SANTA CRUZ BIOTECHNOLOGY, INC.

Ubr1 (A-5): sc-515753

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The N-end rule relates the *in vivo* half-life of a protein to the composition of its N-terminal residues. The N-end rule pathway is part of the ubiquitin system, which involves a three-step mechanism. Proteins targeted for degradation are bound on their N-terminal residue by Ubr1 (also designated E3 α and N-recognin), which catalyzes the covalent attachment of ubiquitin to the protein substrate. Two zinc finger domains and the RING-H2 finger domain of Ubr1 are essential for substrate recognition. Ubr1 is located on mouse chromosome 2 and on human chromosome 15 in the syntenic region. Ubr1 is ubiquitously expressed in adult mouse, with the highest expression detected in skeletal muscle and heart. In mouse embryo, Ubr1 is primarily expressed in the branchial arches and in the tail and limb buds.

CHROMOSOMAL LOCATION

Genetic locus: UBR1 (human) mapping to 15q15.2; Ubr1 (mouse) mapping to 2 E5.

SOURCE

Ubr1 (A-5) is a mouse monoclonal antibody raised against amino acids 156-386 mapping within an internal region of Ubr1 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.

Ubr1 (A-5) is available conjugated to agarose (sc-515753 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515753 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515753 PE), fluorescein (sc-515753 FITC), Alexa Fluor® 488 (sc-515753 AF488), Alexa Fluor® 546 (sc-515753 AF546), Alexa Fluor® 594 (sc-515753 AF594) or Alexa Fluor® 647 (sc-515753 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515753 AF680) or Alexa Fluor® 790 (sc-515753 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Ubr1 (A-5) is recommended for detection of Ubr1 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).

Suitable for use as control antibody for Ubr1 siRNA (h): sc-106918, Ubr1 siRNA (m): sc-41688, Ubr1 shRNA Plasmid (h): sc-106918-SH, Ubr1 shRNA Plasmid (m): sc-41688-SH, Ubr1 shRNA (h) Lentiviral Particles: sc-106918-V and Ubr1 shRNA (m) Lentiviral Particles: sc-41688-V.

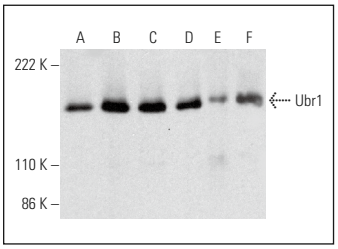
Molecular Weight of Ubr1: 230 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or K-562 whole cell lysate: sc-2203.

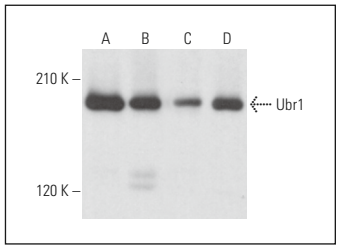
RECOMMENDED SUPPORT REAGENTS

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



Ubr1 (A-5): sc-515753. Western blot analysis of Ubr1 expression in HeLa (**A**), Jurkat (**B**), K-562 (**C**) and MDA-MB-231 (**D**) whole cell lysates and human umbilical (**E**) and human skeletal muscle (**F**) tissue extracts.



Ubr1 (A-5): sc-515753. Western blot analysis of Ubr1 expression in HeLa (**A**), ALL-SIL (**B**), BT-20 (**C**) and TK-1 (**D**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Vu, T.T.M. and Varshavsky, A. 2020. The ATF3 transcription factor is a short-lived substrate of the Arg/N-degron pathway. Biochemistry 59: 2796-2812.
2. Zhang, Y., et al. 2022. Amelioration of hepatic steatosis by dietary essential amino acid-induced ubiquitination. Mol. Cell 82: 1528-1542.e10.
3. Moorthy, B.T., et al. 2022. The evolutionarily conserved arginyltransferase 1 mediates a pVHL-independent oxygen-sensing pathway in mammalian cells. Dev. Cell 57: 654-669.e9.
4. Zhang, J., et al. 2023. Single amino acid-based PROTACs trigger degradation of the oncogenic kinase BCR-ABL in chronic myeloid leukemia (CML). J. Biol. Chem. 299: 104994.

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 for detailed protocols and support products.