SANTA CRUZ BIOTECHNOLOGY, INC.

UBA3 (B-10): sc-377352

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Ubiquitin is an abundant, highly conserved protein found in all eukaryotic cells either free or covalently attached to cellular proteins. The primary function of ubiquitin in mammalian systems is to clear abnormal, foreign and improperly folded proteins by targeting them for proteosome degradation. UBA3 (ubiquitin-like modifier activating enzyme 3), also known as NEDD8-activating enzyme E1 catalytic subunit or UBE1C (ubiquitin-activating enzyme E1C), is a 463 amino acid protein belonging to the ubiquitin-activating E1 family and UBA3 subfamily. Ubiquitously expressed, UBA3 acts as an activator to NEDD8, a ubiquitin-like protein, thus regulating cell division, signaling and embryogenesis. UBA3 exists as two isoforms due to alternative splicing events.

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. Bai, C., Sen, P., Hofmann, K., Ma, L., Goebl, M., Harper, J.W. and Elledge, S.J. 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., Doenges, G., Matuschewski, K. and Jentsch, S. 1998. A novel protein modification pathway related to the ubiquitin system. EMBO J. 17: 2208-2214.
6. 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.

CHROMOSOMAL LOCATION

Genetic locus: UBA3 (human) mapping to 3p14.1; Uba3 (mouse) mapping to 6 D3.

SOURCE

UBA3 (B-10) is a mouse monoclonal antibody raised against amino acids 317-463 mapping at the C-terminus of UBA3 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

UBA3 (B-10) is recommended for detection of UBA3 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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).

UBA3 (B-10) is also recommended for detection of UBA3 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for UBA3 siRNA (h): sc-76783, UBA3 shRNA Plasmid (h): sc-76783-SH and UBA3 shRNA (h) Lentiviral Particles: sc-76783-V.

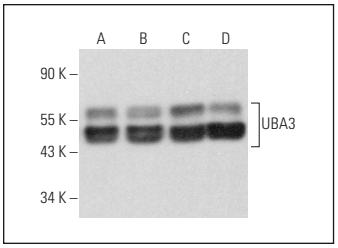
Molecular Weight of UBA3: 58 kDa.

Positive Controls: EOC 20 whole cell lysate: sc-364187, 3T3-L1 cell lysate: sc-2243 or C6 whole cell lysate: sc-364373.

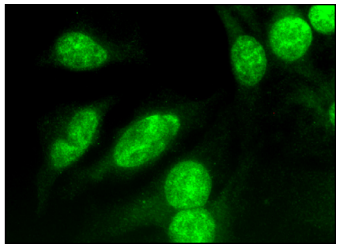
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



UBA3 (B-10): sc-377352. Western blot analysis of UBA3 expression in EOC 20 (**A**), 3T3-L1 (**B**), C6 (**C**) and RPE-J (**D**) whole cell lysates.



UBA3 (B-10): sc-377352. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Guo, Z., Wang, S., Xie, Y., Han, Y., Hu, S., Guan, H., Xie, D., Bai, C., Liu, X., Gu, Y., Zhou, P.K. and Ma, T. 2020. HUWE1-dependent DNA-PK_{CS} neddylation modulates its autophosphorylation in DNA damage response. Cell Death Dis. 11: 400.

RESEARCH USE

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