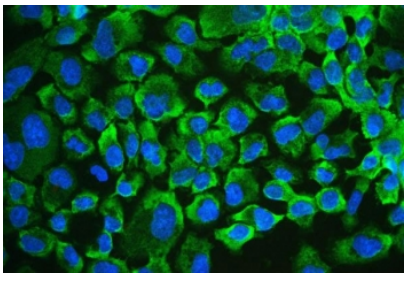
UPF1 Antibody / RENT1 (R32296)

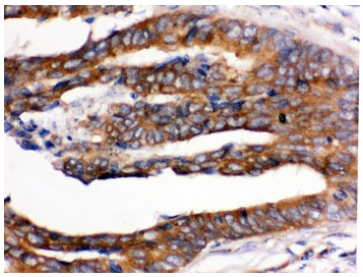
Catalog No.	Formulation	Size
R32296	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

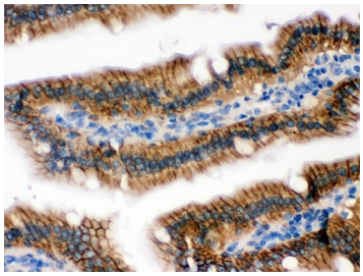
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
Buffer	Lyophilized from 1X PBS with 2.5% BSA and 0.025% sodium azide
UniProt	Q92900
Localization	Nuclear, cytoplasmic
Applications	Western blot: 0.5-1ug/ml Immunohistochemistry (FFPE): 1-2ug/ml Immunofluorescence (FFPE): 2-4ug/ml Flow cytometry: 1-3ug/million cells
Limitations	This UPF1 antibody is available for research use only.



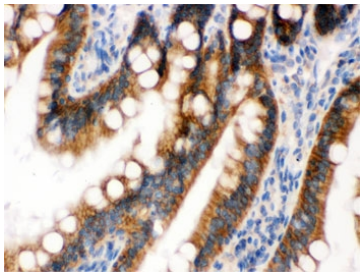
Immunofluorescence analysis of UPF1 / RENT1 antibody in human A431 cells. FFPE human A431 cells show cytoplasmic green fluorescence consistent with UPF1 expression, while nuclei are counterstained with DAPI (blue). The signal is predominantly cytoplasmic with a perinuclear distribution pattern, and nuclear staining is minimal under the conditions tested. Heat induced epitope retrieval was performed by steaming sections in citrate buffer, pH 6.0, for 20 minutes prior to immunostaining.



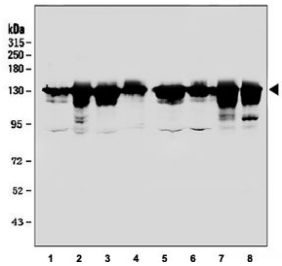
IHC testing of FFPE human intestinal cancer tissue with UPF1 antibody. HIER: Boil the paraffin sections in pH8 EDTA buffer for 20 minutes and allow to cool prior to staining.



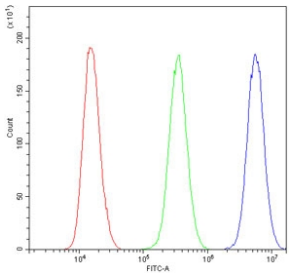
IHC testing of FFPE mouse intestine with UPF1 antibody. HIER: HIER: Boil the paraffin sections in pH8 EDTA buffer for 20 minutes and allow to cool prior to staining.



IHC testing of FFPE rat intestine with UPF1 antibody. HIER: HIER: Boil the paraffin sections in pH8 EDTA buffer for 20 minutes and allow to cool prior to staining.



Western blot testing of human 1) HeLa, 2) Raji, 3) HepG2, 4) SK-OV-3, 5) PC-3, 6) HEK293, 7) rat RH35 and 8) mouse HEPA1-6 cell lysate with UPF1 antibody. Predicted molecular weight ~124 kDa, but routinely observed at 130-140 kDa.



Flow cytometry testing of human PC-3 cells with UPF1 antibody at 1ug/million cells (blocked with goat sera); Red=cells alone, Green=isotype control, Blue= UPF1 antibody.

Description

UPF1 antibody, also known as RENT1 antibody, recognizes Up-frameshift suppressor 1, a conserved ATP-dependent RNA helicase encoded by the human UPF1 gene located on chromosome 19p13.11. Commonly referred to as RENT1, regulator of nonsense transcripts 1, or hUPF1 in the literature, this protein is predominantly localized to the cytoplasm and shuttles between the nucleus and cytoplasm. UPF1 antibody targets a core component of the nonsense-mediated mRNA decay pathway, a quality control mechanism that detects and degrades mRNAs containing premature termination codons to prevent synthesis of truncated proteins.

Up-frameshift suppressor 1 belongs to the superfamily 1 helicase family and contains conserved ATP-binding and RNA-

binding domains that coordinate ATP hydrolysis with RNA remodeling. Through interactions with UPF2 and UPF3, RENT1 forms a surveillance complex associated with translating ribosomes. Following recognition of aberrant stop codons, UPF1 undergoes regulated phosphorylation that promotes recruitment of mRNA decay factors and transcript degradation. Beyond nonsense-mediated mRNA decay, UPF1 contributes to general mRNA turnover, Staufen-mediated decay, and regulation of specific transcripts involved in cell growth, differentiation, and stress responses.

UPF1 is widely expressed across tissues, reflecting its essential role in post-transcriptional gene regulation. Subcellularly, RENT1 is primarily cytoplasmic and can associate with processing bodies and sites of active translation. Structurally, it contains a helicase core domain and regulatory regions that mediate protein-protein interactions and phosphorylation-dependent control. Altered UPF1 expression or function has been implicated in cancer, viral infection, and neurodevelopmental disorders, where disrupted RNA surveillance can affect transcript stability and gene expression programs.

UPF1 antibody is suitable for detecting RENT1 expression in studies of RNA quality control, mRNA decay pathways, and translational regulation. By enabling analysis of UPF1 distribution and abundance, this antibody supports research into RNA metabolism and disease-associated alterations in post-transcriptional regulation.

Application Notes

Optimal dilution of the UPF1 antibody should be determined by the researcher.

Immunogen

Amino acids NMDSMPELQKLQQLKDETGELSSADEKRYRALKRT AE of human UPF1 were used as the immunogen for the UPF1 antibody.

Storage

After reconstitution, the UPF1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

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