

MATH-2 (Z-23): sc-133773

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 2 (MATH-2) is a helix-loop-helix (HLH) transcription factor that is structurally homologous to the product of *Drosophila* atonal gene. MATH-2 is a 337 amino acid protein with an atonal-related basic HLH domain. In mice, expression of MATH-2 takes place by embryonic day 11.5 and initially localizes to the wall of brain vesicles and in the spinal cord. It is expressed in the cortical plate and the mantle layer in the developing central nervous system, and is limited to the nervous system in adults. Adult mouse cerebrums produce a high level of MATH-2 RNA with lower levels in other neuronal tissues. Research studies suggest that MATH-2 may function as a *trans*-acting factor involved in the development and maintenance of the mammalian nervous system.

REFERENCES

1. Ishibashi, M., Sasai, Y., Nakanishi, S. and Kageyama, R. 1993. Molecular characterization of HES-2, a mammalian helix-loop-helix factor structurally related to *Drosophila* hairy and Enhancer of split. *Eur. J. Biochem.* 215: 645-652.
2. Akazawa, C., Ishibashi, M., Shimizu, C., Nakanishi, S. and Kageyama, R. 1995. A mammalian helix-loop-helix factor structurally related to the product of *Drosophila* proneural gene atonal is a positive transcriptional regulator expressed in the developing nervous system. *J. Biol. Chem.* 270: 8730-8738.
3. Shimizu, C., Akazawa, C., Nakanishi, S. and Kageyama, R. 1995. MATH-2, a mammalian helix-loop-helix factor structurally related to the product of *Drosophila* proneural gene atonal, is specifically expressed in the nervous system. *Eur. J. Biochem.* 229: 239-248.
4. Kageyama, R., Sasai, Y., Akazawa, C., Ishibashi, M., Takebayashi, K., Shimizu, C., Tomita, K. and Nakanishi, S. 1995. Regulation of mammalian neural development by helix-loop-helix transcription factors. *Crit. Rev. Neurobiol.* 9: 177-188.
5. Isaka, F., Shimizu, C., Nakanishi, S. and Kageyama, R. 1997. Genetic mapping of four mouse bHLH genes related to *Drosophila* proneural gene atonal. *Genomics* 37: 400-402.
6. Schwab, M.H., Bartholomae, A., Heimrich, B., Feldmeyer, D., Druffel-Augustin, S., Goebbels, S., Naya, F.J., Zhao, S., Frotscher, M., Tsai, M.J. and Nave, K.A. 2000. Neuronal basic helix-loop-helix proteins (NEX and β 2/Neuro D) regulate terminal granule cell differentiation in the hippocampus. *J. Neurosci.* 20: 3714-3724.

CHROMOSOMAL LOCATION

Genetic locus: NEUROD6 (human) mapping to 7p15.1; Neurod6 (mouse) mapping to 6 B3.

SOURCE

MATH-2 (Z-23) is an affinity purified rabbit polyclonal antibody raised against synthetic MATH-2 peptide of human origin.

PRODUCT

Each vial contains 50 μ g IgG in 0.5 ml of PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

APPLICATIONS

MATH-2 (Z-23) is recommended for detection of MATH-2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

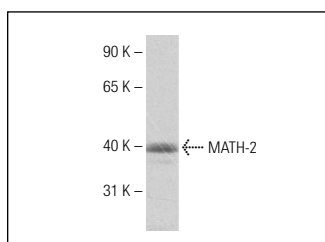
Suitable for use as control antibody for MATH-2 siRNA (h): sc-42072, MATH-2 siRNA (m): sc-42073, MATH-2 shRNA Plasmid (h): sc-42072-SH, MATH-2 shRNA Plasmid (m): sc-42073-SH, MATH-2 shRNA (h) Lentiviral Particles: sc-42072-V and MATH-2 shRNA (m) Lentiviral Particles: sc-42073-V.

Molecular Weight of MATH-2: 39 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-2 (Z-23): sc-133773. Western blot analysis of human MATH-2 transfected 293T whole cell lysate.

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.

MONOS
Satisfaction
Guaranteed

Try **MATH-2 (3G7): sc-517009**, our highly recommended monoclonal alternative to MATH-2 (Z-23).