

**Anti-RENT1/hUPF1 Picoband Antibody**  
Catalog # ABO12528

**Specification**

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**Anti-RENT1/hUPF1 Picoband Antibody - Product Information**

Application	WB, IHC
Primary Accession	<a href="#">O92900</a>
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.

**Anti-RENT1/hUPF1 Picoband Antibody - 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 MW KDa

**Application Details**

Immunohistochemistry(Paraffin-embedded Section), 0.5-1 µg/ml, Human, Mouse, Rat, By Heat<br><br>Western blot, 0.1-0.5 µg/ml, Human, Rat<br><br>

**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.

**Protein Name**

Regulator of nonsense transcripts 1

**Contents**

Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na<sub>2</sub>HPO<sub>4</sub>, 0.05mg Na<sub>3</sub>.

**Immunogen**

A synthetic peptide corresponding to a sequence in the middle region of human RENT1/hUPF1 (578-614aa NMDSMP~~EL~~QKLQQLKDE~~TG~~ELSSADEKRYRALKRT 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<sup>o</sup>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.**

### Anti-RENT1/hUPF1 Picoband Antibody - Protein Information

Name UPF1 ([HGNC:9962](#))

#### Function

RNA-dependent helicase required for nonsense-mediated decay (NMD) of aberrant mRNAs containing premature stop codons and modulates the expression level of normal mRNAs (PubMed:<a href="http://www.uniprot.org/citations/11163187" target="\_blank">11163187</a>, PubMed:<a href="http://www.uniprot.org/citations/16086026" target="\_blank">16086026</a>, PubMed:<a href="http://www.uniprot.org/citations/18172165" target="\_blank">18172165</a>, PubMed:<a href="http://www.uniprot.org/citations/21145460" target="\_blank">21145460</a>, PubMed:<a href="http://www.uniprot.org/citations/21419344" target="\_blank">21419344</a>, PubMed:<a href="http://www.uniprot.org/citations/24726324" target="\_blank">24726324</a>). 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:<a href="http://www.uniprot.org/citations/11544179" target="\_blank">11544179</a>, PubMed:<a href="http://www.uniprot.org/citations/25220460" target="\_blank">25220460</a>). 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:<a href="http://www.uniprot.org/citations/19417104" target="\_blank">19417104</a>). 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:<a href="http://www.uniprot.org/citations/21419344" target="\_blank">21419344</a>). 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:<a href="http://www.uniprot.org/citations/12554878" target="\_blank">12554878</a>). 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:<a href="http://www.uniprot.org/citations/18447585" target="\_blank">18447585</a>). Plays a role in replication-dependent histone mRNA degradation at the end of phase S; the function is independent of UPF2 (PubMed:<a href="http://www.uniprot.org/citations/16086026" target="\_blank">16086026</a>, PubMed:<a href="http://www.uniprot.org/citations/18172165" target="\_blank">18172165</a>). 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:<a href="http://www.uniprot.org/citations/18447585" target="\_blank">18447585</a>, PubMed:<a href="http://www.uniprot.org/citations/25220460" target="\_blank">25220460</a>). The ATPase activity of UPF1 is required for disassembly of mRNPs undergoing NMD (PubMed:<a href="http://www.uniprot.org/citations/21145460" target="\_blank">21145460</a>). Together with UPF2 and dependent on TDRD6, mediates the

degradation of mRNA harboring long 3'UTR by inducing the NMD machinery (By similarity). Also capable of unwinding double-stranded DNA and translocating on single-stranded DNA (PubMed:<a href="http://www.uniprot.org/citations/30218034" target="\_blank">30218034</a>).

#### 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

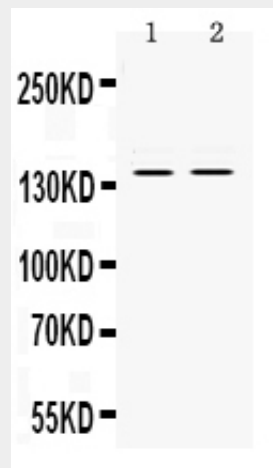
Ubiquitous.

### Anti-RENT1/hUPF1 Picoband Antibody - Protocols

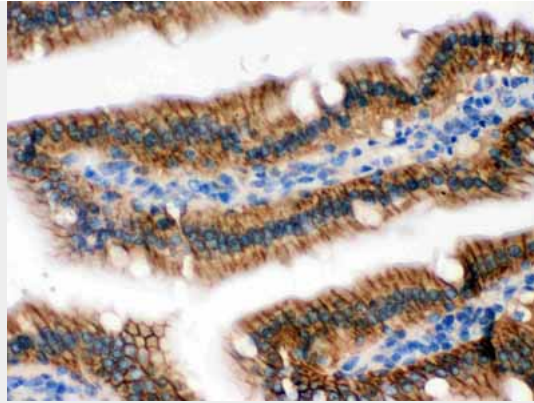
Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

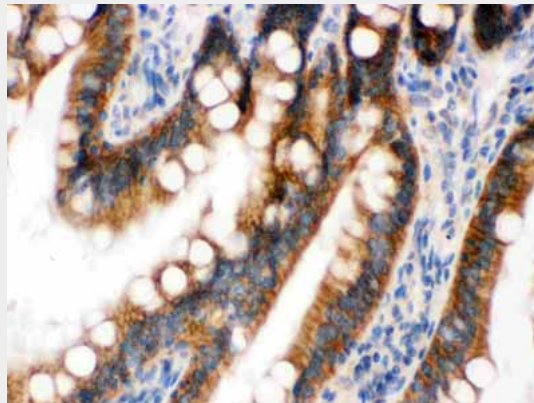
### Anti-RENT1/hUPF1 Picoband Antibody - Images



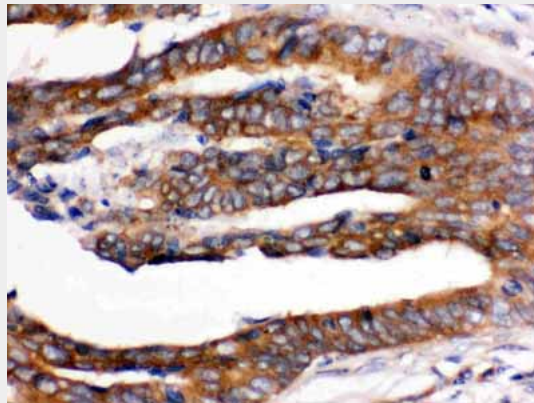
Anti- RENT1/hUPF1 Picoband antibody, ABO12528, Western blottingAll lanes: Anti RENT1/hUPF1 (ABO12528) at 0.5ug/mlLane 1: Rat Pancreas Tissue Lysate at 50ugLane 2: PANC Whole Cell Lysate at 40ugPredicted bind size: 140KDObserved bind size: 140KD



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

#### **Anti-RENT1/hUPF1 Picoband Antibody - 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.