

NIT1 (P-12): sc-160079

BACKGROUND

Belonging to the large family of nonpeptidic C-N hydrolases, nitrilases are enzymes that cleave nitriles and organic amides, resulting in carboxylic 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 suppressor. 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., Campiglio, M., Siprashvili, Z., Druck, T., Sedkov, Y., Tillib, S., Draganescu, A., Wermuth, P., Rothman, J.H., Huebner, K., Buchberg, A.M., Mazo, A., Brenner, C. and Croce, C.M. 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., Biernacki, S., Hillebrand, H., Janzik, I., Müller, A., Weiler, E.W. and Piotrowski, M. 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 (P-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of NIT1 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-160079 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

NIT1 (P-12) is recommended for detection of NIT1 isoforms 1, 2, 4 and 5 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).

NIT1 (P-12) is also recommended for detection of NIT1 isoforms 1, 2, 4 and 5 in additional species, including equine and canine.

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.

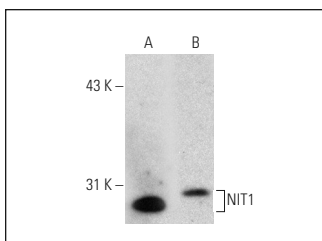
Molecular Weight of NIT1: 36 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, MIA PaCa-2 cell lysate: sc-2285 or Hep G2 cell lysate: sc-2227.

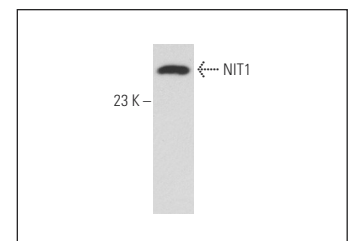
RECOMMENDED SECONDARY REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



NIT1 (P-12): sc-160079. Western blot analysis of NIT1 expression in MIA PaCa-2 (A) and Hep G2 (B) whole cell lysates.



NIT1 (P-12): sc-160079. Western blot analysis of NIT1 expression in HeLa whole cell lysate.

RESEARCH USE

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

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Try **NIT1 (D-7): sc-515566**, our highly recommended monoclonal alternative to NIT1 (P-12).