

Neuronatin (FL-81): sc-30188

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 suggests a potential protective role for Neuronatin against toxic insult during development.

REFERENCES

- Joseph, R., et al. 1996. Neuronatin mRNA in PC-12 cells: downregulation by nerve growth factor. *Brain Res.* 738: 32-38.
- Kikyo, N., et al. 1997. Genetic and functional analysis of neuronatin in mice with maternal or paternal duplication of distal Chr 2. *Dev. Biol.* 190: 66-77.
- Evans, H.K., et al. 2001. The neuronatin gene resides in a "micro-imprinted" domain on human chromosome 20q11.2. *Genomics* 77: 99-104.
- Zheng, S., et al. 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., et al. 2002. Hyper-methylation 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 (FL-81) is a rabbit polyclonal antibody raised against amino acids 1-81 representing full length Neuronatin of human origin.

PRODUCT

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

STORAGE

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

APPLICATIONS

Neuronatin (FL-81) is recommended for detection of Neuronatin isoforms α and β of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

Neuronatin (FL-81) is also recommended for detection of Neuronatin isoforms α and β 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 goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

- Lin, H.H., et al. 2010. Neuronatin promotes neural lineage in ESCs via Ca²⁺ signaling. *Stem Cells* 28: 1950-1960.

RESEARCH USE

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

PROTOCOLS

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