SANTA CRUZ BIOTECHNOLOGY, INC.

ULK1 (F-4): sc-390904

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

ULK1 and ULK2 (for UNC-51-like kinase) encode similar amino-terminal serine/threonine kinase domains, a proline/serine-rich (PS) domain, and a species conserved carboxyl-terminal domain. Both share homology with the UNC-51 kinase from *Caenorhabditis elegans* and the APG1 kinase in yeast, which are involved in axonal extension and growth, and autophagy, respectively. ULK1 maps to human chromosome 12q24.33 and is ubiquitously expressed. ULK2, also widely expressed, maps to mouse chromosome 11 B2 and is expected to have a similar molecular weight as ULK1 in human. ULK1 and ULK2 are thought to auto-phosphorylate the PS domain *in vitro,* and the significant homology among vertebrates suggest that ULK1 and ULK2 are involved in the regulation of fundamental biological processes.

CHROMOSOMAL LOCATION

Genetic locus: ULK1 (human) mapping to 12q24.33; Ulk1 (mouse) mapping to 5 F.

SOURCE

ULK1 (F-4) is a mouse monoclonal antibody raised against amino acids 511-750 mapping within an internal region of ULK1 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.

ULK1 (F-4) is available conjugated to agarose (sc-390904 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390904 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390904 PE), fluorescein (sc-390904 FITC), Alexa Fluor® 488 (sc-390904 AF488), Alexa Fluor® 546 (sc-390904 AF546), Alexa Fluor® 594 (sc-390904 AF594) or Alexa Fluor® 647 (sc-390904 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390904 AF680) or Alexa Fluor® 790 (sc-390904 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

ULK1 (F-4) is recommended for detection of ULK1 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 ULK1 siRNA (h): sc-44182, ULK1 siRNA (m): sc-44849, ULK1 shRNA Plasmid (h): sc-44182-SH, ULK1 shRNA Plasmid (m): sc-44849-SH, ULK1 shRNA (h) Lentiviral Particles: sc-44182-V and ULK1 shRNA (m) Lentiviral Particles: sc-44849-V.

Molecular Weight (predicted) of ULK1: 113 kDa.

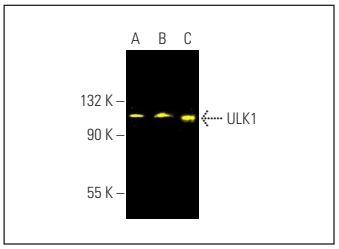
Molecular Weight (observed) of ULK1: 161 kDa.

Positive Controls: ULK1 (h): 293T Lysate: sc-158046, PC-3 cell lysate: sc-2220 or A549 cell lysate: sc-2413.

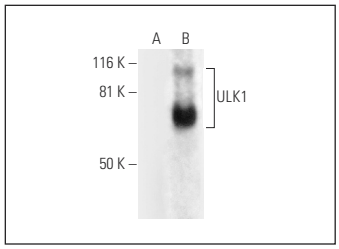
STORAGE

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

DATA



ULK1 (F-4) Alexa Fluor® 488: sc-390904 AF488. Direct fluorescent western blot analysis of ULK1 expression in A549 (**A**), PC-3 (**B**) and U266 (**C**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214.



ULK1 (F-4): sc-390904. Western blot analysis of ULK1 expression in non-transfected: sc-117752 (**A**) and human ULK1 transfected: sc-158046 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Chen, Y.D., et al. 2017. S100A10 regulates ULK1 localization to ER-mitochondria contact sites in IFN-γ-triggered autophagy. J. Mol. Biol. 429: 142-157.
2. Wang, W., et al. 2018. TRIM37 deficiency induces autophagy through deregulating the MTORC1-TFEB axis. Autophagy 14: 1574-1585.
3. Kumar, V., et al. 2019. Disrupted apolipoprotein L1-miR193a axis dedifferentiates podocytes through autophagy blockade in an apoL1 risk milieu. Am. J. Physiol., Cell Physiol. 317: C209-C225.
4. Omi, J., et al. 2020. The inducible amphisome isolates viral hemagglutinin and defends against influenza A virus infection. Nat. Commun. 11: 162.
5. Mohamud, Y., et al. 2020. Coxsackievirus infection induces a non-canonical autophagy independent of the ULK and PI3K complexes. Sci. Rep. 10: 19068.
6. Tang, Y., et al. 2021. NPM1 mutant maintains ULK1 protein stability via TRAF6-dependent ubiquitination to promote autophagic cell survival in leukemia. FASEB J. 35: e21192.
7. Feng, X., et al. 2021. PLAC8 promotes the autophagic activity and improves the growth priority of human trophoblast cells. FASEB J. 35: e21351.
8. Zhang, T., et al. 2021. Heat shock protein 90 promotes RNA helicase DDX5 accumulation and exacerbates hepatocellular carcinoma by inhibiting autophagy. Cancer Biol. Med. 18: 693-704.
9. Wang, H., et al. 2021. The HSF1/miR-135b-5p axis induces protective autophagy to promote oxaliplatin resistance through the MUL1/ULK1 pathway in colorectal cancer. Oncogene 40: 4695-4708.
10. Kim, T.W. 2022. Cinnamaldehyde induces autophagy-mediated cell death through ER stress and epigenetic modification in gastric cancer cells. Acta Pharmacol. Sin. 43: 712-723.

RESEARCH USE

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