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RENT1 Antibody (N-term E22) Blocking Peptide
Synthetic peptide
Catalog # BP1905a

Specification

RENT1 Antibody (N-term E22) Blocking Peptide - Product Information

Primary Accession Q92900

RENT1 Antibody (N-term E22) Blocking Peptide - 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
The synthetic peptide sequence used to generate the antibody AP1905a was selected from the N-term region of human RENT1. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

RENT1 Antibody (N-term E22) Blocking Peptide - 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:<a

href="http://www.uniprot.org/citations/25220460" target="_blank">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 (N-term E22) Blocking Peptide - Protocols

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

- Blocking Peptides

RENT1 Antibody (N-term E22) Blocking Peptide - Images

RENT1 Antibody (N-term E22) Blocking Peptide - 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.

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RENT1 Antibody (N-term E22) Blocking Peptide - 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).