

MATH-3 (m): 293T Lysate: sc-121528

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 5q31.1. 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 B3 and 10 D3, respectively.

REFERENCES

1. 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.
2. 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.
3. Ma, Q., et al. 1998. Neurogenin1 is essential for the determination of neuronal precursors for proximal cranial sensory ganglia. *Neuron* 20: 469-482.
4. Fode, C., et al. 1998. The bHLH protein NEUROGENIN 2 is a determination factor for epibranchial placode-derived sensory neurons. *Neuron* 20: 483-494.
5. Jensen, J., et al. 2000. Independent development of pancreatic α - and β -cells from neurogenin3-expressing precursors: a role for the notch pathway in repression of premature differentiation. *Diabetes* 49: 163-176.
6. Huang, H.P., et al. 2000. Regulation of the pancreatic islet-specific gene BETA2 (neuroD) by neurogenin 3. *Mol. Cell. Biol.* 20: 3292-3307.

CHROMOSOMAL LOCATION

Genetic locus: Neurod4 (mouse) mapping to 10 D3.

PRODUCT

MATH-3 (m): 293T Lysate represents a lysate of mouse MATH-3 transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

APPLICATIONS

MATH-3 (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive MATH-3 antibodies. Recommended use: 10-20 μ l per lane.

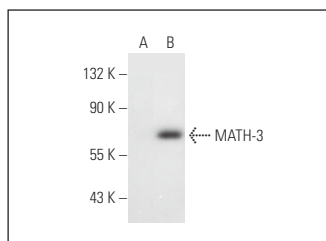
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

MATH-3 (D-10): sc-393724 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse MATH-3 expression in MATH-3 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



MATH-3 (D-10): sc-393724. Western blot analysis of MATH-3 expression in non-transfected: sc-117752 (A) and mouse MATH-3 transfected: sc-121528 (B) 293T whole cell lysates.

RESEARCH USE

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

PROTOCOLS

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