SANTA CRUZ BIOTECHNOLOGY, INC.

Rpn1 (y-300): sc-98270

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The proteasome is a multisubunit protease responsible for degrading proteins conjugated to ubiquitin. Substrates are targeted for proteolysis by the ubiquitin pathway by the addition of a polyubiquitin chain before being degraded by the 26S proteasome. The 26S proteasome is made up of two subunits, the 20S proteolytic subunit and the 19S regulatory particle, which recognizes and unfolds ubiquitinated proteins. The ubiquitinlike domains (Ubls) of Ubiquitin-like proteins Rad23 and Dsk2 bind both polyubiquitin chains and the 19S regulatory particle (RP) of the 26S proteasome. The Ubl domain mediates the binding of Rad23 to proteasomes, which in turn promotes DNA repair and modulates protein degradation, possibly by delivering ubiquitinylated cargo to proteasomes. Rad23 binds proteasomes by directly interacting with the base subcomplex of the regulatory particle of the proteasome. A component of the base, Rpn1, specifically recognizes the UBL domain of Rad23 through its leucine-rich-repeat-like (LRR-like) domain. Rpn1, for regulatory-particle non-ATPase subunit 1, is one of the largest subunits of proteasome. Base subunit Rpn10, however, does not mediate the binding of UBL proteins to the proteasome in yeast, although it can contribute to the binding of ubiquitin chains by intact proteasomes.

REFERENCES

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2. Wilkinson, C.R., Ferrell, K., Penney, M., Wallace, M., Dubiel, W. and Gordon, C. 2000. Analysis of a gene encoding Rpn10 of the fission yeast proteasome reveals that the polyubiquitin-binding site of this subunit is essential when Rpn12/Mts3 activity is compromised. J. Biol. Chem. 275: 15182-15192.
3. Saeki, Y., Sone, T., Toh-e, A. and Yokosawa, H. 2002. Identification of ubiquitin-like protein-binding subunits of the 26S proteasome. Biochem. Biophys. Res. Commun. 296: 813-819.
4. Elsasser, S., Gali, R.R., Schwickart, M., Larsen, C.N., Leggett, D.S., Muller, B., Feng, M.T., Tubing, F., Dittmar, G.A. and Finley, D. 2002. Proteasome subunit Rpn1 binds ubiquitin-like protein domains. Nat. Cell. Biol. 4: 725-730.
5. Zou, C.B., Nakajima-Shimada, J., Nara, T. and Aoki, T. 2000. Cloning and functional expression of Rpn1, a regulatory-particle non-ATPase subunit 1, of proteasome from *Trypanosoma cruzi*. Mol. Biochem. Parasitol. 110: 323-331.

SOURCE

Rpn1 (y-300) is a rabbit polyclonal antibody raised against amino acids 691-990 mapping near the C-terminus of Rpn1 of Saccharomyces cerevisiae origin.

PRODUCT

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

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

Rpn1 (y-300) is recommended for detection of Rpn1 of *Saccharomyces cerevisiae* 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).

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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.