MATH-2 (L-15): sc-19251

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BIOTECHNOLOGY

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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., et al. 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., et al. 1995. A mammalian helix-loop-helix factor structurally related to the product of *Drosophila* proneural gene atonal is a positive transcriptional regu-lator expressed in the developing nervous system. J. Biol. Chem. 270: 8730-8738.

3. Shimizu, C., et al. 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., et al. 1995. Regulation of mammalian neural development by helix-loop-helix transcription factors. Crit. Rev. Neurobiol. 9: 177-188.

5. Isaka, F., et al. 1997. Genetic mapping of four mouse bHLH genes related to *Drosophila* proneural gene atonal. Genomics 37: 400-402.

CHROMOSOMAL LOCATION

Genetic locus: NEUROD6 (human) mapping to 7p14.3; Neurod6 (mouse) mapping to 6 B3.

SOURCE

MATH-2 (L-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of MATH-2 of human 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-19251 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

MATH-2 (L-15) 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 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).

MATH-2 (L-15) is also recommended for detection of MATH-2 in additional species, including equine, canine, bovine and avian.

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.

Positive Controls: HeLa whole cell lysate: sc-2200 or HEK293 whole cell lysate: sc-45136.

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) Immunoprecip-itation: 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.

DATA
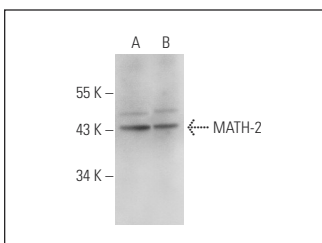
MATH-2 (L-15): sc-19251. Western blot analysis of MATH-2 expression in HEK293 (**A**) and HeLa (**B**) whole cell lysates.

RESEARCH USE

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

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Try **MATH-2 (3G7): sc-517009**, our highly recommended monoclonal alternative to MATH-2 (L-15).