

Neuronatin (S-14): sc-23437

BACKGROUND

The paternally imprinted Neuronatin gene (NNAT) is initially expressed in rhombomeres and the pituitary gland and is later expressed more widely, but much less abundantly, in the central and peripheral nervous systems. The human NNAT gene maps to chromosome 20q11.23 and contains an imprinting region associated with morphological abnormalities and early neonatal lethality. Specifically, hypermethylation of the NNAT gene occurs in both myeloid and lymphoid acute pediatric leukemias and may inhibit NNAT expression. The Neuronatin protein consists of two isoforms, α and β , which are the products of alternative splicing. The α form of the Neuronatin gene is encoded by three exons, whereas the β form is missing the second exon. Neuronatin mRNA expression is abundant in undifferentiated PC-12 cells. Treatment of these cells with nerve growth factor (NGF), which contributes to neuronal differentiation, downregulates Neuronatin mRNA expression. NNAT (-) 1.9 PC-12 cells exhibit an increase in nigericin, rotenone and valinomycin sensitivity; NNAT transfection restores wild-type PC-12 resistance. These results suggest a potential protective role for Neuronatin against toxic insult during development.

REFERENCES

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- Kikyo, N., Williamson, C.M., John, R.M., Barton, S.C., Beechey, C.V., Ball, S.T., Cattanach, B.M., Surani, M.A. and Peters, J. 1997. Genetic and functional analysis of Neuronatin in mice with maternal or paternal duplication of distal Chr 2. *Dev. Biol.* 190: 66-77.
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- Zheng, S., Chou, A.H., Jimenez, A.L., Khodadadi, O., Son, S., Melega, W.P. and Howard, B.D. 2002. The fetal and neonatal brain protein Neuronatin protects PC-12 cells against certain types of toxic insult. *Brain Res. Dev. Brain Res.* 136: 101-110.
- Kuerbitz, S.J., Pahys, J., Wilson, A., Compitello, N. and Gray, T.A. 2002. Hypermethylation of the imprinted NNAT locus occurs frequently in pediatric acute leukemia. *Carcinogenesis* 23: 559-564.

CHROMOSOMAL LOCATION

Genetic locus: NNAT (human) mapping to 20q11.23; Nnat (mouse) mapping to 2 H1.

SOURCE

Neuronatin (S-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Neuronatin of human origin.

STORAGE

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

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-23437 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Neuronatin (S-14) is recommended for detection of Neuronatin of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Neuronatin (S-14) is also recommended for detection of Neuronatin in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Neuronatin siRNA (h): sc-43966, Neuronatin siRNA (m): sc-149937, Neuronatin shRNA Plasmid (h): sc-43966-SH, Neuronatin shRNA Plasmid (m): sc-149937-SH, Neuronatin shRNA (h) Lentiviral Particles: sc-43966-V and Neuronatin shRNA (m) Lentiviral Particles: sc-149937-V.

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) 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.

SELECT PRODUCT CITATIONS

- Chu, K. and Tsai, M.J. 2005. Neuronatin, a downstream target of BETA2/NeuroD1 in the pancreas, is involved in glucose-mediated Insulin secretion. *Diabetes* 54: 1064-1073.
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RESEARCH USE

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