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

Specification

Anti-RENT1/hUPF1 Picoband Antibody - 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.

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

Western blot, 0.1-0.5 µg/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.

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.**

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:11163187, PubMed:16086026, PubMed:18172165, PubMed:21145460, PubMed:21419344, PubMed:24726324). 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). Also capable of unwinding double-stranded DNA and translocating on single-stranded DNA (PubMed:30218034).

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}

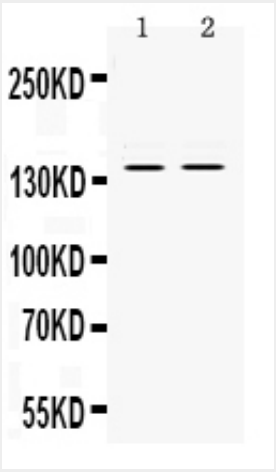
Tissue Location
Ubiquitous.

Anti-RENT1/hUPF1 Picoband Antibody - Protocols

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

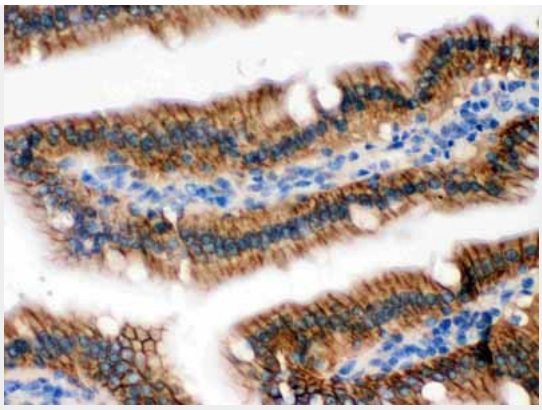
- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

Anti-RENT1/hUPF1 Picoband Antibody - Images

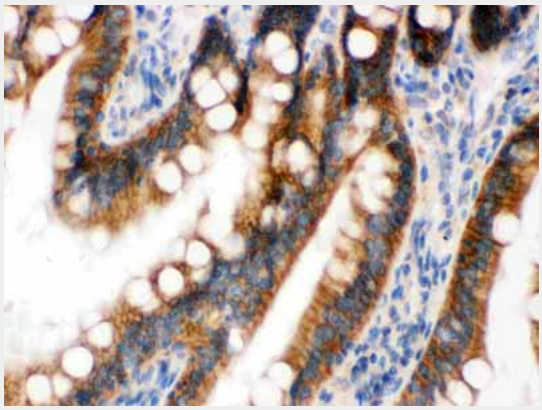


Anti- RENT1/hUPF1 Picoband antibody, ABO12528, Western blottingAll lanes: Anti RENT1/hUPF1 (ABO12528) at 0.5ug/mlLane 1: Rat Pancreas Tissue Lysate at 50ugLane 2: PANC Whole Cell Lysate at 40ugPredicted bind size: 140KDObserved bind size: 140KD

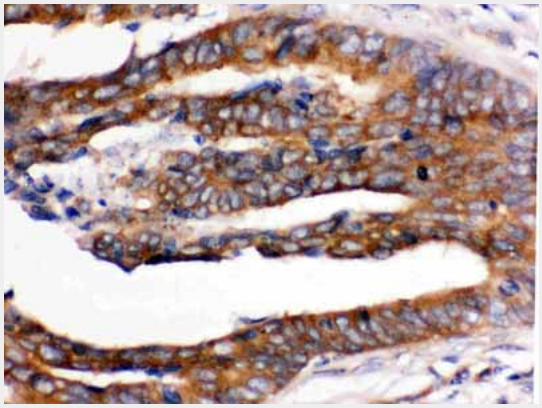
10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999



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.