

Rent2 (G-9): sc-398812

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 Upfp, is essential for embryonic viability. Rent1 (also designated regulator of nonsense transcripts and HUpf1) 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 a X-linked gene and localizes primarily to the nucleus, while Rent 1 and Rent 2 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. 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.
4. 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.
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 (G-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1247-1273 near the C-terminus of Rent2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} lambda light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-398812 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Rent2 (G-9) 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.

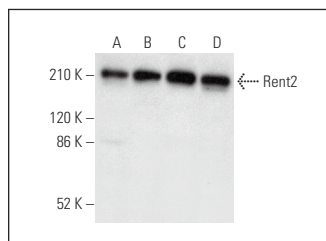
Molecular Weight of Rent2: 147 kDa.

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

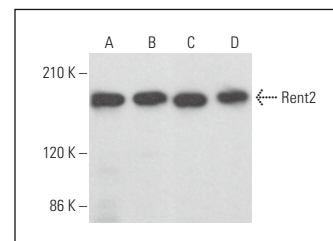
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG_λ BP-HRP: sc-516132 or m-IgG_λ BP-HRP (Cruz Marker): sc-516132-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-IgG_λ BP-FITC: sc-516185 or m-IgG_λ BP-PE: sc-516186 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Rent2 (G-9): sc-398812. Western blot analysis of Rent2 expression in Y79 (A), Jurkat (B), Ramos (C) and MCF7 (D) whole cell lysates.



Rent2 (G-9): sc-398812. Western blot analysis of Rent2 expression in HT-29 (A), SUP-T1 (B), TK-1 (C) and IB4 (D) whole cell lysates.

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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.