10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Anti-RENT1/hUPF1 Picoband Antibody

Catalog # ABO12528

Product Information

Application	WB, IHC-P
Primary Accession	Q92900
Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized
Description	Rabbit IgG polyclonal antibody for Regulator of nonsense transcripts 1(UPF1) detection. Tested with WB, IHC-P in Human;Mouse;Rat.
Reconstitution	Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Additional Information

Gene ID	5976
Other Names	Regulator of nonsense transcripts 1, 3.6.4.-, ATP-dependent helicase RENT1, Nonsense mRNA reducing factor 1, NORF1, Up-frameshift suppressor 1 homolog, hUpf1, UPF1, KIAA0221, RENT1
Calculated MW	124345
Application Details	Immunohistochemistry(Paraffin-embedded Section), 0.5-1 □g/ml, Human, Mouse, Rat, By Heat Western blot, 0.1-0.5 □g/ml, Human, Rat
Subcellular Localization	Cytoplasm. Cytoplasm, P-body. Nucleus. Hyperphosphorylated form is targeted to the P-body, while unphosphorylated protein is distributed throughout the cytoplasm.
Tissue Specificity	Ubiquitous.
Source	Eukaryota
Protein Name	Regulator of nonsense transcripts 1
Contents	Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3.
Immunogen	A synthetic peptide corresponding to a sequence in the middle region of human RENT1/hUPF1 (578-614aa NMDSMPELQKLQQLKDETGELSSADEKRYRALKRT AE), identical to the related mouse and rat sequences.

Purification	Immunogen affinity purified.
Cross Reactivity	No cross reactivity with other proteins
Storage	At -20˚C for one year. After r˚Constitution, at 4˚C for one month. It˚Can also be aliquotted and stored frozen at -20˚C for a longer time.Avoid repeated freezing and thawing.

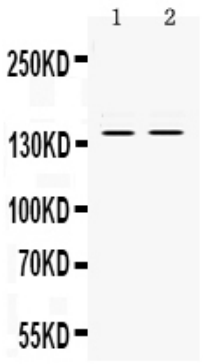
Protein Information

Name	UPF1 (HGNC:9962)
Function	RNA-dependent helicase required for nonsense-mediated decay (NMD) of aberrant mRNAs containing premature stop codons and which modulates the expression level of normal mRNAs (PubMed:11163187, PubMed:16086026, PubMed:18172165, PubMed:21145460, PubMed:21419344, PubMed:24726324). ATP-dependent 5'-3' helicase active on RNA:DNA substrates with a 5'-RNA extension (PubMed:18066079, PubMed:21419344, PubMed:23275559, PubMed:26138914). ATP-dependent 5'-3' helicase active on RNA:RNA substrates with a 5'-RNA extension (PubMed:26138914). ATP-dependent 5'-3' helicase active on DNA:DNA substrates with a 5'-DNA extension (PubMed:10999600, PubMed:26138914, PubMed:30218034). 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 (PubMed:11544179, PubMed:25220460). Recruited by release factors to stalled ribosomes together with the SMG1C protein kinase complex to form the transient SURF (SMG1-UPF1-eRF1-eRF3) complex (PubMed:19417104). 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 (PubMed:21419344). 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 (PubMed:12554878). UPF1 can also activate NMD without UPF2 or UPF3, and in the absence of the NMD-enhancing downstream EJC indicative for alternative NMD pathways (PubMed:18447585). Plays a role in replication-dependent histone mRNA degradation at the end of phase S; the function is independent of UPF2 (PubMed:16086026, PubMed:18172165). 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 (PubMed:18447585, PubMed:25220460). The ATPase activity of UPF1 is required for disassembly of mRNPs undergoing NMD (PubMed:21145460). Together with UPF2 and dependent on TDRD6, mediates the degradation of mRNA harboring long 3'UTR by inducing the NMD machinery (By similarity). Has ssDNA-stimulated ATPase activity (poly(dT) and poly(dA) are most stimulatory) (PubMed:10999600). Binds RNA; addition of ATP decreases RNA-binding (PubMed:10999600, PubMed:18066079, PubMed:21419344).
Cellular Location	Cytoplasm. Cytoplasm, P-body. Nucleus. Cytoplasm, perinuclear region {ECO:0000250|UniProtKB:Q9EPU0} Note=Hyperphosphorylated form is targeted to the P-body, while unphosphorylated protein is distributed throughout the cytoplasm Localized in the chromatoid bodies of round spermatids (By similarity) {ECO:0000250|UniProtKB:Q9EPU0}
Tissue Location	Ubiquitous.

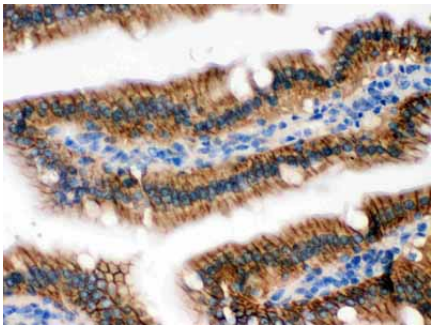
Background

Regulator of nonsense transcripts 1 is a protein that in humans is encoded by the UPF1 gene. 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. And 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.

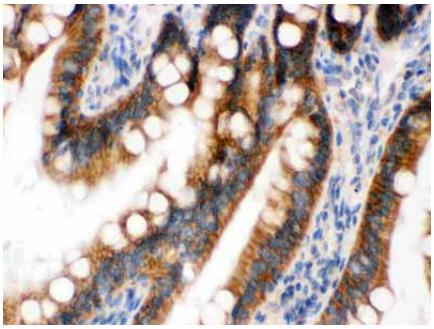
Images



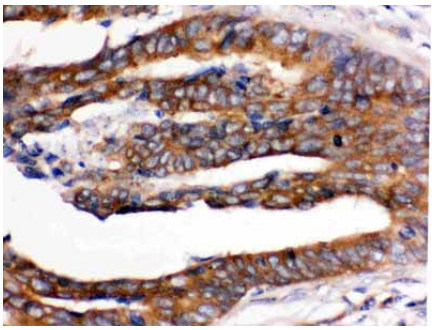
Anti- RENT1/hUPF1 Picoband antibody, ABO12528, Western blottingAll lanes: Anti RENT1/hUPF1 (ABO12528) at 0.5ug/mlLane 1: Rat Pancreas Tissue Lysate at 50ugLane 2: PANC Whole Cell Lysate at 40ugPredicted bind size: 140KDObserved bind size: 140KD



Anti- RENT1/hUPF1 Picoband antibody, ABO12528, IHC(P)IHC(P): Mouse Intestine Tissue



Anti- RENT1/hUPF1 Picoband antibody, ABO12528, IHC(P)IHC(P): Rat Intestine Tissue



Anti- RENT1/hUPF1 Picoband antibody, ABO12528, IHC(P)IHC(P): Human Intestinal Cancer Tissue

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.