SANTA CRUZ BIOTECHNOLOGY, INC.

Ubp-M (L-25): sc-134140

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Ubiquitin-processing protease-M (Ubp-M) belongs to a family of enzymes that regulate the degradation of ubiquitinated proteins by deubiquitination. Ubiquitin-mediated proteolysis requires the transfer of ubiquitin chains to lysine groups on selected cellular proteins, which then potentiates the proteolytic degradation of these conjugated substrates by the 26S proteasome. Ubps, which are also designated deubiquitinating enzymes (DUBs), regulate growth activity and differentiation. Ubp-M is localized to the cytosol, and, during the G_2/M phase transition through the completion of mitosis, Ubp-M is phosphorylated. This phosphorylation state coincides with an accumulation of free ubiquitin chains within the cell and an increased hydrolysis of ubiquitin conjugated proteins. Targets of Ubp-M include the histone proteins H2A and H2B, which are monoubiquitinated during interphase and anaphase and are deubuiquitinated during mitoisis. This deubiquitination of the histone proteins correlates to the condensation of the mitotic chromatin, indicating that Ubp-M influences histone function and, thereby, facilitates the organization of mitotic chromatin and directs the progression of cell growth.

REFERENCES

1. Goldknopf, I.L., et al. 1975. Isolation and characterization of protein A24, a "histone-like" non-histone chromosomal protein. J. Biol. Chem. 250: 7182-7187.
2. Hecht, A., et al. 1995. Histone H3 and H4 N-termini interact with SIR3 and SIR4 proteins: a molecular model for the formation of heterochromatin in yeast. Cell 80: 583-592.
3. Hochstrasser, M. 1995. Ubiquitin, proteasomes, and the regulation of intracellular protein degradation. Curr. Opin. Cell Biol. 7: 215-223.
4. Wilkinson, K.D., et al. 1995. Metabolism of the polyubiquitin degradation signal: structure, mechanism, and role of isopeptidase T. Biochemistry 34: 14535-14546.
5. Haas, A.L., et al. 1997. Pathways of ubiquitin conjugation. FASEB J. 11: 1257-1268.
6. Cai, S.Y., et al. 1999. A mutant deubiquitinating enzyme (Ubp-M) associates with mitotic chromosomes and blocks cell division. Proc. Natl. Acad. Sci. USA 96: 2828-2833.

CHROMOSOMAL LOCATION

Genetic locus: USP16 (human) mapping to 21q21.3.

SOURCE

Ubp-M (L-25) is a Protein A purified rabbit polyclonal antibody raised against synthetic Ubp-M peptide of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

Ubp-M (L-25) is recommended for detection of Ubp-M 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 Ubp-M siRNA (h): sc-41687, Ubp-M shRNA Plasmid (h): sc-41687-SH and Ubp-M shRNA (h) Lentiviral Particles: sc-41687-V.

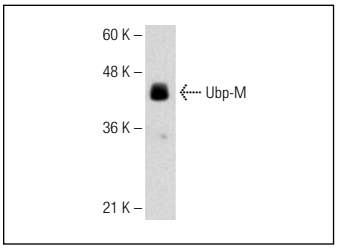
Molecular Weight of Ubp-M isoforms: 94/92/58/47 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227 or HL-60 whole cell lysate: sc-2209.

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).

DATA



Ubp-M (L-25): sc-134140. Western blot analysis of Ubp-M expression in Hep G2 whole cell lysate.

STORAGE

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

PROTOCOLS

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