



Rent3b (C-17): sc-20233

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 HUpp1) 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 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., Medghalchi, S.M., Spencer, F.A., Kendzior, R.J. Jr., and Dietz, H.C. 1996. Mammalian orthologues of a yeast regulator of nonsense transcript stability. *Proc. Natl. Acad. Sci. USA* 93: 10928-10932.
2. Page, M.F., Carr, B., Anders, K.R., Grimson, A., and Anderson, P. 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., Czaplinski, K., Trifillis, P., He, F., Jacobson, A., and Peltz, S.W. 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., Medghalchi, S.M., Lake, R.G., Noensie, E.N., and Dietz, H.C. 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., Frischmeyer, P.A., Mendell, J.T., Kelly, A.G., Lawler, A.M., and Dietz, H.C. 2001. Rent1, a transeffector of nonsense-mediated mRNA decay, is essential for mammalian embryonic viability. *Hum. Mol. Genet.* 10: 99-105.
6. Serin, G., Gersappe, A., Black, J.D., Aronoff, R., and Maquat, L.E. 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.
7. Kim, V.N., Kataoka, N., and Dreyfuss, G. 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: UPF3B (human) mapping to Xq25-q26; Upf3b (mouse) mapping to X A2.

SOURCE

Rent3b (C-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of Rent3b of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-20233 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Rent3b (C-17) is recommended for detection of Rent3b of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Molecular Weight of Rent3b: 58 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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 or our catalog for detailed protocols and support products.