SANTA CRUZ BIOTECHNOLOGY, INC.

Ubiquitin (P4G7): sc-53509

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 (P4G7) is a mouse monoclonal antibody raised against full length denatured 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 (P4G7) is available conjugated to agarose (sc-53509 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-53509 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53509 PE), fluorescein (sc-53509 FITC), Alexa Fluor® 488 (sc-53509 AF488), Alexa Fluor® 546 (sc-53509 AF546), Alexa Fluor® 594 (sc-53509 AF594) or Alexa Fluor® 647 (sc-53509 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53509 AF680) or Alexa Fluor® 790 (sc-53509 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

Ubiquitin (P4G7) is recommended for detection of Ubiquitin, polyubiquitin and Ubiquitin-conjugated proteins of mouse, rat, human, bovine and yeast 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) 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: NIH/3T3 whole cell lysate: sc-2210, HeLa whole cell lysate: sc-2200 or MCF7 whole cell lysate: sc-2206.

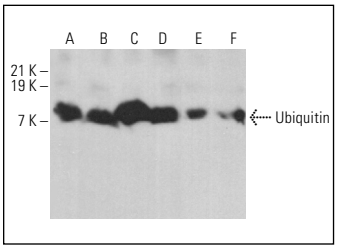
RESEARCH USE

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

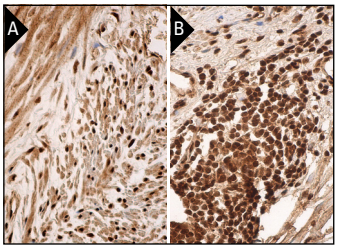
STORAGE

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

DATA



Ubiquitin (P4G7): sc-53509. Western blot analysis of Ubiquitin expression in NIH/3T3 (**A**), Sol8 (**B**), KNRK (**C**), PC-12 (**D**), HeLa (**E**) and MCF7 (**F**) whole cell lysates.



Ubiquitin (P4G7): sc-53509. Immunoperoxidase staining of formalin fixed, paraffin-embedded human appendix (smooth muscle) tissue showing nuclear and cytoplas-mic staining of smooth muscle cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human appendix tissue showing nuclear staining of lymphoid cells (**B**).

SELECT PRODUCT CITATIONS

1. Gies, E., et al. 2010. Niclosamide prevents the formation of large Ubiquitin-containing aggregates caused by proteasome inhibition. PLoS ONE 5: e14410.
2. Trisciuoglio, D., et al. 2011. Involvement of BH4 domain of Bcl-2 in the regulation of HIF-1-mediated VEGF expression in hypoxic tumor cells. Cell Death Differ. 18: 1024-1035.
3. Schmees, C., et al. 2012. Macropinocytosis of the PDGF β-receptor promotes fibroblast transformation by H-RasG12V. Mol. Biol. Cell 23: 2571-2582.
4. Donohue, E., et al. 2014. Induction of covalently crosslinked p62 oligomers with reduced binding to polyubiquitinated proteins by the autophagy inhibitor verteporfin. PLoS ONE 9: e114964.
5. Mathur, R., et al. 2015. Skp1 independent function of Cdc53/Cul1 in F-box protein homeostasis. PLoS Genet. 11: e1005727.
6. Parisi, E., et al. 2018. Cdc48/p97 segregase is modulated by cyclin-dependent kinase to determine cyclin fate during G_1 progression. EMBO J. 37: e98724.
7. Chen, C.N., et al. 2019. Age-dependent effects of caloric restriction on mTOR and Ubiquitin-proteasome pathways in skeletal muscles. Geroscience 41: 871-880.
8. Que, Y., et al. 2020. The putative deubiquitinating enzyme MoUbp4 is required for infection-related morphogenesis and pathogenicity in the rice blast fungus *Magnaporthe oryzae*. Curr. Genet. 66: 561-576.

PROTOCOLS

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