SANTA CRUZ BIOTECHNOLOGY, INC.

MATH-3 (M-20): sc-19256

BACKGROUND

The neurogenin family of proteins belongs to the basic helix-loop-helix (bHLH) superfamily and consists of neurogenin 1, neurogenin 2 and neurogenin 3 (also designated ngn3). bHLH members are transcriptional regulators that determine cell fate. During mouse neurogenesis, Neurogenin 1 and Neurogenin 2 are expressed in distinct progenitor populations in the central and peripheral nervous systems. Targeted mutation analyses showed that Neurogenin 1 is essential for the determination of neuronal precursors for proximal cranial sensory ganglia and that Neurogenin 2 is essential for the determination of precursors for epibranchial placode-derived sensory neurons. The gene which encodes Neurogenin 1 maps to human chromosome 5q23-q31. The *Drosophila* 'atonal' gene is a proneural gene that produces a protein with basic helix loop helix (bHLH) domains which plays an essential role in the development of the *Drosophila* nervous system. MATH-2 and MATH-3 are expressed in the dorsal regions of the hindbrain and spinal cord. The human atonal protein homolog (HATH-1) shows 89% sequence identity with the mouse atonal protein homolog (MATH-1). The gene which encodes HATH-1 maps to human chromosome 4q22. The genes which encode MATH-2 and MATH-3 map to mouse chromosome 6 and 10, respectively.

REFERENCES

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3. Schwitzgebel, V.M., et al. 2000. Expression of neurogenin3 reveals an islet cell precursor population in the pancreas. Development 127: 3533-3542.
4. Jensen, J., et al. 2000. Independent development of pancreatic alpha- and beta-cells from neurogenin3-expressing precursors: a role for the notch pathway in repression of premature differentiation. Diabetes 49: 163-176.
5. Huang, H.P., et al. 2000. Regulation of the pancreatic islet-specific gene BETA2 (neuroD) by neurogenin 3. Mol. Cell. Biol. 20: 3292-3307.
6. Ma, Q., Cet al. 1998. neurogenin1 is essential for the determination of neuronal precursors for proximal cranial sensory ganglia. Neuron 20: 469-482.
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8. Tamimi, R.M., et al. 1997. Neurod2 and Neurod3 genes map to human chromosomes 17q12 and 5q23-q31 and mouse chromosomes 11 and 13, respectively. Genomics 40: 355-357.
9. Ben-Arie, N., et al. 1996. Evolutionary conservation of sequence and expression of the bHLH protein Atonal suggests a conserved role in neurogenesis. Hum. Mol. Genet. 5: 1207-1216.

SOURCE

MATH-3 (M-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of MATH-3 of mouse 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-19256 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MATH-3 (M-20) is recommended for detection of MATH-3 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).

Suitable for use as control antibody for MATH-3 siRNA (h): sc-106204, MATH-3 siRNA (m): sc-149295, MATH-3 shRNA Plasmid (h): sc-106204-SH, MATH-3 shRNA Plasmid (m): sc-149295-SH, MATH-3 shRNA (h) Lentiviral Particles: sc-106204-V and MATH-3 shRNA (m) Lentiviral Particles: sc-149295-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.

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 or our catalog for detailed protocols and support products.