

# Mcl-1 (MCL-401): sc-69839

## BACKGROUND

B cell CLL/lymphoma-2 (Bcl-2) blocks cell death following a variety of stimuli and confers a death-sparing effect to certain hematopoietic cell lines following growth factor withdrawal. Myeloid cell leukemia-1 (Mcl-1) shares sequence homology with Bcl-2 and further resembles Bcl-2 in that its expression promotes cell viability. p53 and Mcl-1 demonstrate opposing effects on mitochondrial apoptosis by mediating Bcl-2 antagonist killer (Bak) activity. Mcl-1 is an important and specific regulator that is necessary for the homeostasis of early hematopoietic progenitors. Glycogen synthase kinase-3 (GSK-3) controls Mcl-1 stability, which has an effect on the regulation of apoptosis by growth factors PI 3-kinase and Akt. Mice with a deficiency of the Mcl-1 protein show a significant reduction in B and T lymphocytes similar to the effects observed in IL-7- or IL-7R-deficient mice.

## REFERENCES

- Kozopas, K.M., et al. 1993. Mcl-1, a gene expressed in programmed myeloid cell differentiation, has sequence similarity to Bcl-2. *Proc. Natl. Acad. Sci. USA* 90: 3516-3520.
- Craig, R.W., et al. 1994. Human and mouse chromosomal mapping of the myeloid cell leukemia-1 gene: Mcl-1 maps to human chromosome 1q21, a region that is frequently altered in preneoplastic and neoplastic disease. *Genomics* 23: 457-463.
- Rinkenberger, J.L., et al. 2000. Mcl-1 deficiency results in peri-implantation embryonic lethality. *Genes Dev.* 14: 23-27.
- Bae, J., et al. 2000. Mcl-1S, a splicing variant of the antiapoptotic Bcl-2 family member Mcl-1, encodes a proapoptotic protein possessing only the BH3 domain. *J. Biol. Chem.* 275: 25255-25261.
- Opferman, J.T., et al. 2003. Development and maintenance of B and T lymphocytes requires antiapoptotic Mcl-1. *Nature* 426: 671-676.
- Leu, J.I., et al. 2004. Mitochondrial p53 activates Bak and causes disruption of a Bak-Mcl-1 complex. *Nat. Cell Biol.* 6: 443-450.
- Opferman, J.T., et al. 2005. Obligate role of anti-apoptotic Mcl-1 in the survival of hematopoietic stem cells. *Science* 307: 1101-1104.

## CHROMOSOMAL LOCATION

Genetic locus: MCL1 (human) mapping to 1q21.3.

## SOURCE

Mcl-1 (MCL-401) is a mouse monoclonal antibody raised against recombinant full-length Mcl-1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

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

## APPLICATIONS

Mcl-1 (MCL-401) is recommended for detection of Mcl-1 of 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).

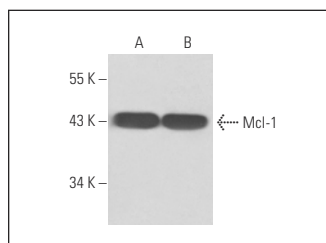
Suitable for use as control antibody for Mcl-1 siRNA (h): sc-35877, Mcl-1 shRNA Plasmid (h): sc-35877-SH and Mcl-1 shRNA (h) Lentiviral Particles: sc-35877-V.

Molecular Weight of Mcl-1 long form: 40 kDa.

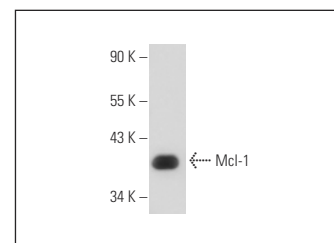
Molecular Weight of Mcl-1 short form: 32 kDa.

Positive Controls: Ramos cell lysate: sc-2216, Jurkat whole cell lysate: sc-2204 or K-562 whole cell lysate: sc-2203.

## DATA



Mcl-1 (MCL-401): sc-69839. Western blot analysis of Mcl-1 expression in Ramos (A) and K-562 (B) whole cell lysates.




Mcl-1 (MCL-401): sc-69839. Western blot analysis of human recombinant Mcl-1.

## SELECT PRODUCT CITATIONS

- Lin, C., et al. 2012. NOXA-induced alterations in the Bax/Smac axis enhance sensitivity of ovarian cancer cells to cisplatin. *PLoS ONE* 7: e36722.
- Hu, W., et al. 2012. Proapoptotic protein Smac mediates apoptosis in cisplatin-resistant ovarian cancer cells when treated with the anti-tumor agent AT101. *J. Biol. Chem.* 287: 68-80.
- Lee, J.H., et al. 2020. KCP10043F represses the proliferation of human non-small cell lung cancer cells by caspase-mediated apoptosis via STAT3 inactivation. *J. Clin. Med.* 9: 704.

## RESEARCH USE

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



**CONJUGATES**

See **Mcl-1 (22): sc-12756** for Mcl-1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.