SANTA CRUZ BIOTECHNOLOGY, INC.

NIT1 (D-7): sc-515566

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Belonging to the large family of nonpeptidic C-N hydrolases, nitrilases are enzymes that cleave nitriles and organic amides, resulting in carboxlic acid and ammonia. NIT1 (Nitrilase homolog 1) is a 327 amino acid protein that plays a role in cell growth and apoptosis. Loss of NIT1 expression leads to accelerated proliferation, increased cyclin D1 expression and resistance to DNA damage stress, whereas overexpression of NIT1 leads to caspase-dependent apoptosis. This evidence suggests that NIT1 functions as a tumor supressor. NIT1 is expressed in placenta, kidney, brain, liver, heart, pancreas and skeletal muscle where it is localized to both the cytoplasm and mitochondria. There are four isoforms of NIT1 that are produced as a result of alternative splicing events.

REFERENCES

1. Pekarsky, Y., et al. 1998. Nitrilase and Fhit homologs are encoded as fusion proteins in *Drosophila melanogaster* and *Caenorhabditis elegans*. Proc. Natl. Acad. Sci. USA 95: 8744-8749.
2. Online Mendelian Inheritance in Man, OMIM™. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 604618. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Vorwerk, S., et al. 2001. Enzymatic characterization of the recombinant *Arabidopsis thaliana* nitrilase subfamily encoded by the NIT2/NIT1/NIT3-gene cluster. Planta 212: 508-516.
4. O'Reilly, C. and Turner, P.D. 2003. The nitrilase family of CN hydrolysing enzymes—a comparative study. J. Appl. Microbiol. 95: 1161-1174.
5. Cutler, S.R. and Somerville, C.R. 2005. Imaging plant cell death: GFP-Nit1 aggregation marks an early step of wound and herbicide induced cell death. BMC Plant. Biol. 5: 4.

CHROMOSOMAL LOCATION

Genetic locus: NIT1 (human) mapping to 1q23.3.

SOURCE

NIT1 (D-7) is a mouse monoclonal antibody raised against amino acids 78-205 mapping within an internal region of NIT1 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.

NIT1 (D-7) is available conjugated to agarose (sc-515566 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-515566 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515566 PE), fluorescein (sc-515566 FITC), Alexa Fluor® 488 (sc-515566 AF488), Alexa Fluor® 546 (sc-515566 AF546), Alexa Fluor® 594 (sc-515566 AF594) or Alexa Fluor® 647 (sc-515566 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515566 AF680) or Alexa Fluor® 790 (sc-515566 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

NIT1 (D-7) is recommended for detection of NIT1 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for NIT1 siRNA (h): sc-78620, NIT1 shRNA Plasmid (h): sc-78620-SH and NIT1 shRNA (h) Lentiviral Particles: sc-78620-V.

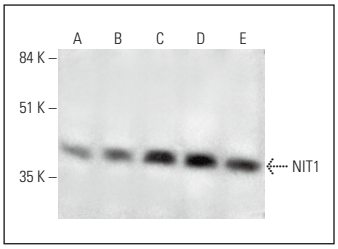
Molecular Weight of NIT1: 36 kDa.

Positive Controls: MIA PaCa-2 cell lysate: sc-2285, HeLa whole cell lysate: sc-2200 or SK-BR-3 cell lysate: sc-2218.

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



NIT1 (D-7): sc-515566. Western blot analysis of NIT1 expression in MIA PaCa-2 (**A**), HeLa (**B**), SK-BR-3 (**C**), ZR-75-1 (**D**) and Hep G2 (**E**) whole cell lysates.

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.

PROTOCOLS

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