



LD Biopharma, Inc.
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- PRODUCT DATA SHEET -

Name of Product: Recombinant Human CBF β Protein
Catalog Number: hTF-1486
Manufacturer: LD Biopharma, Inc.

Introduction

The protein encoded by human core-binding factor subunit beta (CBF β) gene is the beta subunit of a heterodimeric core-binding transcription factor belonging to the PEBP2/CBF transcription factor family which master-regulates a host of genes specific to hematopoiesis (e.g., RUNX1) and osteogenesis (e.g., RUNX2). The beta subunit is a non-DNA binding regulatory subunit; it allosterically enhances DNA binding by alpha subunit as the complex binds to the core site of various enhancers and promoters, including murine leukemia virus, polyomavirus enhancer, T-cell receptor enhancers and GM-CSF promoters. Alternative splicing generates two mRNA variants, each encoding a distinct carboxyl terminus. In some cases, a pericentric inversion of chromosome 16 [inv(16)(p13q22)] produces a chimeric transcript consisting of the N terminus of core-binding factor beta in a fusion with the C-terminal portion of the smooth muscle myosin heavy chain 11. This chromosomal rearrangement is associated with acute myeloid leukemia of the M4Eo subtype. Two transcript variants encoding different isoforms have been found for this gene.

Full-length human CBF β (182 aa, derived from BC018509) gene was constructed with 29 aa N-terminal T7 / His / TEV cleavage site Tag and expressed in E.coli as inclusion bodies.. This protein was refolded using our unique “temperature shift inclusion body refolding” technology and chromatographically purified.

Gene Symbol:	CBF β	(PEBP2B)
Accession Number:	NP_074036	
Species:	Human	
Size:	50 μ g / Vial	
Composition:	0.5 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, Sucrose and DTT.	
Storage:	In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 7 days.	



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Key References

Guo Y, et al., *Structural basis for hijacking CBF-beta and CUL5 E3 ligase complex by HIV-1 Vif*. Nature 505 (7482), 229-233 (2014)

Opatz S, et al., *Exome sequencing identifies recurring FLT3 N676K mutations in core-binding factor leukemia*. Blood 122 (10), 1761-1769 (2013)

Tanaka Y, et al., *The protooncogene product, PEBP2beta/CBFbeta, is mainly located in the cytoplasm and has an affinity with cytoskeletal structures* Oncogene 15 (6), 677-683 (1997)

Applications

1. May be used for in vitro CBF β / Runx1 complex mediated gene transcription regulation for HSC differentiation study with “ProFectin” reagent based intracellular delivery of this protein.
2. May be used as specific protein substrate for kinase and ubiquitin (Sumo pathway) related enzyme functional screening assays.
3. May be used for CBF β protein-protein interaction mapping.
4. As immunogen for specific antibody production.

Quality Control

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

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHENLYFQGEFPRVVPDQRSKFENEEFFRKLSRECEIKYTGFRDRPH
EERQARFQNACRDRSEIAFVATGTNLSLQFFPASWQGEQRQTPSREYVDLEREAGKVYLKAPM
ILNGVCVIWKGWIDLQRLDGMGCLEFDEERAQQEDALAQQAFEEARRRTREFEDRDRSHREEME
VRVSQLLAVTGKKTTRP