SANTA CRUZ BIOTECHNOLOGY, INC.

Rpn10D (B-4): sc-514990

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

In eukaryotic cells, selective breakdown of cellular proteins is ensured by two distinct pathways. First, appropriate proteins are tagged for degradation by ubiquitination. Second, these multiubiquitinated proteins are degraded by the highly selective 26S Proteasome protein-destroying machinery. At specific stages of development, embryo- and tissue-specific components of the 26S Proteasome are formed, which are termed Rpn10a through Rpn10e. All members of this family can be generated by a single PSMD4 gene by developmentally regulated alternative splicing. PSMD4, originally identified as S5a (also designated antisecretory factor and multiubiquitin chain binding protein) is ubiquitously expressed and may perform proteolysis constitutively in a wide variety of cells. Rpn10D and Rpn10E may have embryo- or tissue-specific expression and may play specialized roles in early embryonic development.

REFERENCES

1. Lonnroth, I. and Lange, S. 1986. Purification and characterization of the antisecretory factor: a protein in the central nervous system and in the gut which inhibits intestinal hypersecretion induced by cholera toxin. Biochim. Biophys. Acta 883: 138-144.
2. Johansson, E., et al. 1995. Molecular cloning and expression of a pituitary gland protein modulating intestinal fluid secretion. J. Biol. Chem. 270: 20615-20620.
3. Coux, O., et al. 1996. Structure and functions of the 20S and 26S Proteasomes. Annu. Rev. Biochem. 65: 801-847.
4. Voges, D., et al. 1999. The 26S Proteasome: a molecular machine designed for controlled proteolysis. Annu. Rev. Biochem. 68: 1015-1068.
5. Kawahara, H., et al. 2000. Developmentally regulated, alternative splicing of the Rpn10 gene generates multiple forms of 26S Proteasomes. EMBO J. 19: 4144-4153.

CHROMOSOMAL LOCATION

Genetic locus: PSMD4 (human) mapping to 1q21.3; Psmd4 (mouse) mapping to 3 F2.1.

SOURCE

Rpn10D (B-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 301-320 near the C-terminus of Rpn10D of mouse origin.

PRODUCT

Each vial contains 200 µg IgM kappa light chain 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-514990 X, 200 µg/0.1 ml.

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.

APPLICATIONS

Rpn10D (B-4) is recommended for detection of Rpn10D 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 PSMD4 siRNA (h): sc-41385, PSMD4 siRNA (m): sc-41386, PSMD4 shRNA Plasmid (h): sc-41385-SH, PSMD4 shRNA Plasmid (m): sc-41386-SH, PSMD4 shRNA (h) Lentiviral Particles: sc-41385-V and PSMD4 shRNA (m) Lentiviral Particles: sc-41386-V.

Rpn10D (B-4) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

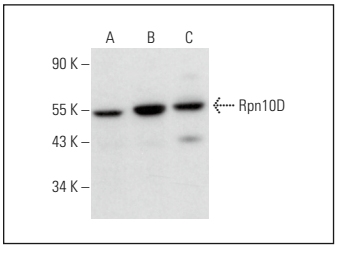
Molecular Weight of Rpn10D: 50 kDa.

Positive Controls: CCRF-CEM cell lysate: sc-2225, BYDP whole cell lysate: sc-364368 or mouse brain extract: sc-2253.

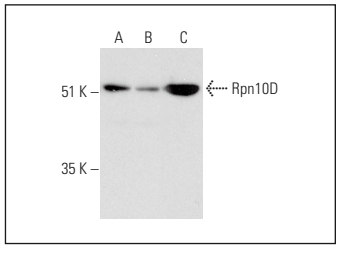
RECOMMENDED SUPPORT REAGENTS

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 L-Agarose: sc-2336 (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



Rpn10D (B-4): sc-514990. Western blot analysis of Rpn10D expression in CCRF-CEM (**A**), BYDP (**B**) and NIH/3T3 (**C**) whole cell lysates.



Rpn10D (B-4): sc-514990. Western blot analysis of Rpn10D expression in NIH/3T3 (**A**) and RAW 264.7 (**B**) whole cell lysates and mouse brain tissue extract (**C**).

SELECT PRODUCT CITATIONS

1. Gottlieb, C.D., et al. 2019. Acute unfolding of a single protein immediately stimulates recruitment of ubiquitin protein ligase E3C (UBE3C) to 26S Proteasomes. J. Biol. Chem. 294: 16511-16524.

PROTOCOLS

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