SANTA CRUZ BIOTECHNOLOGY, INC.

UBC12 (Y-20): sc-79187

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Ubiquitination is an important mechanism through which three classes of enzymes act in concert to target short-lived or abnormal proteins for destruction. The three classes of enzymes involved in ubiquitination are the ubiquitin-activating enzymes (E1s), the ubiquitin-conjugating enzymes (E2s) and the ubiquitin-protein ligases (E3s). UBC12, also known as UBE2M (ubiquitin-conjugating enzyme E2M), hUbc12 or UBC-RS2, is a 183 amino acid member of the E2 ubiquitin-conjugating enzyme family. UBC12 is linked with NEDD8 (neural precursor cell expressed, developmentally downregulated 8), a ubiquitin-like protein. Via this interaction, UBC12 facilitates the attachment of NEDD8 to proteins targeted for degradation. Due to its ability to control the conjugation of NEDD8 to cellular proteins, UBC12 is thought to play a role in cell proliferation events.

REFERENCES

1. 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.
2. Hochstrasser, M. 1995. Ubiquitin, proteasomes and the regulation of intracellular protein degradation. Curr. Opin. Cell Biol. 7: 215-223.
3. Osaka, F., Kawasaki, H., Aida, N., Saeki, M., Chiba, T., Kawashima, S., Tanaka, K. and Kato, S. 1998. A new NEDD8-ligating system for cullin-4A. Genes Dev. 12: 2263-2268.
4. Gong, L. and Yeh, E.T. 1999. Identification of the activating and conjugating enzymes of the NEDD8 conjugation pathway. J. Biol. Chem. 274: 12036-12042.
5. Wada, H., Yeh, E.T. and Kamitani, T. 2000. A dominant-negative UBC12 mutant sequesters NEDD8 and inhibits NEDD8 conjugation *in vivo*. J. Biol. Chem. 275: 17008-17015.
6. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 603173. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
7. Huang, D.T., Miller, D.W., Mathew, R., Cassell, R., Holton, J.M., Roussel, M.F. and Schulman, B.A. 2004. A unique E1-E2 interaction required for optimal conjugation of the ubiquitin-like protein NEDD8. Nat. Struct. Mol. Biol. 11: 927-935.
8. Huang, D.T., Paydar, A., Zhuang, M., Waddell, M.B., Holton, J.M. and Schulman, B.A. 2005. Structural basis for recruitment of UBC12 by an E2 binding domain in NEDD8's E1. Mol. Cell 17: 341-350.

CHROMOSOMAL LOCATION

Genetic locus: UBE2M (human) mapping to 19q13.43; Ube2m (mouse) mapping to 7 A1.

SOURCE

UBC12 (Y-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of UBC12 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-79187 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

UBC12 (Y-20) is recommended for detection of UBC12 of mouse, rat and 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).

UBC12 (Y-20) is also recommended for detection of UBC12 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for UBC12 siRNA (h): sc-76786, UBC12 siRNA (m): sc-76787, UBC12 shRNA Plasmid (h): sc-76786-SH, UBC12 shRNA Plasmid (m): sc-76787-SH, UBC12 shRNA (h) Lentiviral Particles: sc-76786-V and UBC12 shRNA (m) Lentiviral Particles: sc-76787-V.

Molecular Weight of UBC12: 21 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204 or Ramos cell lysate: sc-2216.

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.