

ULK1 (N-17): sc-10900

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 12q24.3 and is ubiquitously expressed. ULK2, also widely expressed, maps to mouse chromosome 11 B1.3 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.

REFERENCES

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- Matsuura, A., et al. 1997. *apg1p*, a novel protein kinase required for the autophagic process in *Saccharomyces cerevisiae*. *Gene* 192: 245-250.
- Kuroyanagi, H., et al. 1998. Human ULK1, a novel serine/ threonine kinase related to UNC-51 kinase of *Caenorhabditis elegans*: cDNA cloning, expression, and chromosomal assignment. *Genomics* 51: 76-85.
- Yan, J., et al. 1998. Identification of mouse ULK1, a novel protein kinase structurally related to *C. elegans* UNC-51. *Biochem. Biophys. Res. Commun.* 246: 222-227.
- Yan, J., et al. 1999. Mouse ULK2, a novel member of the UNC-51-like protein kinases: unique features of functional domains. *Oncogene* 18: 5850-5859.
- Tomoda, T., et al. 1999. A mouse serine/threonine kinase homologous to *C. elegans* UNC51 functions in parallel fiber formation of cerebellar granule neurons. *Neuron* 24: 833-846.

CHROMOSOMAL LOCATION

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

SOURCE

ULK1 (N-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of ULK1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-10900 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

ULK1 (N-17) is recommended for detection of ULK1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

ULK1 (N-17) is also recommended for detection of ULK1 in additional species, including bovine, porcine and avian.

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: Jurkat whole cell lysate: sc-2204.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

- Kundu, M., et al. 2008. ULK1 plays a critical role in the autophagic clearance of mitochondria and ribosomes during reticulocyte maturation. *Blood* 112: 1493-1502.
- Hosokawa, N., et al. 2009. Nutrient-dependent mTORC1 association with the ULK1-Atg13-FIP200 complex required for autophagy. *Mol. Biol. Cell* 20: 1981-1991.
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- Kim J, et al. 2011. AMPK and mTOR regulate autophagy through direct phosphorylation of Ulk1. *Nat. Cell Biol.* 13: 132-141.

RESEARCH USE

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

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Try **ULK1 (F-4): sc-390904**, our highly recommended monoclonal alternative to ULK1 (N-17). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **ULK1 (F-4): sc-390904**.