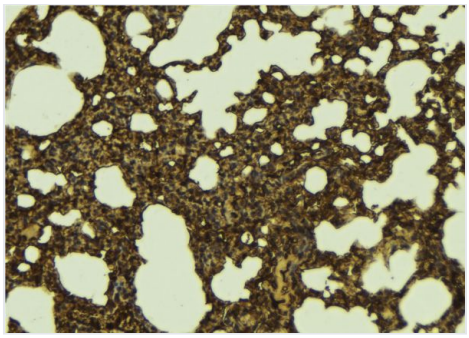
UPF1 Antibody – Rabbit Polyclonal

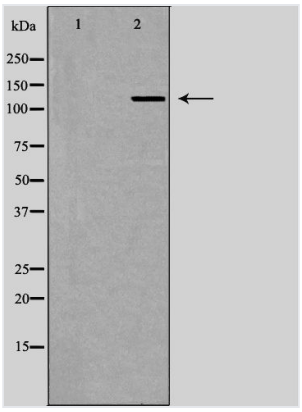
PRODUCT OVERVIEW

Product Name	UPF1, Polyclonal Antibody
Full Product Name	UPF1 Antibody
Product Gene Name	anti-UPF1 antibody
Product Synonym Names	ATP dependent helicase RENT1; ATP-dependent helicase RENT1; Delta helicase; FLJ43809; FLJ46894; HUPF 1; hUpf1; KIAA0221; Nonsense mRNA reducing factor 1; NORF 1; NORF1; pNORF 1; pNORF1; Regulator of nonsense transcripts 1; RENT 1; RENT1; RENT1_HUMAN; Smg 2; Smg 2 homolog nonsense mediated mRNA decay factor; UP Frameshift 1; Up frameshift mutation 1 homolog (S. cerevisiae); Up frameshift mutation 1 homolog; Up frameshift suppressor 1 homolog; Up-frameshift suppressor 1 homolog; UPF 1; UPF 1 regulator of nonsense transcripts homolog; upf1; UPF1 regulator of nonsense transcripts homolog; UPF1 RNA helicase and ATPase; Yeast Upf1p homolog
Clonality	Polyclonal
Isotype	IgG
Host	Rabbit
Species Reactivity	Human, Mouse, Rat
Form/Format	Liquid Phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Purity/Purification	The antiserum was purified by peptide affinity chromatography using SulfoLink Coupling Resin.
Concentration	1mg/ml (lot specific)
Specificity	UPF1 antibody detects endogenous levels of total UPF1
Preparation and Storage	Store at -20 degree C. Stable for 12 months from date of receipt.
Antibody/Peptide Pairs	UPF1 peptide (MBS9625813) is used for blocking the activity of UPF1 antibody (MBS9607097)
Molecular Weight	Observed: 123 kDa Predicted: 125 kDa
3D Structure	ModBase 3D Structure for Q92900
Supply Chain Verification	Manufactured in a lab with traceable raw materials manufactured on site. Coordinated product portfolio of antibodies, pairs, conjugates, recombinant proteins, and immunoassay materials available, please inquire.
Immunogen	A synthetic peptide of human UPF1
Subcellular Location	Cytoplasm. Cytoplasm > P-Body. Hyperphosphorylated form is targeted to the P-body, while unphosphorylated protein is distributed throughout the cytoplasm.
Tissue Specificity	Ubiquitous.
Predicted Cross Reactivity	**Pig, Zebrafish, Bovine, Horse, Sheep, Dog, Chicken, Xenopus**
Similarity	Pig (100%), Zebrafish (100%), Bovine (100%), Horse (100%), Sheep (89%), Dog (100%), Chicken (100%), Xenopus (100%)
Conjugation	Unconjugated
ISO Certification	Manufactured in an ISO 9001:2015 Certified Laboratory.
Applications Tested/Suitable for anti-UPF1 antibody	Western Blot (WB), Immunohistochemisty (IHC), Immunofluorescence (IF), Immunocytochemistry (ICC), ELISA (EIA)

