SANTA CRUZ BIOTECHNOLOGY, INC.

Ubiquitin (P4D1): sc-8017

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Ubiquitin (Ub) is among the most phylogenetically conserved proteins known. The primary function of ubiquitin is to clear abnormal, foreign and improperly folded proteins by targeting them for degradation by the 26S Proteosome. This small, 76 amino acid protein can be covalently attached to cellular proteins via an isopeptide linkage between the carboxy-terminal group of ubiquitin and lysine amino groups on the acceptor protein. For proteolysis to occur, ubiquitin oligomers must be assembled. Ubiquitin chains on proteolytic substrates are commonly found to have an isopeptide bridge between Lys 48 of one ubiquitin molecule and the carboxy-terminus of a neighboring ubiquitin molecule. Ubiquitin also plays a role in regulating signal transduction cascades through the elimination inhibitory proteins, such as IκB-α and p27.

SOURCE

Ubiquitin (P4D1) is a mouse monoclonal antibody raised against amino acids 1-76 representing full length Ubiquitin of bovine 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.

Ubiquitin (P4D1) is available conjugated to agarose (sc-8017 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-8017 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-8017 PE), fluorescein (sc-8017 FITC), Alexa Fluor® 488 (sc-8017 AF488), Alexa Fluor® 546 (sc-8017 AF546), Alexa Fluor® 594 (sc-8017 AF594) or Alexa Fluor® 647 (sc-8017 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-8017 AF680) or Alexa Fluor® 790 (sc-8017 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, Ubiquitin (P4D1) is available conjugated to biotin (sc-8017 B), 200 µg/ml, for WB, IHC(P) and ELISA; and to Alexa Fluor® 405 (sc-8017 AF405, 200 µg/ml), for IF, IHC(P) and FCM.

APPLICATIONS

Ubiquitin (P4D1) is recommended for detection of Ubiquitin, poly-ubiquitinated and ubiquitinated proteins of mouse, rat, human and *Drosophila melanogaster* origin by Western Blotting (starting dilution 1:200, 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), flow cytometry (1 µg per 1 x 10^6 cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Ubiquitin siRNA (h): sc-29513, Ubiquitin siRNA (m): sc-36770, Ubiquitin shRNA Plasmid (h): sc-29513-SH, Ubiquitin shRNA Plasmid (m): sc-36770-SH, Ubiquitin shRNA (h) Lentiviral Particles: sc-29513-V and Ubiquitin shRNA (m) Lentiviral Particles: sc-36770-V.

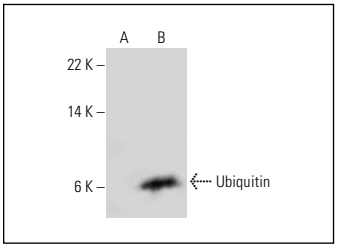
Molecular Weight of Ubiquitin: 9 kDa.

Positive Controls: Ubiquitin (h): 293T Lysate: sc-111402, HeLa whole cell lysate: sc-2200 or Jurkat whole cell lysate: sc-2204.

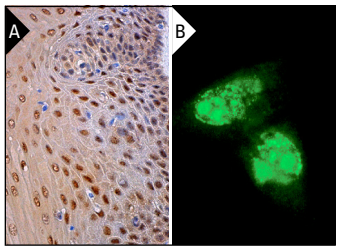
STORAGE

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

DATA



Ubiquitin (P4D1): sc-8017. Western blot analysis of Ubiquitin expression in non-transfected: sc-117752 (**A**) and human Ubiquitin transfected: sc-111402 (**B**) 293T whole cell lysates.



Ubiquitin (P4D1) HRP: sc-8017 HRP. Direct immunoperoxidase staining of formalin fixed, paraffin-embedded human oral mucosa tissue showing nuclear and cytoplasmic staining of squamous epithelial cells (**A**). Ubiquitin (P4D1): sc-8017. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing nuclear accumulation of ubiquitinated proteins (**B**).

SELECT PRODUCT CITATIONS

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2. Naumann, C., et al. 2016. Generation of artificial N-end rule substrate proteins *in vivo* and *in vitro*. Methods Mol. Biol. 1450: 55-83.
3. Li, J., et al. 2017. Polycomb group proteins RING1A and RING1B regulate the vegetative phase transition in *Arabidopsis*. Front. Plant Sci. 8: 867.
4. Liu, C., et al. 2018. Proteostasis by STUB1/HSP70 complex controls sensitivity to androgen receptor targeted therapy in advanced prostate cancer. Nat. Commun. 9: 4700.
5. Wang, H., et al. 2019. Interplay of MKP-1 and Nrf2 drives tumor growth and drug resistance in non-small cell lung cancer. Aging 11: 11329-11346.
6. Nieto, A., et al. 2020. βarrestin-1 regulates DNA repair by acting as an E3-Ubiquitin ligase adaptor for 53BP1. Cell Death Differ. 27: 1200-1213.
7. Nissinen, T.A., et al. 2021. Muscle follistatin gene delivery increases muscle protein synthesis independent of periodical physical inactivity and fasting. FASEB J. 35: e21387.
8. Pham, D.V., et al. 2022. Adiponectin triggers breast cancer cell death via fatty acid metabolic reprogramming. J. Exp. Clin. Cancer Res. 41: 9.
9. Peng, K., et al. 2023. Effects of UBE3A on cell and liver metabolism through the ubiquitination of PDHA1 and ACAT1. Biochemistry 62: 1274-1286.

RESEARCH USE

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