

RNMTL1 (A-5): sc-398973

BACKGROUND

The RNA methyltransferase family of proteins catalyze the transfer of a methyl group from a donor to an RNA acceptor. Via their ability to modify RNA, RNA methyltransferase proteins play an important role in cell growth and signaling pathways and may be involved in tumor development and progression. RNMTL1 (RNA methyltransferase like 1), also known as HC90, is a 420 amino acid protein belonging to the RNA methyltransferase trmH family. Expressed in normal liver and hepatocarcinoma, RNMTL1 is encoded by a gene located on human chromosome 17, which comprises over 2.5% of the human genome and encodes over 1,200 genes. Two key tumor suppressor genes are associated with chromosome 17, namely, p53 and BRCA1. Tumor suppressor p53 is necessary for maintenance of cellular genetic integrity by moderating cell fate through DNA repair versus cell death. Malfunction or loss of p53 expression is associated with malignant cell growth and Li-Fraumeni syndrome. Like p53, BRCA1 is directly involved in DNA repair, though specifically it is recognized as a genetic determinant of early onset breast cancer and predisposition to cancers of the ovary, colon, prostate gland and fallopian tubes.

REFERENCES

1. Sindhuapak, T., et al. 1985. Site specificities of three transfer RNA methyltransferases from yeast. *Biochim. Biophys. Acta* 824: 66-73.
2. Xu, J., et al. 2002. The ATF/CREB site is the key element for transcription of the human RNA methyltransferase like 1(RNMTL1) gene, a newly discovered 17p13.3 gene. *Cell Res.* 12: 177-197.
3. Wang, R., et al. 2002. Expression of novel cloned genes HC56, HC71 and HC90 mapped on human chromosome 17p13.3 in leukemic cells. *Zhongguo Shi Yan Xue Ye Xue Za Zhi* 10: 419-422.
4. Nield, B.S., et al. 2004. New enzymes from environmental cassette arrays: functional attributes of a phosphotransferase and an RNA-methyltransferase. *Protein Sci.* 13: 1651-1659.
5. Watanabe, K., et al. 2005. Roles of conserved amino acid sequence motifs in the SpoU (TrmH) RNA methyltransferase family. *J. Biol. Chem.* 280: 10368-10377.

CHROMOSOMAL LOCATION

Genetic locus: RNMTL1 (human) mapping to 17p13.3; Rnmtl1 (mouse) mapping to 11 B5.

SOURCE

RNMTL1 (A-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 269-287 within an internal region of RNMTL1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-398973 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

RNMTL1 (A-5) is recommended for detection of RNMTL1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

Suitable for use as control antibody for RNMTL1 siRNA (h): sc-93988, RNMTL1 siRNA (m): sc-153056, RNMTL1 shRNA Plasmid (h): sc-93988-SH, RNMTL1 shRNA Plasmid (m): sc-153056-SH, RNMTL1 shRNA (h) Lentiviral Particles: sc-93988-V and RNMTL1 shRNA (m) Lentiviral Particles: sc-153056-V.

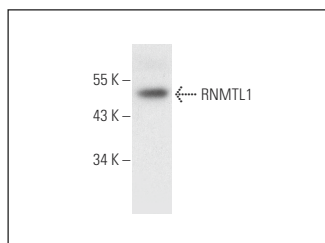
Molecular Weight of RNMTL1: 47 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227.

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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



RNMTL1 (A-5): sc-398973. Western blot analysis of RNMTL1 expression in Hep G2 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.

PROTOCOLS

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