



## MATH-3 (P-20): sc-19255

### 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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- 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.
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- Ma, Q., et al. 1998. neurogenin1 is essential for the determination of neuronal precursors for proximal cranial sensory ganglia. *Neuron* 20: 469-482.
- Fode, C., et al. 1998. The bHLH protein Neurogenin 2 is a determination factor for epibranchial placode-derived sensory neurons. *Neuron* 20: 483-494.
- 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.
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### SOURCE

MATH-3 (P-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-19255 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### APPLICATIONS

MATH-3 (P-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), 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 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) 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.

### 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](http://www.scbt.com) or our catalog for detailed protocols and support products.