Regulator of Nonsense Transcripts 1 (UPF1) Human Recombinant Protein

PRODUCT OVERVIEW

Product Name	Regulator of nonsense transcripts 1 (UPF1), Recombinant Protein
Full Product Name	Recombinant Human Regulator of nonsense transcripts 1 (UPF1) , partial
Product Gene Name	UPF1 recombinant protein
Product Synonym Gene Name	UPF1
Sequence	MSVEAYGPSS QTLTFLDTEE AELLGADTQG SEFEFTDFTL PSQTQTPPGG PGGPGGGGAG GPGGAGAGAA AGQLDAQVGP EGILQNGAVD DSVAKTSQLL AELNFEEDEE DTYYTKDLPI HACSYCGIHD PACVVYCNTS KKWFCNGRGN TSGSHIVNHL VRAKCKEVTL HKDGPLGETV LECYNCGCRN VFLLGFIPAK ADSVVVLLCR QPCASQSSLK DINWDSSQWQ PLIQDRCFLS WLVKIPSEQE QLRARQITAQ QINKLEELWK ENPSATLEDL EKPGVDEEPQ HVLLRYEDAY QYQNIFGPLV KLEADYDKKL KESQTQDNIT VRWDLGLNKK RIAYFTLPKT DSGNEDLVII WLRDMRLMQG DEICLRYKGD LAPLWKGIGH VIKVPDNYGD EIAIELRSSV GAPVE
Host	E Coli or Yeast or Baculovirus or Mammalian Cell
Form/Format	Lyophilized or liquid (Format to be determined during the manufacturing process)
Purity/Purification	Greater or equal to 85% purity as determined by SDS-PAGE. (lot specific)
Preparation and Storage	Store at -20 degrees C. For long-term storage, store at -20 degrees C or -80 degrees C. Store working aliquots at 4 degrees C for up to one week. Repeated freezing and thawing is not recommended.
Molecular Weight	123,036 Da
Sequence Positions	1-415. Partial.
Tag Information	This protein contains an N-terminal tag and may also contain a C-terminal tag. Tag types are determined by various factors including tag-protein stability, please inquire for tag information.
Sterility	Sterile filter available upon request.
Endotoxin	Low endotoxin available upon request.
OMIM	601430
3D Structure	ModBase 3D Structure for Q92900
Species	Human
ISO Certification	Manufactured in an ISO 9001:2015 Certified Laboratory.
Related Product Information for UPF1 recombinant protein	This gene encodes a protein that is part of a post-splicing multiprotein complex involved in both mRNA nuclear export and mRNA surveillance. mRNA surveillance detects exported mRNAs with truncated open reading frames and initiates nonsense-mediated mRNA decay (NMD). When translation ends upstream from the last exon-exon junction, this triggers NMD to degrade mRNAs containing premature stop codons. This protein is located only in the cytoplasm. When translation ends, it interacts with the protein that is a functional homolog of yeast Upf2p to trigger mRNA decapping. Use of multiple polyadenylation sites has been noted for this gene.
Other Notes	Small volumes of UPF1 recombinant protein vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for UPF1 purchase	MBS1481478 is a recombinant protein targeting UPF1. Also known as Recombinant Human Regulator of nonsense transcripts 1 (UPF1) , partial. Host: E Coli or Yeast or Baculovirus or Mammalian Cell.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for UPF1. It may not necessarily be applicable to this product.

NCBI GI #	662033888
NCBI GeneID	5976
NCBI Accession #	NP_001284478.1
UniProt Primary Accession #	Q92900
UniProt Secondary Accession #	O00239; O43343; Q86Z25; Q92842
UniProt Related Accession #	Q92900
GenBank Nucleotide #	NM_001297549.1
NCBI Official Full Name	regulator of nonsense transcripts 1 isoform 1
NCBI Official Synonym Full Names	UPF1, RNA helicase and ATPase
NCBI Official Symbol	UPF1
NCBI Official Synonym Symbols	HUPF1; NORF1; RENT1; smg-2; pNORF1
UniProt Protein Name	Regulator of nonsense transcripts 1
UniProt Synonym Protein Names	ATP-dependent helicase RENT1; Nonsense mRNA reducing factor 1; NORF1; Up-frameshift suppressor 1 homolog; hUpf1
Protein Family	ATP-dependent helicase
UniProt Gene Name	UPF1
UniProt Synonym Gene Names	KIAA0221; RENT1; NORF1; hUpf1
NCBI Protein Information	regulator of nonsense transcripts 1
NCBI Summary for UPF1	This gene encodes a protein that is part of a post-splicing multiprotein complex involved in both mRNA nuclear export and mRNA surveillance. mRNA surveillance detects exported mRNAs with truncated open reading frames and initiates nonsense-mediated mRNA decay (NMD). When translation ends upstream from the last exon-exon junction, this triggers NMD to degrade mRNAs containing premature stop codons. This protein is located only in the cytoplasm. When translation ends, it interacts with the protein that is a functional homolog of yeast Upf2p to trigger mRNA decapping. Use of multiple polyadenylation sites has been noted for this gene. Alternative splicing results in multiple transcript variants. [provided by RefSeq, Jul 2014]
UniProt Comments for UPF1	RNA-dependent helicase and ATPase required for nonsense-mediated decay (NMD) of mRNAs containing premature stop codons. Is recruited to mRNAs upon translation termination and undergoes a cycle of phosphorylation and dephosphorylation; its phosphorylation appears to be a key step in NMD. Recruited by release factors to stalled ribosomes together with the SMG1C protein kinase complex to form the transient SURF (SMG1-UPF1-eRF1-eRF3) complex. In EJC-dependent NMD, the SURF complex associates with the exon junction complex (EJC) (located 50-55 or more nucleotides downstream from the termination codon) through UPF2 and allows the formation of an UPF1-UPF2-UPF3 surveillance complex which is believed to activate NMD. Phosphorylated UPF1 is recognized by EST1B/SMG5, SMG6 and SMG7 which are thought to provide a link to the mRNA degradation machinery involving exonucleolytic and endonucleolytic pathways, and to serve as adapters to protein phosphatase 2A (PP2A), thereby triggering UPF1 dephosphorylation and allowing the recycling of NMD factors. UPF1 can also activate NMD without UPF2 or UPF3, and in the absence of the NMD-enhancing downstream EJC indicative for alternative NMD pathways. Plays a role in replication-dependent histone mRNA degradation at the end of phase S; the function is independent of UPF2. For the recognition of premature termination codons (PTC) and initiation of NMD a competitive interaction between UPF1 and PABPC1 with the ribosome-bound release factors is proposed. The ATPase activity of UPF1 is required for disassembly of mRNPs undergoing NMD. Essential for embryonic viability.
Research Articles on UPF1	**1.** results indicate that UPF1 can dissociate miRNAs from their mRNA targets, making the miRNAs susceptible to Tudor-staphylococcal/micrococcal-like nuclease (TSN)-mediated miRNA decay.
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