SANTA CRUZ BIOTECHNOLOGY, INC.

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

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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

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 µg protein in 200 µl 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 µl per lane.

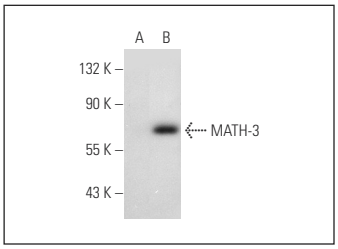
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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.