SANTA CRUZ BIOTECHNOLOGY, INC.

NUAK1 (H-12): sc-393459

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

NUAK1 (NUAK family SNF1-like kinase 1), also known as omphk1 (omphalocele kinase 1), is a 658 amino acid nuclear and cytoplasmic protein that contains one protein kinase domain, and belongs to the CAMK Ser/Thr protein kinase family and the SNF1 subfamily. NUAK1 is a serine/threonine-protein kinase involved in various processes such as cell adhesion, regulation of cell ploidy and senescence, cell proliferation and tumor progression. NUAK1 phosphorylates Atm, caspase-6, LATS1, MYPT1 and p53, and is expressed in the developing central nervous system, epidermis and some other tissues. Homozygous Nauk1 mutants suffer from omphalocele, a failure in the closure of the secondary body wall leading to organs outside of the abdomen. Omphalocele is apparent at E14.5 when the physiological hernia is almost rectified in wild-type embryos.

REFERENCES

1. Suzuki, A., et al. 2003. ARK5 suppresses the cell death ind via inhibition of caspase 8 activation, but not by chemotherapeutic agents or UV irradiation. Oncogene 22: 6177-6182.
2. Suzuki, A., et al. 2004. ARK5 is a tumor invasion-associated factor downstream of Akt signaling. Mol. Cell. Biol. 24: 3526-3535.
3. Suzuki, A., et al. 2004. Regulation of caspase-6 and FLIP by the AMPK family member ARK5. Oncogene 23: 7067-7075.
4. Fisher, J.S., et al. 2005. Muscle contractions, AICAR, and Insulin cause phosphorylation of an AMPK-related kinase. Am. J. Physiol. Endocrinol. Metab. 289: E986-E992.
5. Suzuki, A., et al. 2005. ARK5 is transcriptionally regulated by the Large-MAF family and mediates IGF-1-induced cell invasion in multiple myeloma: ARK5 as a new molecular determinant of malignant multiple myeloma. Oncogene 24: 6936-6944.
6. Suzuki, A., et al. 2005. Involvement of transforming growth factor-β1 signaling in hypoxia-induced tolerance to glucose starvation. J. Biol. Chem. 280: 31557-31563.
7. Morito, N., et al. 2006. Overexpression of c-Maf contributes to T-cell lymphoma in both mice and human. Cancer Res. 66: 812-819.

CHROMOSOMAL LOCATION

Genetic locus: NUAK1 (human) mapping to 12q23.3.

SOURCE

NUAK1 (H-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 48-69 near the N-terminus of NUAK1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_3 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-393459 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

NUAK1 (H-12) is recommended for detection of NUAK1 of 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), 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 NUAK1 siRNA (h): sc-60203, NUAK1 shRNA Plasmid (h): sc-60203-SH and NUAK1 shRNA (h) Lentiviral Particles: sc-60203-V.

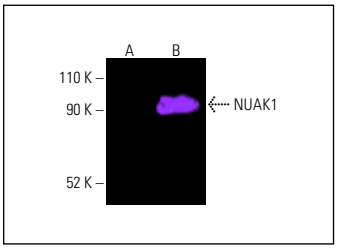
Molecular Weight of NUAK1: 74 kDa.

Positive Controls: NUAK1 (h): 293T Lysate: sc-173768.

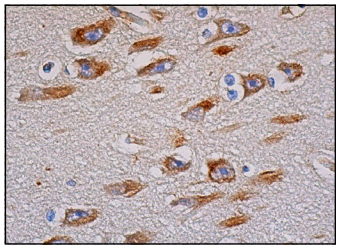
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



NUAK1 (H-12): sc-393459. Fluorescent western blot analysis of NUAK1 expression in non-transfected: sc-117752 (**A**) and human NUAK1 transfected: sc-173768 (**B**) 293T whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgG_3 BP-CFL 555: sc-533674.



NUAK1 (H-12) : sc-393459. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebral cortex tissue showing cytoplasmic staining of neuronal cells and endothelial cells.

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.