

# Mimitin (H-11): sc-365592

## 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., et al. 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., et al. 1999. Gene transcription through Myc family members in eukaryotic cells. *Jpn. J. Pharmacol.* 80: 103-109.
- Sugimoto, K.J., et al. 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., et al. 2005. Myc stimulates nuclearly encoded mitochondrial genes and mitochondrial biogenesis. *Mol. Cell. Biol.* 25: 6225-6234.
- Tsuneoka, M., et al. 2005. A novel Myc-target gene, Mimitin, that is involved in cell proliferation of esophageal squamous cell carcinoma. *J. Biol. Chem.* 280: 19977-19985.

## CHROMOSOMAL LOCATION

Genetic locus: NDUFAF2 (human) mapping to 5q12.1.

## SOURCE

Mimitin (H-11) is a mouse monoclonal antibody raised against amino acids 1-169 representing full length Mimitin of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Mimitin (H-11) is available conjugated to agarose (sc-365592 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365592 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365592 PE), fluorescein (sc-365592 FITC), Alexa Fluor® 488 (sc-365592 AF488), Alexa Fluor® 546 (sc-365592 AF546), Alexa Fluor® 594 (sc-365592 AF594) or Alexa Fluor® 647 (sc-365592 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365592 AF680) or Alexa Fluor® 790 (sc-365592 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

Mimitin (H-11) is recommended for detection of Mimitin (Myc-induced mitochondrial protein) of 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), immunohistochemistry (including paraffin-embedded sections) (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 Mimitin siRNA (h): sc-61044, Mimitin shRNA Plasmid (h): sc-61044-SH and Mimitin shRNA (h) Lentiviral Particles: sc-61044-V.

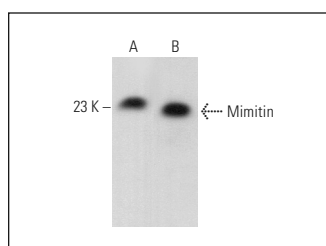
Molecular Weight of Mimitin: 20 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227 or Y79 cell lysate: sc-2240.

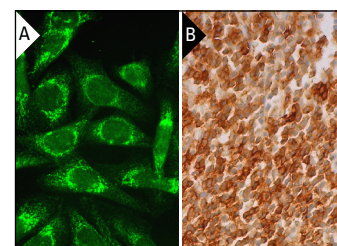
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:  
 1) Western Blotting: use m-IgGκ BPHRP: sc-516102 or m-IgGκ BPHRP (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 BPFITC: sc-516140 or m-IgGκ BPE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BPHRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



Mimitin (H-11): sc-365592. Western blot analysis of Mimitin expression in Hep G2 (A) and Y79 (B) whole cell lysates.



Mimitin (H-11): sc-365592. Immunofluorescence staining of formalin-fixed SW480 cells showing mitochondrial localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node tissue showing cytoplasmic staining of cells in germinal and non-germinal centers (B).

## 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.

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