

# Rent3a (PL-B10): sc-134427

## 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 Upf1p, 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 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

- Perlick, H.A., et al. 1996. Mammalian orthologues of a yeast regulator of nonsense transcript stability. *Proc. Natl. Acad. Sci. USA* 93: 10928-10932.
- 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.
- 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.
- 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.
- 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.
- Serin, G., et al. 2001. Identification and characterization of human orthologues to *Saccharomyces cerevisiae* Upf2 protein and Upf3 protein (*Caenorhabditis elegans* SMG-4). *Mol. Cell. Biol.* 21: 209-223.
- Kim, V.N., et al. 2001. Role of the nonsense-mediated decay factor hUpf3 in the splicing-dependent exon-exon junction complex. *Science* 293: 1832-1836.

## CHROMOSOMAL LOCATION

Genetic locus: UPF3A (human) mapping to 13q34.

## SOURCE

Rent3a (PL-B10) is a mouse monoclonal antibody raised against recombinant Rent3a protein of human origin.

## PRODUCT

Each vial contains 100 µg IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

Rent3a (PL-B10) is recommended for detection of Rent3a of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Rent3a siRNA (h): sc-38227, Rent3a shRNA Plasmid (h): sc-38227-SH and Rent3a shRNA (h) Lentiviral Particles: sc-38227-V.

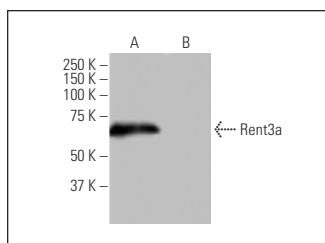
Molecular Weight of Rent3a: 58 kDa.

Positive Controls: human Rent3a transfected 293T whole cell lysate.

## 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).

## DATA



Rent3a (PL-B10): sc-134427. Western blot analysis of Rent3a expression in human Rent3a transfected (A) and non-transfected (B) 293T 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](http://www.scbt.com) for detailed protocols and support products.