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

RENT1 Antibody (Center)
Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP1905c

Specification

RENT1 Antibody (Center) - Product Information

Application	**WB,E**
Primary Accession	Q92900
Other Accession	Q9EPU0
Reactivity	**Human**
Predicted	**Mouse**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit IgG**
Antigen Region	**583-612**

RENT1 Antibody (Center) - Additional Information

Gene ID 5976

Other Names
Regulator of nonsense transcripts 1, 364-, ATP-dependent helicase RENT1, Nonsense mRNA reducing factor 1, NORF1, Up-frameshift suppressor 1 homolog, hUpf1, UPF1, KIAA0221, RENT1

Target/Specificity
This RENT1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 583-612 amino acids from the Central region of human RENT1.

Dilution
WB~~1:1000

Format
Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.

Storage
Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions
RENT1 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

RENT1 Antibody (Center) - 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.

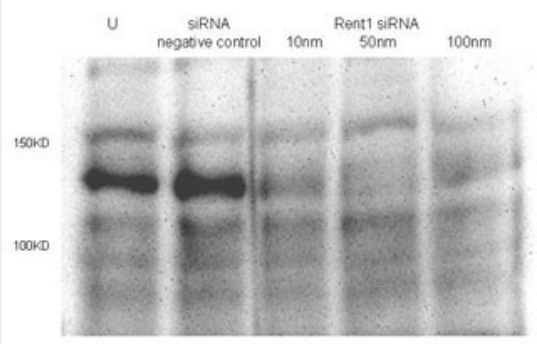
RENT1 Antibody (Center) - Protocols

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

RENT1 Antibody (Center) - Images

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



Total lysates (50ug per lane) from Hela cells untransfected (U) or transfected with negative siRNA control or Rent1 siRNAs of 10nm, 50nm to 100nm. Immunostaining was with polyclonal rabbit Rent1 antibody(AP1905c) overnight. The membrane was incubated with donkey anti-rabbit antibody for 1 hour. Antibody-reactive bands were revealed by chemiluminescence. Rent1 protein migrated between 100KD and 150KD. Data courtesy of Dr. Jingqiong Kang, Department of Neurology, Vanderbilt University.

RENT1 Antibody (Center) - Background

RENT1 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. 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.

RENT1 Antibody (Center) - References

Ohnishi, T., et al., Mol. Cell 12(5):1187-1200 (2003). Lykke-Andersen, J., Mol. Cell. Biol. 22(23):8114-8121 (2002). Carastro, L.M., et al., Nucleic Acids Res. 30(10):2232-2243 (2002). Mendell, J.T., et al., Science 298(5592):419-422 (2002). Serin, G., et al., Mol. Cell. Biol. 21(1):209-223 (2001).

RENT1 Antibody (Center) - Citations

- The intronic GABRG2 mutation, IVS6+2T-G, associated with childhood absence epilepsy altered subunit mRNA intron splicing, activated nonsense-mediated decay, and produced a stable truncated γ2 subunit.