SANTA CRUZ BIOTECHNOLOGY, INC.

ME1 (99.1): sc-100569

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.

CHROMOSOMAL LOCATION

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

SOURCE

ME1 (99.1) is a mouse monoclonal antibody raised against recombinant ME1 of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 kappa light chain 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.

PROTOCOLS

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

APPLICATIONS

ME1 (99.1) is recommended for detection of ME1 of mouse, rat and 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), 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 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.

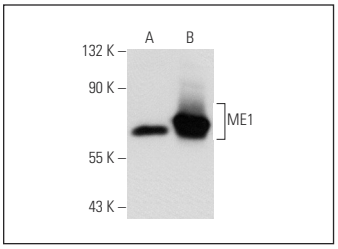
Molecular Weight of ME1: 64 kDa.

Positive Controls: ME1 (h2): 293T Lysate: sc-172177, Hep G2 cell lysate: sc-2227 or HeLa whole cell lysate: sc-2200.

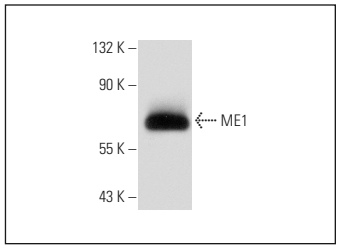
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

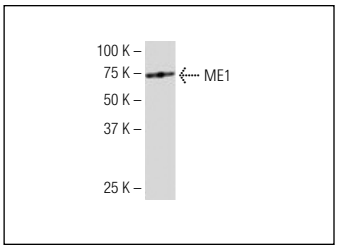
DATA



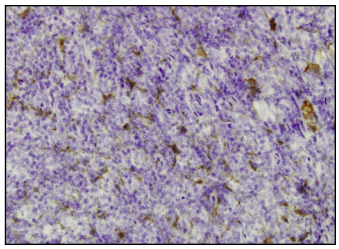
ME1 (99.1): sc-100569. Western blot analysis of ME1 expression in non-transfected: sc-117752 (**A**) and human ME1 transfected: sc-172177 (**B**) 293T whole cell lysates.



ME1 (99.1): sc-100569. Western blot analysis of ME1 expression in HeLa whole cell lysate.



ME1 (99.1): sc-100569. Western blot analysis of ME1 expression in Hep G2 whole cell lysate.



ME1 (99.1): sc-100569. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human tonsil tissue showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Jiang, P., et al. 2013. Reciprocal regulation of p53 and malic enzymes modulates metabolism and senescence. Nature 493: 689-693.
2. Shen, H., et al. 2017. MicroRNA-30a attenuates mutant KRAS-driven colorectal tumorigenesis via direct suppression of ME1. Cell Death Differ. 24: 1253-1262.
3. Dey, P., et al. 2017. Genomic deletion of malic enzyme 2 confers collateral lethality in pancreatic cancer. Nature 542: 119-123.
4. Ngo, H.K.C., et al. 2017. Nrf2 mutagenic activation drives hepatocarcinogenesis. Cancer Res. 77: 4797-4808.

RESEARCH USE

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