SANTA CRUZ BIOTECHNOLOGY, INC.

UBE2A/B (A-18): sc-10479

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The Power to Question

BACKGROUND

The ubiquitin (Ub) pathway involves three sequential enzymatic steps that facilitate the conjugation of Ub and Ub-like molecules to specific protein substrates. The first step requires the ATP-dependent activation of the Ub C-terminus and the assembly of multi-Ub chains by the Ub-activating enzyme known as the E1 component. The Ub chain is then conjugated to the Ub-conjugating enzyme (E2) to generate an intermediate Ub-E2 complex. The Ub-ligase (E3) then catalyzes the transfer of Ub from E2 to the appropriate protein substrate. UBE2A (ubiquitin-conjugating enzyme E2 A) and UBE2B (ubiquitin-conjugating enzyme E2 B) are both Ub-conjugating enzymes that are essential to postreplication repair of UV-damaged DNA. UBE2A and UBE2B are both nuclear and cell membrane proteins that have been found to interact with Rad18.

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. Bai, C., et al. 1996. SKP1 connects cell cycle regulators to the ubiquitin proteolysis machinery through a novel motif, the F-box. Cell 86: 263-274.
5. Liakopoulos, D., et al. 1998. A novel protein modification pathway related to the ubiquitin system. EMBO J. 17: 2208-2214.
6. Schwarz, S.E., et al. 1998. The ubiquitin-like proteins SMT3 and SUMO-1 are conjugated by the UBC9 E2 enzyme. Proc. Natl. Acad. Sci. USA 95: 560-564.
7. Gong, L., et al. 1999. Identification of the activating and conjugating enzymes of the NEDD8 conjugation pathway. J. Biol. Chem. 274: 12036-12042.
8. Raboy, B., et al. 1999. Heat-induced cell cycle arrest of Saccharomyces cerevisiae: involvement of the RAD6/UBC2 and WSC2 genes in its reversal. Mol. Microbiol. 32: 729-739.
9. Blondel, M., et al. 2000. Isolation and characterization of HRT1 using a genetic screen for mutants unable to degrade Gic2p in Saccharomyces cerevisiae. Genetics 155: 1033-1044.

CHROMOSOMAL LOCATION

Genetic locus: UBE2A (human) mapping to Xq24, UBE2B (human) mapping to 5q31.1; Ube2a (mouse) mapping to X A3.3, Ube2b (mouse) mapping to 11 B1.3.

SOURCE

UBE2A/B (A-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of UBE2A 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-10479 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

UBE2A/B (A-18) is recommended for detection of UBE2A and UBE2B 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).

UBE2A/B (A-18) is also recommended for detection of UBE2A and UBE2B in additional species, including equine, canine, bovine, porcine and avian.

Molecular Weight of UBE2A/B: 17 kDa.

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.

SELECT PRODUCT CITATIONS

1. Howard, R.A., et al. 2007. Ubiquitin conjugating enzymes participate in polyglutamine protein aggregation. BMC Cell Biol. 8: 32.

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.