

MRM1 (G-13): sc-136762

BACKGROUND

MRM1 (mitochondrial rRNA methyltransferase 1) is a 353 amino acid protein that localizes to the mitochondrion and belongs to the RNA methyltransferase trmH family. Expressed as two alternatively spliced isoforms, MRM1 specifically methylates the ribose of guanosine G-2270 in the peptidyl transferase center of the mitochondrial large ribosomal RNA (21S). The gene encoding MRM1 maps to 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

- Zhang, Z.Y., et al. 2006. Expression of MAC30 in rectal cancers with or without preoperative radiotherapy. *Oncology* 71: 259-265.
- Wilcox, C.B., et al. 2007. Coordinate up-regulation of TMEM97 and cholesterol biosynthesis genes in normal ovarian surface epithelial cells treated with progesterone: implications for pathogenesis of ovarian cancer. *BMC Cancer* 7: 223.
- Nusbaum, R., et al. 2006-2007. Susceptibility to breast cancer: hereditary syndromes and low penetrance genes. *Breast Dis.* 27: 21-50.
- Tai, Y.C., et al. 2007. Breast cancer risk among male BRCA1 and BRCA2 mutation carriers. *J. Natl. Cancer Inst.* 99: 1811-1814.
- Yan, J., et al. 2007. BLIMP1 regulates cell growth through repression of p53 transcription. *Proc. Natl. Acad. Sci. USA* 104: 1841-1846.

CHROMOSOMAL LOCATION

Genetic locus: MRM1 (human) mapping to 17q12.

SOURCE

MRM1 (G-13) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within an internal region of MRM1 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-136762 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

MRM1 (G-13) is recommended for detection of MRM1 isoforms 1 and 2 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:50-1:500), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:25, dilution range 1:25-1:250) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for MRM1 siRNA (h): sc-94135, MRM1 shRNA Plasmid (h): sc-94135-SH and MRM1 shRNA (h) Lentiviral Particles: sc-94135-V.

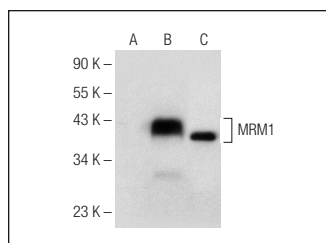
Molecular Weight of MRM1 isoforms 1/2: 39/17 kDa.

Positive Controls: COLO 320DM cell lysate: sc-2226, MDA-MB-468 cell lysate: sc-2282 or IMR-32 cell lysate: sc-2409.

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). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



MRM1 (G-13): sc-136762. Western blot analysis of MRM1 expression in non-transfected 293T: sc-117752 (A), human MRM1 transfected 293T: sc-111447 (B) and MDA-MB-468 (C) whole cell lysates.

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.