SANTA CRUZ BIOTECHNOLOGY, INC.

UCH-L5 (C-4): sc-271002

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

As a component of the 19S regulatory complex of the 26S proteosome, UCH-L5 (ubiquitin carboxyl-terminal hydrolase isozyme L5), also known as UCH37, is a 329 amino acid protein that functions to edit polyubiquinated protein substrates. Since UCH-L5 has the potential to rescue ubiquinated proteins, including oncogenic proteins, from proteasomal degradation, it is likely that deregulation of UCH-L5 may affect tumor growth. Through associations with Smad7, UHC-L5 can dramatically upregulate TGFβ-dependent gene expression by deubiquinating and stabilizing TGFβ RI. Also, since overexpression of UCH-L5 and other deubiquitinating enzymes has been observed in many cancer cell lines, inhibition of these proteins may be of some interest in designing therapies for cancer treatment. There are four isoforms of UCH-L5 that exist as a result of alternative splicing events.

CHROMOSOMAL LOCATION

Genetic locus: UCHL5 (human) mapping to 1q31.2; Uchl5 (mouse) mapping to 1 F.

SOURCE

UCH-L5 (C-4) is a mouse monoclonal antibody raised against amino acids 220-329 mapping at the C-terminus of UCH-L5 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.

UCH-L5 (C-4) is available conjugated to agarose (sc-271002 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-271002 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271002 PE), fluorescein (sc-271002 FITC), Alexa Fluor® 488 (sc-271002 AF488), Alexa Fluor® 546 (sc-271002 AF546), Alexa Fluor® 594 (sc-271002 AF594) or Alexa Fluor® 647 (sc-271002 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271002 AF680) or Alexa Fluor® 790 (sc-271002 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

UCH-L5 (C-4) is recommended for detection of UCH-L5 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 UCH-L5 siRNA (h): sc-76797, UCH-L5 siRNA (m): sc-76798, UCH-L5 shRNA Plasmid (h): sc-76797-SH, UCH-L5 shRNA Plasmid (m): sc-76798-SH, UCH-L5 shRNA (h) Lentiviral Particles: sc-76797-V and UCH-L5 shRNA (m) Lentiviral Particles: sc-76798-V.

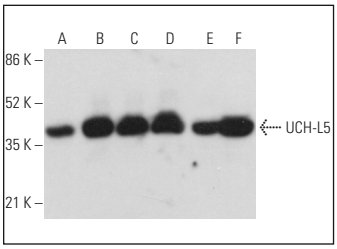
Molecular Weight of UCH-L5: 38 kDa.

Positive Controls: HEK293 whole cell lysate: sc-45136, NCI-H460 whole cell lysate: sc-364235 or Hep G2 cell lysate: sc-2227.

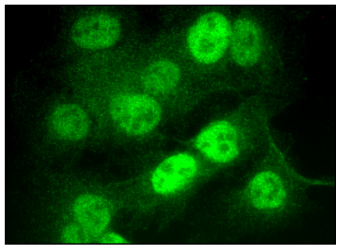
STORAGE

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

DATA



UCH-L5 (C-4): sc-271002. Western blot analysis of UCH-L5 expression in U-87 MG (**A**), HEK293 (**B**), JAR (**C**), NCI-H460 (**D**), Hep G2 (**E**) and K-562 (**F**) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.



UCH-L5 (C-4): sc-271002. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Arpalahti, L., et al. 2017. Nuclear ubiquitin C-terminal hydrolase L5 expression associates with increased patient survival in pancreatic ductal adenocarcinoma. Tumour Biol. 39: 1010428317710411.
2. Arpalahti, L., et al. 2017. UCHL5 expression associates with improved survival in lymph-node-positive rectal cancer. Tumour Biol. 39: 1010428317716078.
3. Arpalahti, L., et al. 2018. Positive cytoplasmic UCHL5 tumor expression in gastric cancer is linked to improved prognosis. PLoS ONE 13: e0193125.
4. Long, C., et al. 2018. LPS promotes HBO1 stability via USP25 to modulate inflammatory gene transcription in THP-1 cells. Biochim. Biophys. Acta Gene Regul. Mech. 1861: 773-782.
5. Fukui, S., et al. 2019. The proteasome deubiquitinase inhibitor bAP15 downregulates TGF-β/Smad signaling and induces apoptosis via UCHL5 inhibition in ovarian cancer. Oncotarget 10: 5932-5948.
6. Chadchankar, J., et al. 2019. Inactive USP14 and inactive UCHL5 cause accumulation of distinct ubiquitinated proteins in mammalian cells. PLoS ONE 14: e0225145.
7. Zhang, J., et al. 2020. Deubiquitinase UCHL5 is elevated and associated with a poor clinical outcome in lung adenocarcinoma (LUAD). J. Cancer 11: 6675-6685.
8. Gurusingha Arachchige, H.S., et al. 2021. Synthesis and evaluation of tiaprofenic acid-derived UCHL5 deubiquitinase inhibitors. Bioorg. Med. Chem. 30: 115931.

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.