size:	30 µg / Vial	
Composition:	0.3 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, DTT, Sucrose and others.	
Storage:	In liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least two weeks.	

Key References



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Golonzhka O, et al., *Pbx Regulates Patterning of the Cerebral Cortex in Progenitors and Postmitotic Neurons*. Neuron 88 (6), 1192-1207 (2015)

AUFeng Y, et al., *Hematopoietic pre-B cell leukemia transcription factor interacting protein is overexpressed in gastric cancer and promotes gastric cancer cell proliferation, migration, and invasion* Cancer Sci. 106 (10), 1313-1322 (2015)

Magnani L, et al., *The pioneer factor PBX1 is a novel driver of metastatic progression in ERalpha-positive breast cancer*. Oncotarget 6 (26), 21878-21891 (2015)

Shen-Hao Chao, et al., *Identification of hemeodomain proteins, PBX1 and PREP1, involved in the transcription of murine leukemia virus*. Molecular & Cell Biology 23(3): 831-841 (2013)

Applications

- May be used for study PBX1 mediated gene transcription regulation for endothelial to HSC differentiation in vitro by intracellular delivery of recombinant PBX1 protein using protein-delivery reagent such as ProFectin kit.
- May be used for mapping PBX1 protein-protein interaction.
- May be used as specific substrate protein for kinase, and ubiquitin (Sumo pathway) related enzyme functional screening assays.
- High purified native PBX1 protein, which may be used for specific antibody production.
- Potential biomarker protein for cancer prognosis, such as *gastric & breast cancer, et al.*

Quality Control:

1. Purity: > 90 % by SDS-PAGE.



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Recombinant Human PBX1 Protein: (49.8 kD)

MASMTGGQQMGRGHHHHHENLYFQGGEFDEQPRLMHSAGVGMAGHPGLSQHLQDGAGGTEGE
GGRKQDIGDILQQIMTITDQSLDEAQARKHALNCHRMKPALFNVLC EIKEKTVLSIRGAQEEEP
TDPQLMRLDNMLLAEGVAGPEKGGGSAAAAAAAAAASGGAGSDNSVEHSDYRAKLSQIRQIYHTE
LEKYEQACNEFTTHVMNLLREQSRTRPISPKEIERMVSI IHRKFSSIQMLKQSTCEAVMILRS
RFLDARRKRRNFNKQATEILNEYFYSHLSNPYPSEEAKEELAKKCGITVSQVSNWFGNKRIRYK
KNIGKFQEEANIYAAKTAVTATNVSAHGSQANS PSTPNSAGSSSSFNMSNSGDLFMSVQSLNGD
SYQGAQVGANVQSQVDTLRHVISQTGGYSDGLAASQMYSPQGISANGGWQDATTPSSVTSPTEG
PGSVHSDTSN