SANTA CRUZ BIOTECHNOLOGY, INC.

ME1 (C-6): sc-365891

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

ME1 (malic enzyme 1), also known as NADP-ME, MES or HUMNDME, is a 572 amino acid cytoplasmic protein that belongs to the malic enzyme family. Expressed ubiquitously with highest expression in liver and white adipose tissue, ME1 functions as an NADP-dependent enzyme that catalyzes the conversion of S-malate and NADP to pyruvate, carbon dioxide and NADPH (a reducing agent that participates in fatty acid biosynthesis). Through its ability to catalyze the reversible oxidative decarboxylation of malate, ME1 links the citric acid and glycolytic cycles. ME1 exists as a homotetramer that uses divalent metal cations, such as magnesium or manganese, as cofactors. The expression of ME1 is regulated by both thyroid hormone levels and the amount of carbohydrates in the diet, indicating that ME1 may play an important role as a housekeeping protein within the cell.

REFERENCES

1. Tessarolo, D., et al. 1991. Human malic enzymes in heart and muscle: evidence of a selective distribution. Biochem. Med. Metab. Biol. 45: 1-5.
2. Loeber, G., et al. 1994. Characterization of cytosolic malic enzyme in human tumor cells. FEBS Lett. 344: 181-186.
3. Gonzalez-Manchón, C., et al. 1995. Cloning, sequencing and functional expression of a cDNA encoding a NADP-dependent malic enzyme from human liver. Gene 159: 255-260.
4. Gonzalez-Manchón, C., et al. 1997. Molecular cloning and functional characterization of the human cytosolic malic enzyme promoter: thyroid hormone responsiveness. DNA Cell Biol. 16: 533-544.

CHROMOSOMAL LOCATION

Genetic locus: ME1 (human) mapping to 6q14.2; Me1 (mouse) mapping to 9 E3.1.

SOURCE

ME1 (C-6) is a mouse monoclonal antibody raised against amino acids 34-80 mapping near the N-terminus of ME1 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.

ME1 (C-6) is available conjugated to agarose (sc-365891 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365891 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365891 PE), fluorescein (sc-365891 FITC), Alexa Fluor® 488 (sc-365891 AF488), Alexa Fluor® 546 (sc-365891 AF546), Alexa Fluor® 594 (sc-365891 AF594) or Alexa Fluor® 647 (sc-365891 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365891 AF680) or Alexa Fluor® 790 (sc-365891 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

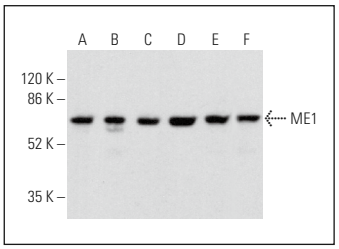
ME1 (C-6) is recommended for detection of ME1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for ME1 siRNA (h): sc-95470, ME1 siRNA (m): sc-149342, ME1 shRNA Plasmid (h): sc-95470-SH, ME1 shRNA Plasmid (m): sc-149342-SH, ME1 shRNA (h) Lentiviral Particles: sc-95470-V and ME1 shRNA (m) Lentiviral Particles: sc-149342-V.

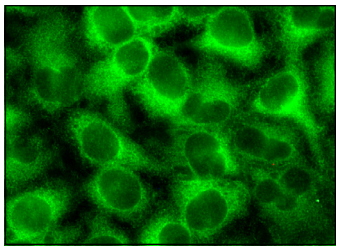
Molecular Weight of ME1: 64 kDa.

Positive Controls: NIH/3T3 cell lysate: sc-2210, HeLa whole cell lysate: sc-2200 or MCF7 whole cell lysate: sc-2206.

DATA



ME1 (C-6): sc-365891. Western blot analysis of ME1 expression in HeLa (**A**), A-431 (**B**), MCF7 (**C**), PC-12 (**D**) and NIH/3T3 (**E**) whole cell lysates and human stomach tissue extract (**F**). Detection reagent used: m-IgGκ BP-HRP: sc-516102.



ME1 (C-6): sc-365891. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Liu, M., et al. 2018. Tumor-suppressing effects of microRNA-612 in bladder cancer cells by targeting malic enzyme 1 expression. Int. J. Oncol. 52: 1923-1933.
2. Zou, Y., et al. 2020. Illuminating NAD^+ metabolism in live cells and *in vivo* using a genetically encoded fluorescent sensor. Dev. Cell 53: 240-252.e7.
3. Shi, J., et al. 2024. ABCG2 and SLC1A5 functionally interact to rewire metabolism and confer a survival advantage to cancer cells under oxidative stress. J. Biol. Chem. 300: 107299.

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 for detailed protocols and support products.