

Ubp-M (N-20): sc-9765

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 G₂/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 deubiquitinated during mitosis. 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

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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. *Biochem.* 34: 14535-14546.
5. Haas, A.L. and Siepmann, T.J. 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 (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Ubp-M 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-9765 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Ubp-M (N-20) is recommended for detection of Ubp-M 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).

Ubp-M (N-20) is also recommended for detection of Ubp-M in additional species, including equine, canine, bovine and porcine.

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

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.