SANTA CRUZ BIOTECHNOLOGY, INC.

# Menin (E-8): sc-376596

## BACKGROUND

Menin (multiple endocrine neoplasia I, MEN1, MEAI, SCG2) is a nuclear tumor suppressor that is mutated in patients with multiple endocrine neoplasia type I (MEN1). Menin can activate the transcription of differentiation-regulating genes by covalent histone modification. In osteoblasts, the interaction of menin and the TGFβ/Smad3 pathway negatively regulates BMP2/Smad1/5- and Runx2-dependent transcription activities leading to inhibition of late-stage differentiation. Menin regulates the expression of IGFBP-2 by influencing the IGFBP-2 promoter. Ectopic overexpression of Menin via adenoviruses induces apoptosis in murine embryonic fibroblasts in a Bax/Bak-dependent manner. Two mRNA exist and two variants of the shorter mRNA have alternative splicing that changes the CDS. Five variants where alternative splicing takes place in the 5' UTR have been identified.

## REFERENCES


1. Obungu, V.H., et al. 2003. Menin, a tumor suppressor, associates with nonmuscle myosin II-A heavy chain. Oncogene 22: 6347-6358.
2. Schnepp, R.W., et al. 2004. Menin induces apoptosis in murine embryonic fibroblasts. J. Biol. Chem. 279: 10685-10691.
3. Sowa, H., et al. 2004. Menin is required for bone morphogenetic protein 2- and transforming growth factor β-regulated osteoblastic differentiation through interaction with Smads and RUNX2. J. Biol. Chem. 279: 40267-40275.
4. La, P., et al. 2004. Direct binding of DNA by tumor suppressor Menin. J. Biol. Chem. 279: 49045-49054.
5. Hughes, C.M., et al. 2004. Menin associates with a trithorax family histone methyltransferase complex and with the hoxc8 locus. Mol. Cell 13: 587-597.
6. La, P., et al. 2004. Tumor suppressor Menin regulates expression of Insulin-like growth factor binding protein 2. Endocrinology 145: 3443-3450.
7. Naito, J., et al. 2005. Menin suppresses osteoblast differentiation by antagonizing the AP-1 factor, JunD. J. Biol. Chem. 280: 4785-4791.
8. Milne, T.A., et al. 2005. Menin and MLL cooperatively regulate expression of cyclin-dependent kinase inhibitors. Proc. Natl. Acad. Sci. USA 102: 749-754.


## CHROMOSOMAL LOCATION

Genetic locus: MEN1 (human) mapping to 11q13.1; Men1 (mouse) mapping to 19 A.

## SOURCE

Menin (E-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 583-610 at the C-terminus of Menin of human origin.

## PRODUCT

Each vial contains 200 µg $IgG_1$ 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-376596 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## APPLICATIONS

Menin (E-8) is recommended for detection of Menin 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).

Menin (E-8) is also recommended for detection of Menin in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Menin siRNA (h): sc-35922, Menin siRNA (m): sc-35923, Menin shRNA Plasmid (h): sc-35922-SH, Menin shRNA Plasmid (m): sc-35923-SH, Menin shRNA (h) Lentiviral Particles: sc-35922-V and Menin shRNA (m) Lentiviral Particles: sc-35923-V.

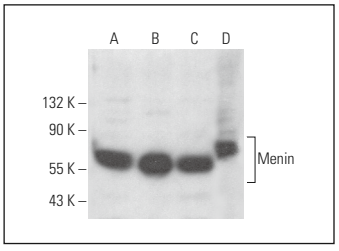
Molecular Weight of Menin: 67 kDa.

Positive Controls: K-562 nuclear extract: sc-2130, MOLT-4 nuclear extract: sc-2151 or A-431 nuclear extract: sc-2122.

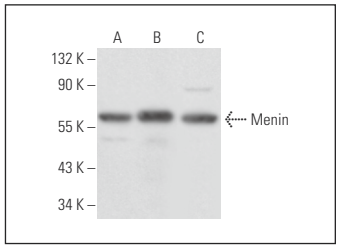
## RECOMMENDED SUPPORT REAGENTS

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




Menin (E-8): sc-376596. Western blot analysis of Menin expression in K-562 (**A**), MOLT-4 (**B**), HEL 92.1.7 (**C**) and WEHI-231 (**D**) nuclear extracts.




Menin (E-8): sc-376596. Western blot analysis of Menin expression in A-431 nuclear extract (**A**) and SW480 (**B**) and F9 (**C**) whole cell lysates.

## 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.