SANTA CRUZ BIOTECHNOLOGY, INC.

UBA2 (B-6): sc-376305

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The small ubiquitin-related modifier protein SUMO-1 belongs to the ubiquitin-like protein family, which are synthesized as precursor proteins that undergo processing before conjugation to target proteins. However, SUMO and ubiquitin differ with respect to targeting. Ubiquitination predominantly targets proteins for degradation, whereas sumoylation targets proteins to a variety of cellular processes, including nuclear transport, transcriptional regulation, apoptosis, and protein stability. SUMO-1 utilizes homologues of the E1 and E2 enzymes for conjugation to proteins, which include IκBα, MDM2, p53, PML, and RanGap1. AOS1 is homologous to the N-terminal half of E1 and UBA2 is homologous to the C-terminal half of E1. These proteins form a heterodimer that activates SUMO-1.

REFERENCES

1. Duprez, E., et al. 1999. SUMO-1 modification of the acute promyelocytic leukaemia protein PML: implications for nuclear localisation. J. Cell Sci. 112: 381-393.
2. Gong, L., et al. 1999. Molecular cloning and character the sentrin-activating enzyme complex. FEBS Lett. 448: 185-189.
3. Okuma, T., et al. 1999. *In vitro* SUMO-1 modification requires two enzymatic steps, E1 and E2. Biochem. Biophys. Res. Commun. 254: 693-698.
4. Schwienhorst, I., et al. 2000. SUMO conjugation and deconjugation. Mol. Gen. Genet. 263: 771-786.

CHROMOSOMAL LOCATION

Genetic locus: UBA2 (human) mapping to 19q13.11; Uba2 (mouse) mapping to 7 B1.

SOURCE

UBA2 (B-6) is a mouse monoclonal antibody raised against amino acids 138-292 mapping within an internal region of UBA2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

UBA2 (B-6) is available conjugated to agarose (sc-376305 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376305 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376305 PE), fluorescein (sc-376305 FITC), Alexa Fluor® 488 (sc-376305 AF488), Alexa Fluor® 546 (sc-376305 AF546), Alexa Fluor® 594 (sc-376305 AF594) or Alexa Fluor® 647 (sc-376305 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376305 AF680) or Alexa Fluor® 790 (sc-376305 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

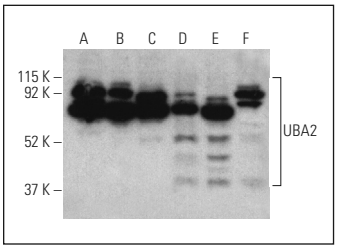
UBA2 (B-6) is recommended for detection of UBA2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for UBA2 siRNA (h): sc-61740, UBA2 siRNA (m): sc-61741, UBA2 shRNA Plasmid (h): sc-61740-SH, UBA2 shRNA Plasmid (m): sc-61741-SH, UBA2 shRNA (h) Lentiviral Particles: sc-61740-V and UBA2 shRNA (m) Lentiviral Particles: sc-61741-V.

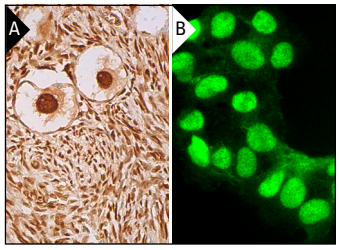
Molecular Weight of UBA2: 90 kDa.

Positive Controls: HEL 92.1.7 cell lysate: sc-2270, M1 whole cell lysate: sc-364782 or K-562 whole cell lysate: sc-2203.

DATA



UBA2 (B-6) HRP: sc-376305 HRP. Direct western blot analysis of UBA2 expression in K-562 (**A**), HEL 92.1.7 (**B**), M1 (**C**), WEHI-231 (**D**), RAW 264.7 (**E**) and Y79 (**F**) whole cell lysates.



UBA2 (B-6): sc-376305. Immunoperoxidase staining of formalin fixed, paraffin-embedded human ovary tissue showing nuclear staining of follicle cells, ovarian stroma cells and oocytes (**A**). Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear localization (**B**).

SELECT PRODUCT CITATIONS

1. Josa-Prado, F., et al. 2019. Developmental profiles of SUMOylation pathway proteins in rat cerebrum and cerebellum. PLoS ONE 14: e0212857.
2. Mete, B., et al. 2022. Human immunodeficiency virus type 1 impairs sumoylation. Life Sci. Alliance 5: e202101103.
3. Yang, W., et al. 2022. Epac1 activation by cAMP regulates cellular SUMOylation and promotes the formation of biomolecular condensates. Sci. Adv. 8: eabm2960.
4. Singhal, J., et al. 2022. Host SUMOylation pathway negatively regulates protective immune responses and promotes *Leishmania donovani* survival. Front. Cell. Infect. Microbiol. 12: 878136.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.