

# Recombinant Human UBP5 Protein

**For Research Use Only**

## 1. Basic Product Information

Catalog No.: REP51037

Size: 10ug, 100ug

Protein Name: Ubiquitin carboxyl-terminal hydrolase 5 (EC 3.4.19.12) (Deubiquitinating enzyme 5) (Isopeptidase T) (Ubiquitin thioesterase 5) (Ubiquitin-specific-processing protease 5)

Synonym: USP5, ISOT

UniProt ID: P45974

UniProt Link: [www.uniprot.org/uniprotkb/P45974/entry](http://www.uniprot.org/uniprotkb/P45974/entry)

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 858 AA

Molecular Weight: 96 KD

Protein Tag: C-terminal His6

## 2. Amino Acid Sequence

MAELSEEALLSVLPTIRVPAKAGDRVHKDECAFSFDTPSEGGLYICMNTFLGFGKQYVERHFNKTGQ  
RVYLHLRRTTRPKEEDPATGTGDPPRKKPTRLAIGVEGGFDLSEEKFELDEDVKIVILPDYLEIARDGL  
GGLPDIVRDRVTSAVEALLSADSASRKQEVQAWDGEVRQVSKHAFSLKQLDNPARIPPCGWKCSK  
CDMRENWLNLTDGSILCGRRYFDGSGGNNHAVEHYRETGYPLAVKLGTITPDGADVSYDEDDM  
VLDPSLAEHLSHFGIDMLKMQKTDKTMTELEIDMNQRIGEWELIQESGVPLKPLFGPGYTGIRNLGNS  
CYLNSVVQVLFSDPQQRKYVDKLEIFQNAPTDPTQDFSTQVAKLGHGLLSGEYSKVPVPSGDGER  
VPEQKEVQDGIAPRMFKALIGKGHPFSTNRQQDAQEFFLHLINMVERNCRSSNPNEVFRFLVEEK  
IKCLATEKVKYTQRVDYIMQLPVPMDAALNKEELLEYYEKKRQAEKKMALPELVRAQVPFSSCLEA  
YGAPEQVDDFWSTALQAKSVAVKTTTRFASFPDYLVIQIKKFTFGLDWVPKKLDVSIEMPEELDISQLR  
GTGLQPGEELPDIAAPLVTPDEPKGSLGFYGNEDDSFCSPHFSSPTSPMLDESVIIQLVEMGFPM  
DACRKAVYYTGNSGAEAAAMNWMVSHMDDPDFANPLILPGSSGPGSTSAAADPPPEDCVTTIVSMG  
FSRDQALKALRATNNSLERAVDWIFSHIDDLDAEAAMDISEGRSAADSISESVVPGPKVRDGPQKYQ  
LFAFISHMGTSTMCGHYVCHIKKEGRWVIYNDQKVCASEKPPKDLGYIYFYQRVAS

## 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 Ubiquitin carboxyl-terminal hydrolase 5 (EC 3.4.19.12) (Deubiquitinating enzyme 5) (Isopeptidase T) (Ubiquitin thioesterase 5) (Ubiquitin-specific-processing protease 5) 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:** Deubiquitinating enzyme that participates in a wide range of cellular processes by specifically cleaving isopeptide bonds between ubiquitin and substrate proteins or ubiquitin itself. Affects thereby important cellular signaling pathways such as NF-kappa-B, Wnt/beta-catenin, and cytokine production by regulating ubiquitin-dependent protein degradation. Participates in the activation of the Wnt signaling pathway by promoting FOXM1 deubiquitination and stabilization that induces the recruitment of beta-catenin to Wnt target gene promoter (PubMed:26912724). Regulates the assembly and disassembly of heat-induced stress granules by mediating the hydrolysis of unanchored ubiquitin chains (PubMed:29567855). Promotes lipopolysaccharide-induced apoptosis and inflammatory response by stabilizing the TXNIP protein (PubMed:37534934). Affects T-cell biology by stabilizing the inhibitory receptor on T-cells PDC1 (PubMed:37208329). Acts as a negative regulator of autophagy by regulating ULK1 at both protein and mRNA levels (PubMed:37607937). Acts also as a negative regulator of type I interferon production by simultaneously removing both 'Lys-48'-linked unanchored and 'Lys-63'-linked anchored polyubiquitin chains on the transcription factor IRF3 (PubMed:39761299). Modulates the stability of DNA mismatch repair protein MLH1 and counteracts the effect of the ubiquitin ligase UBR4 (PubMed:39032648). Upon activation by insulin, it gets phosphorylated through mTORC1-mediated phosphorylation to enhance YTHDF1 stability by removing 'Lys-11'-linked polyubiquitination (PubMed:39900921). May also deubiquitinate other substrates such as the calcium channel CACNA1H (By similarity).

**Subcellular Localization:** Cytoplasm . Cytoplasm, Stress granule . Nucleus .

## 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.