

# Recombinant Rat PHB1 Protein

**For Research Use Only**

## 1. Basic Product Information

Catalog No.: REP52416

Size: 10ug, 100ug

Protein Name: Prohibitin 1

Synonym: Phb1, Phb

UniProt ID: P67779

UniProt Link: [www.uniprot.org/uniprotkb/P67779/entry](http://www.uniprot.org/uniprotkb/P67779/entry)

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 272 AA

Molecular Weight: 30 KD

Protein Tag: C-terminal His6

## 2. Amino Acid Sequence

MAAKVFESIGKFGGLALAVAGGVVNSALYNVDAGHRAVIFDRFRGVQDIVVGEGTHFLIPWVQKPIIFD  
CRSRPRNPVITGSKDLQNVNITLRLFRPVASQLPRIYTSIGEDYDERVLPSITTEILKSVMARFDAGE  
LITQRELVSQRQVSDDLTERAATFGLILDDVSLTHLTFGKEFTEAVEAKQVAQQEAERARFVVEKAEQQ  
KKAIIISAEGDSKAAELIANSLATAGDGLIELRKLEAAEDIAYQLSRSRNITYLPAGQSVLLQLPQ

## 3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

## 4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

## 5. Product Description

This product is recombinant Prohibitin 1 produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

**Protein Function:** Protein with pleiotropic attributes mediated in a cell-compartment- and tissue-specific manner, which include the plasma membrane-associated cell signaling functions, mitochondrial chaperone, and transcriptional co-regulator of transcription factors in the nucleus. Plays a role in adipose tissue and glucose homeostasis in a sex-specific manner (By similarity) (PubMed:1996099). Contributes to pulmonary vascular remodeling by accelerating proliferation of pulmonary arterial smooth muscle cells (PubMed:32173312).; In the mitochondria, together with PHB2, forms large ring complexes (prohibitin complexes) in the inner mitochondrial membrane (IMM) and functions as a chaperone protein that stabilizes mitochondrial respiratory enzymes and maintains mitochondrial integrity in the IMM, which is required for mitochondrial morphogenesis, neuronal survival, and normal lifespan. The prohibitin complex, with DNAJC19, regulates cardiolipin remodeling and the protein turnover of OMA1 in a cardiolipin-binding manner. Regulates mitochondrial respiration activity playing a role in cellular aging. The prohibitin complex plays a role of mitophagy receptor involved in targeting mitochondria for autophagic degradation (By similarity). Involved in mitochondrial-mediated antiviral innate immunity, activates RIG-I-mediated signal transduction and production of IFNB1 and pro-inflammatory cytokine IL6 (By similarity).; In the nucleus, acts as a transcription coregulator, enhances promoter binding by TP53, a transcription factor it activates, but reduces the promoter binding by E2F1, a transcription factor it represses. Interacts with STAT3 to affect IL17 secretion in T-helper Th17 cells.; In the plasma membrane, cooperates with CD86 to mediate CD86-signaling in B lymphocytes that regulates the level of IgG1 produced through the activation of distal signaling intermediates. Upon CD40 engagement, required to activate NF-kappa-B signaling pathway via phospholipase C and protein kinase C activation.

**Subcellular Localization:** Mitochondrion inner membrane . Nucleus . Cytoplasm . Cell membrane .

## 6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.