SANTA CRUZ BIOTECHNOLOGY, INC.

NUAK1 (h): 293T Lysate: sc-173768

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-β 1 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.
8. Suzuki, A., et al. 2006. NDR2 acts as the upstream kinase of ARK5 during insulin-like growth factor-1 signaling. J. Biol. Chem. 281: 13915-13921.
9. Suzuki, A. and Esumi, H. 2006. AMPK in the cancer research field: tumor progression by ARK5. Seikagaku 78: 392-403.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

CHROMOSOMAL LOCATION

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

PRODUCT

NUAK1 (h): 293T Lysate represents a lysate of human NUAK1 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

NUAK1 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive NUAK1 antibodies. Recommended use: 10-20 µl per lane.

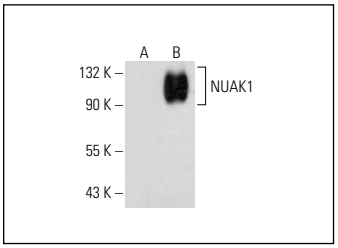
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

NUAK1 (A-9): sc-271827 is recommended as a positive control antibody for Western Blot analysis of enhanced human NUAK1 expression in NUAK1 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

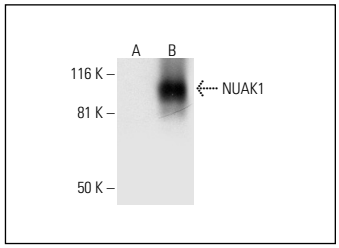
RECOMMENDED SUPPORT REAGENTS

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.

DATA



NUAK1 (A-9): sc-271827. Western blot analysis of NUAK1 expression in non-transfected: sc-117752 (**A**) and human NUAK1 transfected: sc-173768 (**B**) 293T whole cell lysates.



NUAK1 (H-12): sc-393459. Western blot analysis of NUAK1 expression in non-transfected: sc-117752 (**A**) and human NUAK1 transfected: sc-173768 (**B**) 293T whole cell lysates.

RESEARCH USE

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