SANTA CRUZ BIOTECHNOLOGY, INC.

Ub (10C2-2): sc-58448

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 Lys 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., et al. 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. Muller, S., et al. 1995. Ubiquitin in homeostasis, development and disease. Bioessays 17: 677-684.
5. Jennissen, H.P. 1995. Ubiquitin and the enigma of intracellular protein degradation. Eur. J. Biochem. 231: 1-30.
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.
7. Hochstrasser, M. 1996. Protein degradation or regulation: Ub the judge. Cell 84: 813-815.
8. Chen, Z.J., et al. 1996. Site-specific phosphorylation of IκBα by a novel ubiquitination-dependent protein kinase activity. Cell 84: 853-862.

CHROMOSOMAL LOCATION

Genetic locus: UBB (human) mapping to 17p11.2; Ubb (mouse) mapping to 11 B2.

SOURCE

Ub (10C2-2) is a mouse monoclonal antibody raised against Ub from red blood cells of bovine origin.

PRODUCT

Each vial contains 250 µl culture supernatant containing IgG_1 with < 0.1% sodium azide.

RESEARCH USE

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

APPLICATIONS

Ub (10C2-2) is recommended for detection of Ub of mouse, rat and human origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:10-1:200), immunofluorescence (starting dilution to be determined by researcher, dilution range 1:10-1:200) and immunohistochemistry (including paraffin-embedded sections) (starting dilution to be determined by researcher, dilution range 1:10-1:200).

Ub (10C2-2) is also recommended for detection of Ub in additional species, including bovine.

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: MCF7 whole cell lysate: sc-2206, HeLa whole cell lysate: sc-2200 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) 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. 3) Immunohistochemistry: use ImmunoCruz™: sc-2050 or ABC: sc-2017 mouse IgG Staining Systems.

SELECT PRODUCT CITATIONS

1. Zhou, Z., et al. 2008. Endogenous dopamine (DA) renders dopaminergic cells vulnerable to challenge of proteasome inhibitor MG132. Free Radic. Res. 42: 456-466.
2. Vinothini, G., et al. 2010. Mitochondria-mediated apoptosis in patients with adenocarcinoma of the breast: correlation with histological grade and menopausal status. Breast 20: 86-92.
3. Murugan, R.S., et al. 2010. Intrinsic apoptosis and NFκB signaling are potential molecular targets for chemoprevention by black tea polyphenols in HepG2 cells *in vitro* and in a rat hepatocarcinogenesis model *in vivo*. Food Chem. Toxicol. 48: 3281-3287.

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.