MATH-1 (Y-23): sc-130774

SANTA CRUZ® BIOTECHNOLOGY

The Power to Question

BACKGROUND

The *Drosophila* atonal gene produces a protein with basic helix-loop-helix (bHLH) domains that plays an essential role in the development of the *Drosophila* nervous system. Mammalian atonal homolog 1 (MATH-1) is a helix-loop-helix (HLH) transcription factor that is structurally homologous to the product of the *Drosophila* proneural gene atonal. MATH-1, so known as Atoh1, Ath1 or HATH-1, is a 351 amino acid protein with an atonal-related basic HLH domain. In mice, expression of MATH-1 takes place by embryonic day 9.5 and initially localizes to the cranial ganglions and the dorsal part of the central nervous system. Prominent expression of MATH-1 is in the dorsal part of the central nervous system but becomes restricted to the external granular layer of the cerebellum by day 18 and is undetectable in the adult nervous system. It is suggested that MATH-1 may play a role in the differentiation of subsets of neural cells by activating E box-dependent transcription.

REFERENCES

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2. Isaka, F., Shimizu, C., Nakanishi, S. and Kageyama, R. 1996. Genetic mapping of four mouse bHLH genes related to *Drosophila* proneural gene atonal. Genomics 37: 400-402.

3. Kim, P., Helms, A.W., Johnson, J.E. and Zimmerman, K. 1997. XATH-1, a vertebrate homolog of *Drosophila* atonal, induces a neuronal differentiation within ectodermal progenitors. Dev. Biol. 187: 1-12.

4. Itoh, F., Nakane, T. and Chiba, S. 1997. Gene expression of MASH-1, MATH-1, neuroD and NSCL-2, basic helix-loop-helix proteins, during neural differentiation in P19 embryonal carcinoma cells. Tohoku J. Exp. Med. 182: 327-336.

5. Raetzman, L.T. and Siegel, R.E. 1999. Immature granule neurons from cerebella of different ages exhibit distinct developmental potentials. J. Neurobiol. 38: 559-570.

6. Uittenbogaard, M. and Chiaramello, A. 1999. Expression of the basic helix-loop-helix ME1 E-protein during development and aging of the murine cerebellum. Neurosci. Lett. 274: 191-194.

CHROMOSOMAL LOCATION

Genetic locus: ATOH1 (human) mapping to 4q22.2.

SOURCE

MATH-1 (Y-23) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping near the N-terminus of MATH-1 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

MATH-1 (Y-23) is recommended for detection of MATH-1 of 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for MATH-1 siRNA (h): sc-42070, MATH-1 shRNA Plasmid (h): sc-42070-SH and MATH-1 shRNA (h) Lentiviral Particles: sc-42070-V.

Molecular Weight of MATH-1: 45 kDa.

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).

DATA
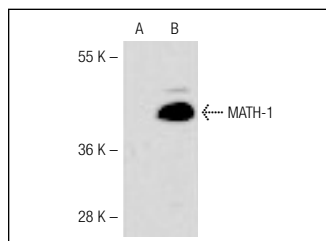
MATH-1 (Y-23): sc-130774. Western blot analysis of MATH-1 expression in non-transfected (**A**) and human MATH-1 transfected (**B**) 293 whole cell lysates.

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.

MONOS Satisfaction Guaranteed

Try **MATH-1 (18A6): sc-136173** or **MATH-1 (H-6): sc-514145**, our highly recommended monoclonal alternatives to MATH-1 (Y-23).