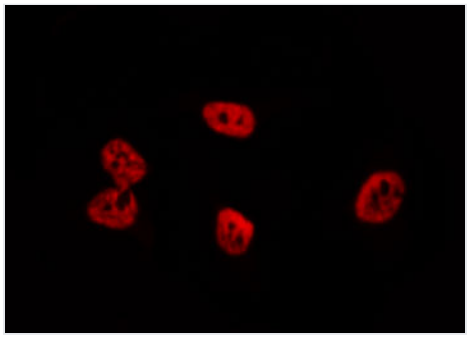
Application Notes for anti-UPF1 antibody	WB: 1:500-1:2000 IHC: 1:50-1:200 IF/ICC: 1:100-1:500
Related Product Information for anti-UPF1 antibody	Description: Upf1 was identified as an active component in nonsense-mediated decay (NMD), an mRNA surveillance mechanism in eukaryotic cells that degrades mRNAs containing premature termination codons (1). Upf1 was found to be an ATP-dependent RNA helicase in the cytoplasm (2) and was later shown to be a component of cytoplasmic P-bodies (3). Upf1 phosphorylation mediates the repression of translation that accompanies NMD, allowing mRNA accessibility to the NMD machinery (4). Two other active components of NMD, Upf2 and Upf3, were also identified and described as having perinuclear and nucleocytoplasmic localization, respectively (5). Function: 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. Subunit Structure: Found in a post-splicing messenger ribonucleoprotein (mRNP) complex (PubMed:21419344). Associates with the exon junction complex (EJC) (PubMed:11546874, PubMed:16452507). Associates with the SGM1C complex; is phosphorylated by the complex kinase component SGM1 (PubMed:19417104). Interacts with UPF2 (PubMed:11163187, PubMed:11073994, PubMed:11113196, PubMed:19556969). Interacts with UPF3A and UPF3B (PubMed:11163187). Interacts with EST1A (PubMed:12554878). Interacts with SLBP (PubMed:16086026). Interacts (when hyperphosphorylated) with PNRC2 (PubMed:19150429). Interacts with AGO1 and AGO2 (PubMed:17932509). Interacts with GSPT2 (PubMed:18447585). Interacts with isoform 1 and isoform 5 of ADAR/ADAR1 (PubMed:18362360). Interacts with SMG7 (PubMed:15721257). Interacts with ZC3H12A; this interaction occurs in a mRNA translationally active-and termination-dependent manner and is essential for ZC3H12A-mediated degradation of target mRNAs (PubMed:26000482). Interacts with CPSF6 (PubMed:19864460). Post-translational Modifications: Phosphorylated by SMG1; required for formation of mRNA surveillance complexes. Similarity: The [ST]-Q motif constitutes a recognition sequence for kinases from the PI3/PI4-kinase family. Belongs to the DNA2/NAM7 helicase family.
Other Notes	Small volumes of anti-UPF1 antibody 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	MBS9607097 is an antibody targeting UPF1. Also known as UPF1 Antibody. Reactive in Human, Mouse, Rat. Host: Rabbit.



Immunohistochemistry (IHC) of anti-UPF1 antibody
MBS9607097 at 1/100 staining Mouse lung tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the antibody for 1.5 hours at 22 degree C. An HRP conjugated goat anti-rabbit antibody was used as the secondary.



Western Blot (WB) of anti-UPF1 antibody
Western blot analysis of Hela whole cell lysates, using UPF1 Antibody. The lane on the left is treated with the antigen-specific peptide.



Immunofluorescence (IF) of anti-UPF1 antibody
MBS9607097 staining Hela cells by IF/ICC. The sample were fixed with PFA and permeabilized in 0.1% Triton X-100, then blocked in 10% serum for 45 minutes at 25 degree C. The primary antibody was diluted at 1/200 and incubated with the sample for 1 hour at 37 degree C. An Alexa Fluor 594 conjugated goat anti-rabbit IgG (H+L) antibody, diluted at 1/600, was used as secondary antibody.

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.** Status epilepticus led to increased protein levels of Up-frameshift suppressor 1 homolog (Upf1) within the mouse hippocampus. Upf1 protein levels were also higher in resected hippocampus from patients with intractable temporal lobe epilepsy.
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