



LD Biopharma, Inc.
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- PRODUCT DATA SHEET -

Name of Product: Recombinant Human PHB Protein
Catalog Number: hTF-1758
Manufacturer: LD Biopharma, Inc.

Introduction

Human prohibitin (PHB) gene is evolutionarily conserved, and its product is proposed to play a role in human cellular senescence and tumor suppression. PHB inhibits DNA synthesis. It has a role in regulating proliferation. As yet it is unclear if the protein or the mRNA exhibits this effect. It may play a role in regulating mitochondrial respiration activity in aging, inflammation and obesity. Recent data also indicated that PHB1 also plays a role in preventing oxidative stress in an array of cell lines. Cellular location of PHB has been reported in mitochondrial, nuclei and cytoplasm. The ability of PHB to translocate to various subcellular locations in response to different signals, along with regulating E2Fs and P53 raises the idea that depending on the environment it is placed in, it can either promote apoptosis or proliferation, a property that is rather unique.

Full-length human PHB cDNA (271 aa) was constructed with codon optimization and expressed with a small T7-His-TEV cleavage site Tag (29aa) fusion at its N-terminal. This protein is expressed 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: PHB (HEL-215; HEL-S-54e; PHB1)
Accession Number: NP_002625
Species: Human
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 and DTT.
Storage: In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least 30 days.

Key References



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Sarah Koushyar, et al., *Unveiling the potential of prohibitin in cancer*. *Cancer Letters*. Vol 369, issue 2, pp:316-322 (2015)

Song W, et al., *The aberrant expression and localization of prohibitin during apoptosis of human cholangiocarcinoma Mz-ChA-1 cells*. *FEBS Lett*. 588 (3), 422-428 (2014)

Guan X, et al., *Identification of prohibitin and prohibiton as novel factors binding to the p53 induced gene 3 (PIG3) promoter (TGYCC)(15) motif*. *Biochem. Biophys. Res. Commun*. 443 (4), 1239-1244 (2014)

Kang T, et al., *MicroRNA-27 (miR-27) targets prohibitin and impairs adipocytes differentiation and mitochondrial function in human adipose-derived stem cells*. *J. Biol. Chem*. 288 (48), 34394-34402 (2013)

Applications

1. May be used for in vitro PHB mediated DNA synthesis inhibition and apoptosis regulation study for various cancer cells by intracellular delivery of this protein with ProFectin reagent.
2. May be used for mapping PHB protein-protein interaction assay.
3. May be used as specific substrate protein for kinase and ubiquitin (Sumo pathway) related enzyme functional screening assays.
4. May be used for specific antibody production.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHENLYFQGGEFAAKVFESIGKFGLALAVAGGVVNSALYNVDAGHRA
VIFDRFRGVQDIVVGEGETHFLIPWVQKPIIFDCRSRPRNVPVITGSKDLQNVNITLRILFRPVA
SQLPRIFTSIGEDYDERVLP SITTEILKS VVARFDAGELITQRELVSRQVSDDLTERAATFGLI
LDDVSLTHLTFGKEFTEAVEAKQVAQQEAERARFVVEKAEQQKAAIISAEGDSKAAELIANSL
ATAGDGLIELRKLEAAEDIA YQLSR SRNITYLPAGQSVLLQLPQ