

Mimitin (K-19): sc-50098

BACKGROUND

The Myc family represents nuclear transcription factors that contribute significantly to cellular proliferation, differentiation, apoptosis and transformation. The Myc family of cellular oncogenes includes c-Myc, N-Myc, L-Myc, S-Myc and B-Myc. Myc-induced mitochondrial protein (MMTN), also designated Mimitin, localizes exclusively to the mitochondrion. Mimitin belongs to the complex I NDUFA12 subunit family of proteins and is highly expressed in esophageal squamous cell carcinoma (ESCC) cells. Mimitin plays an important role in Myc-dependent cell proliferation. It is a direct transcriptional target of c-Myc, which mediates gene repression by inhibiting the DNA binding protein Miz-1 and inhibiting cell growth. However, Mimitin expression in ESCC has no effect on the histopathological stage or grade of the cancer.

REFERENCES

- Schmidt, E.V. 1996. Myc family ties. *Nat. Genet.* 14: 8-10.
- Nesbit, C.E., Grove, L.E., Yin, X. and Prochownik, E.V. 1998. Differential apoptotic behaviors of c-Myc, N-Myc, and L-Myc oncoproteins. *Cell Growth Differ.* 9: 731-741.
- Eilers, M. 1999. Control of cell proliferation by Myc family genes. *Mol. Cells* 9: 1-6.
- Kuramoto, N., Ogita, K. and Yoneda, Y. 1999. Gene transcription through Myc family members in eukaryotic cells. *Jpn. J. Pharmacol.* 80: 103-109.
- Sugimoto, K.J., Kawamata, N., Sakajiri, S. and Oshimi, K. 2002. Molecular analysis of oncogenes, Ras family genes (N-Ras, K-Ras, H-Ras), Myc family genes (c-Myc, N-Myc) and MDM2 in natural killer cell neoplasms. *Jpn. J. Cancer Res.* 93: 1270-1277.
- Li, F., Wang, Y., Zeller, K.L., Potter, J.J., Wonsey, D.R., O'Donnell, K.A., Kim, J.W., Yustein, J.T., Lee, L.A. and Dang, C.V. 2005. Myc stimulates nuclearly encoded mitochondrial genes and mitochondrial biogenesis. *Mol. Cell. Biol.* 25: 6225-6234.
- Tsuneoka, M., Teye, K., Arima, N., Soejima, M., Otera, H., Ohashi, K., Koga, Y., Fujita, H., Shirouzu, K., Kimura, H. and Koda, Y. 2005. A novel Myc-target gene, Mimitin, that is involved in cell proliferation of esophageal squamous cell carcinoma. *J. Biol. Chem.* 280: 19977-19985.
- Shiio, Y., Suh, K.S., Lee, H., Yuspa, S.H., Eisenman, R.N. and Aebersold, R. 2006. Quantitative proteomic analysis of Myc-induced apoptosis: a direct role for Myc induction of the mitochondrial chloride ion channel, mtCLIC/CLIC4. *J. Biol. Chem.* 281: 2750-2756.

CHROMOSOMAL LOCATION

Genetic locus: NDUFA12L (human) mapping to 5q12.1; Ndufa12l (mouse) mapping to 13 D2.1.

SOURCE

Mimitin (K-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Mimitin of human origin.

RESEARCH USE

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

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-50098 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Mimitin (K-19) is recommended for detection of Mimitin (Myc-induced mitochondrial protein) of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Mimitin (K-19) is also recommended for detection of Mimitin (Myc-induced mitochondrial protein) in additional species, including equine, canine and bovine.

Suitable for use as control antibody for Mimitin siRNA (h): sc-61044, Mimitin siRNA (m): sc-61045, Mimitin shRNA Plasmid (h): sc-61044-SH, Mimitin shRNA Plasmid (m): sc-61045-SH, Mimitin shRNA (h) Lentiviral Particles: sc-61044-V and Mimitin shRNA (m) Lentiviral Particles: sc-61045-V.

Molecular Weight of Mimitin: 20 kDa.

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

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) 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.

STORAGE

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

PROTOCOLS

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



Try **Mimitin (H-11): sc-365592**, our highly recommended monoclonal alternative to Mimitin (K-19).