

# ULK2 (2A12): sc-293453

## 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 autophosphorylate 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

1. Ogura, K., et al. 1994. *Caenorhabditis elegans* unc-51 gene required for axonal elongation encodes a novel serine/threonine kinase. *Genes Dev.* 8: 2389-2400.
2. Matsuura, A., et al. 1997. *apg1p*, a novel protein kinase required for the autophagic process in *Saccharomyces cerevisiae*. *Gene* 192: 245-250.
3. 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.
4. 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.
5. 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.
6. 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: ULK2 (human) mapping to 17p11.2.

## SOURCE

ULK2 (2A12) is a mouse monoclonal antibody raised against amino acids 743-843 representing partial length recombinant protein of ULK2 of human origin.

## PRODUCT

Each vial contains 100 µg IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

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

## RESEARCH USE

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

## APPLICATIONS

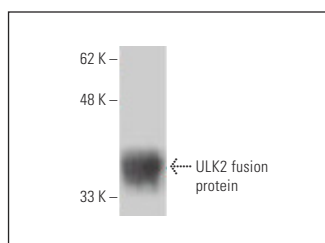
ULK2 (2A12) is recommended for detection of ULK2 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for ULK2 siRNA (h): sc-44183, ULK2 shRNA Plasmid (h): sc-44183-SH and ULK2 shRNA (h) Lentiviral Particles: sc-44183-V.

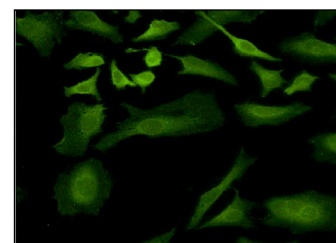
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



ULK2 (2A12): sc-293453. Western blot analysis of human recombinant ULK2 fusion protein.



ULK2 (2A12): sc-293453. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and membrane localization.

## SELECT PRODUCT CITATIONS

1. Trelford, C.B., et al. 2021. Canonical and non-canonical TGFβ signaling activate autophagy in an ULK1-dependent manner. *Front. Cell Dev. Biol.* 9: 712124.
2. Trelford, C.B., et al. 2022. Prolonged proteasome inhibition antagonizes TGFβ1-dependent signalling by promoting the lysosomal-targeting of TGFβ receptors. *Cell. Signal.* 98: 110414.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.