SANTA CRUZ BIOTECHNOLOGY, INC.

Ub (Ubi-1): sc-52750

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Ubiquitin (Ub) is among the most phylogenetically conserved proteins known. The primary function of ubiquitin is to clear abnormal, foreign and improperly folded proteins by targeting them for degradation by the 26S proteosome. This small, 76 amino acid protein can be covalently attached to cellular proteins via an isopeptide linkage between the carboxy-terminal group of ubiquitin and lysine amino groups on the acceptor protein. For proteolysis to occur, ubiquitin oligomers must be assembled. Ubiquitin chains on proteolytic substrates are commonly found to have an isopeptide bridge between lysine 48 of one ubiquitin molecule and the carboxy-terminus of a neighboring ubiquitin molecule. Ubiquitin also plays a role in regulating signal transduction cascades through the elimination inhibitory proteins, such as IκBα and p27.

REFERENCES

1. Ciechanover, A. 1994. The ubiquitin-proteasome proteolytic pathway. Cell 79: 13-21.
2. Ciechanover, A. and Schwartz, A.L. 1994. The ubiquitin-mediated proteolytic pathway: mechanisms of recognition of the proteolytic substrate and involvement in the degradation of native cellular proteins. FASEB J. 8: 182-191.
3. Hochstrasser, M. 1995. Ubiquitin, proteasomes and the regulation of intracellular protein degradation. Curr. Opin. Cell Biol. 7: 215-223.
4. Jennissen, H.P. 1995. Ubiquitin and the enigma of intracellular protein degradation. Eur. J. Biochem. 231: 1-30.
5. Muller, S. and Schwartz, L.M. 1995. Ubiquitin in homeostasis, development and disease. Bioessays 17: 677-684.
6. Pagano, M., et al. 1995. Role of the ubiquitin-proteasome pathway in regulating abundance of the cyclin-dependent kinase inhibitor p27. Science 269: 682-685.

SOURCE

Ub (Ubi-1) is a mouse monoclonal antibody raised against purified ubiquitin of bovine origin.

PRODUCT

Each vial contains 50 µl ascites containing IgG_1 with < 0.1% sodium azide.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

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.

APPLICATIONS

Ub (Ubi-1) is recommended for detection of Ub of mouse, human, bovine, porcine and guinea pig origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:100-1:5000), immunoprecipitation [1-2 µl per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution to be determined by researcher, dilution range 1:50-1:2500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution to be determined by researcher, dilution range 1:50-1:2500).

Suitable for use as control antibody for Ub siRNA (h): sc-29513, Ub siRNA (m): sc-36770, Ub shRNA Plasmid (h): sc-29513-SH, Ub shRNA Plasmid (m): sc-36770-SH, Ub shRNA (h) Lentiviral Particles: sc-29513-V and Ub shRNA (m) Lentiviral Particles: sc-36770-V.

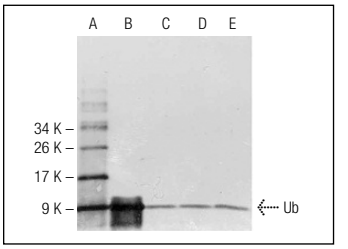
Molecular Weight of Ub: 8.5 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, NIH/3T3 whole cell lysate: sc-2210 or Jurkat whole cell lysate: sc-2204.

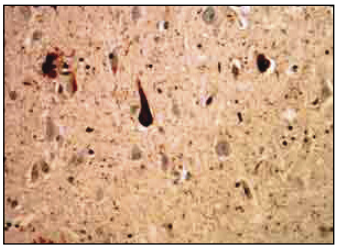
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (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-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2050 or ABC: sc-2017 mouse IgG Staining Systems.

DATA



Ub (Ubi-1): sc-52750. Western blot analysis of polyubiquitin (**A**) and pure ubiquitin (**B**) fusion proteins and Ub expression in adult rat cortex (**C**), adult rat cerebellum (**D**) and adult rat brain stem (**E**) tissue extract.



Ub (Ubi-1): sc-52750. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human Alzheimer's cerebral cortex tissue showing nuerofibrillary tangles and dystrophic neurite localization.

SELECT PRODUCT CITATIONS

1. Wang, Y.T., et al. 2008. Sumoylation of specificity protein 1 augments its degradation by changing the localization and increasing the specificity protein 1 proteolytic process. J. Mol. Biol. 380: 869-885.