

Rent2 (H-4): sc-398424

BACKGROUND

In eukaryotes, it is essential to have the ability to detect and degrade transcripts that lack full coding potential. Nonsense-mediated RNA decay (NMD) protects the organism by avoiding the translation of truncated peptides with dominant negative or deleterious gain-of-function potential. Rent1, a mammalian ortholog of Upflp, is essential for embryonic viability. Rent1 (also designated regulator of nonsense transcripts and HUf1) contains an N-terminal zinc finger-like domain, NTPase domains and a region comprised of domains that define Rent1 as a superfamily group I helicase. Rent1 protein has nucleic-acid-dependent ATPase activity and 5' to 3' helicase activity. In addition, Rent1 is an RNA-binding protein whose activity is modulated by ATP and directly interacts with Rent2, which is a mammalian homolog of Upf2p. Two mammalian orthologs to Upf3p, Rent3a and Rent3b, are encoded by two separate genes. Rent3b (also known as Rent3X) is encoded by an X-linked gene and localizes primarily to the nucleus, while Rent1 and Rent2 localize primarily in the cytoplasm. Specific Rent3 protein interactions with Y14 and spliced mRNA suggest Rent3a and Rent3b serve as a link between splicing and NMD in the cytoplasm.

REFERENCES

1. Perlick, H.A., et al. 1996. Mammalian orthologues of a yeast regulator of nonsense transcript stability. *Proc. Natl. Acad. Sci. USA* 93: 10928-10932.
2. Page, M.F., et al. 1999. SMG-2 is a phosphorylated protein required for mRNA surveillance in *Caenorhabditis elegans* and related to Upf1p of yeast. *Mol. Cell. Biol.* 19: 5943-5951.
3. Bhattacharya, A., et al. 2000. Characterization of the biochemical properties of the human Upf1 gene product that is involved in nonsense-mediated mRNA decay. *RNA* 6: 1226-1235.
4. Mendell, J.T., et al. 2000. Novel Upf2p orthologues suggest a functional link between translation initiation and nonsense surveillance complexes. *Mol. Cell. Biol.* 20: 8944-8957.
5. Medghalchi, S.M., et al. 2001. Rent1, a transeffector of nonsense-mediated mRNA decay, is essential for mammalian embryonic viability. *Hum. Mol. Genet.* 10: 99-105.

CHROMOSOMAL LOCATION

Genetic locus: UPF2 (human) mapping to 10p14; Upf2 (mouse) mapping to 2 A1.

SOURCE

Rent2 (H-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1234-1273 near the C-terminus of Rent2 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-398424 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Rent2 (H-4) is recommended for detection of Rent2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Rent2 siRNA (h): sc-38225, Rent2 siRNA (m): sc-38226, Rent2 shRNA Plasmid (h): sc-38225-SH, Rent2 shRNA Plasmid (m): sc-38226-SH, Rent2 shRNA (h) Lentiviral Particles: sc-38225-V and Rent2 shRNA (m) Lentiviral Particles: sc-38226-V.

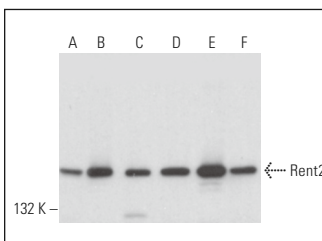
Molecular Weight of Rent2: 147 kDa.

Positive Controls: Y79 cell lysate: sc-2240, Ramos cell lysate: sc-2216 or Jurkat whole cell lysate: sc-2204.

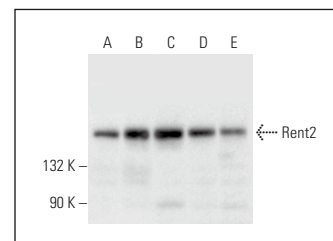
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Rent2 (H-4): sc-398424. Western blot analysis of Rent2 expression in Jurkat (A), GA-10 (B), M1 (C), HEL 92.1.7 (D), Daudi (E) and K-562 (F) whole cell lysates.



Rent2 (H-4): sc-398424. Western blot analysis of Rent2 expression in Y79 (A), Jurkat (B), Ramos (C), MCF7 (D) and Hep G2 (E) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Hou, Y., et al. 2021. YTHDC1-mediated augmentation of miR-30d in repressing pancreatic tumorigenesis via attenuation of RUNX1-induced transcriptional activation of Warburg effect. *Cell Death Differ.* 28: 3105-3124.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.