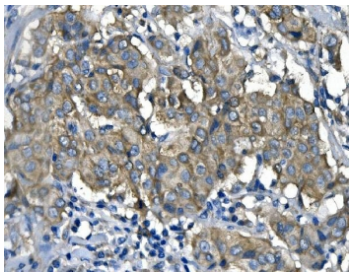
RENT1 Antibody / hUPF1 [clone 11E7.] (RQ5658)

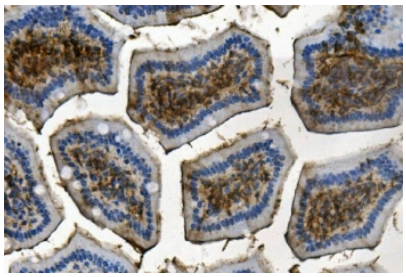
Catalog No.	Formulation	Size
RQ5658	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

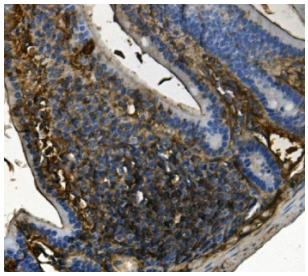
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Mouse
Clonality	Monoclonal
Isotype	Mouse IgG2b
Clone Name	11E7.
Purity	Affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose and 0.025% sodium azide
UniProt	Q92900
Localization	Nuclear, cytoplasmic
Applications	Western blot: 0.5-1ug/ml Immunohistochemistry: 1-2ug/ml Immunofluorescence: 2-4ug/ml
Limitations	This RENT1 antibody is available for research use only.



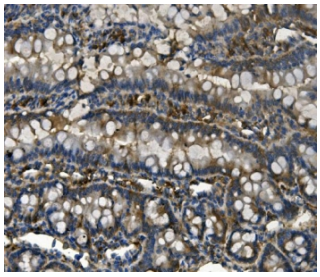
Immunohistochemistry analysis of RENT1 / hUPF1 antibody in human breast cancer tissue. FFPE human breast carcinoma shows cytoplasmic HRP-DAB brown staining in tumor epithelial cells, consistent with RENT1 expression. Staining is predominantly cytoplasmic with variable intensity among malignant cells, while nuclei are counterstained blue. Adjacent stromal elements demonstrate comparatively weaker staining. Heat induced epitope retrieval was performed by boiling tissue sections in EDTA buffer, pH 8.0, for 20 minutes followed by cooling prior to immunostaining.



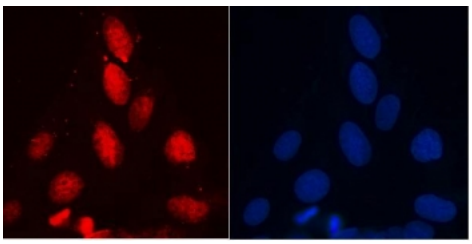
IHC staining of FFPE mouse intestine with RENT1 antibody. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



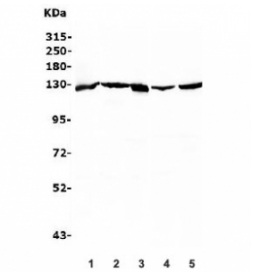
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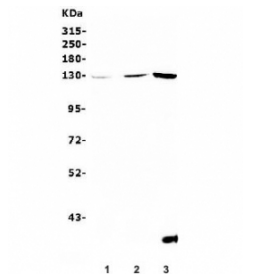
IHC staining of FFPE rat intestine with RENT1 antibody. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Immunofluorescent staining of FFPE human U-2 OS cells with RENT1 antibody (red) and DAPI nuclear stain (blue). HIER: steam section in pH6 citrate buffer for 20 min.



Western blot testing of human 1) HepG2, 2) Raji, 3) PC-3, 4) HeLa and 5) HEK293 lysate with RENT1 antibody. Predicted molecular weight ~124 kDa, but routinely observed at 130-140 kDa.



Western blot testing of 1) rat brain, 2) mouse brain and 3) mouse RAW264.7 lysate with RENT1 antibody. Predicted molecular weight ~124 kDa, but routinely observed at 130-140 kDa.

Description

RENT1 antibody, also known as hUPF1 antibody, recognizes Up-frameshift suppressor 1, a highly conserved ATP-

dependent RNA helicase encoded by the human UPF1 gene on chromosome 19p13.11. Commonly referred to as RENT1, regulator of nonsense transcripts 1, or hUPF1 in the literature, this protein is predominantly localized in the cytoplasm and shuttles between the nucleus and cytoplasm. RENT1 antibody targets a central component of the nonsense-mediated mRNA decay pathway, a surveillance mechanism that identifies and degrades mRNAs containing premature termination codons to prevent production of truncated proteins.

Up-frameshift suppressor 1 is a member of the superfamily 1 helicase family and contains conserved ATP-binding and RNA-binding domains that couple ATP hydrolysis to RNA remodeling. Through interactions with additional NMD factors such as UPF2 and UPF3, hUPF1 forms a surveillance complex associated with translating ribosomes. Upon recognition of aberrant termination events, hUPF1 undergoes regulated phosphorylation that promotes recruitment of decay machinery and mRNA degradation. Beyond nonsense-mediated mRNA decay, RENT1 participates in general mRNA turnover, Staufen-mediated decay, and regulation of transcripts involved in stress responses, proliferation, and differentiation.

UPF1 is broadly expressed across tissues, reflecting its fundamental role in post-transcriptional gene regulation. Subcellularly, hUPF1 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 coordinate RNA binding, ATPase activity, and protein-protein interactions. Dysregulation of UPF1 expression or activity has been implicated in cancer biology, viral replication, and neurodevelopmental disorders, where altered RNA surveillance influences transcript stability and gene expression programs.

RENT1 antibody is suitable for detecting hUPF1 expression in studies of RNA quality control, translational regulation, and disease-associated alterations in mRNA decay pathways. By enabling analysis of UPF1 distribution and abundance, this antibody supports research into fundamental mechanisms of RNA metabolism and cellular homeostasis.

Synonyms RENT1 antibody, hUPF1 antibody, UPF1 antibody, Up-frameshift suppressor 1 antibody, Regulator of nonsense transcripts 1 antibody, ATP-dependent RNA helicase UPF1 antibody, UPF1 RNA helicase antibody

Application Notes

Optimal dilution of the RENT1 antibody should be determined by the researcher.

Immunogen

Amino acids NMDSMPELQKLQQLKDETGELSSADEKRYRALKRT AE from the human protein were used as the immunogen for the RENT1 antibody.

Storage

After reconstitution, the RENT1 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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