SANTA CRUZ BIOTECHNOLOGY, INC.

Rent2 (H-300): sc-48801

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 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 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.

CHROMOSOMAL LOCATION

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

SOURCE

Rent2 (H-300) is a rabbit polyclonal antibody raised against amino acids 121-420 mapping within an internal region of Rent2 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. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-48801 X, 200 µg/0.1 ml.

APPLICATIONS

Rent2 (H-300) is recommended for detection of Rent2 of mouse, rat and 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)], 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).

Rent2 (H-300) is also recommended for detection of Rent2 in additional species, including equine, canine, bovine and avian.

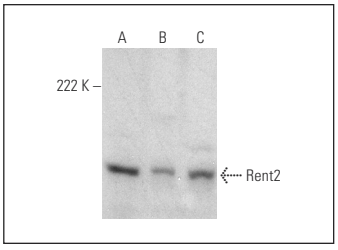
Suitable for use as control antibody for Rent2 siRNA (h): sc-38225, Rent2 siRNA (m): sc-38226, Rent2 shRNA Plasmid (h): sc-38225-SH, Rent2 shRNA Plasmid (m): sc-38226-SH, Rent2 shRNA (h) Lentiviral Particles: sc-38225-V and Rent2 shRNA (m) Lentiviral Particles: sc-38226-V.

Rent2 (H-300) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of Rent2: 147 kDa.

Positive Controls: GA-10 whole cell lysate: sc-364230, TK-1 whole cell lysate: sc-364798 or SUP-T1 whole cell lysate: sc-364796.

DATA



Rent2 (H-300): sc-48801. Western blot analysis of Rent2 expression in TK-1 (**A**), SUP-T1 (**B**) and GA-10 (**C**) 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 or our catalog for detailed protocols and support products.