SANTA CRUZ BIOTECHNOLOGY, INC.

PME-1 (B-12): sc-25278

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Protein phosphatase methylesterase-1 (PME-1) catalyzes the demethylation and inactivation of protein phosphatase (PP2A), which is a multimeric phosphoserine/threonine protein phosphatase associated with growth inhibition and cell cycle arrest. Carboxymethylation and demethylation is a covalent modifcation that regulates the catalytic activity of certain proteins in eukaryotes. Electrostatic interactions that occur at residues or metals in or near the active site can influence the specificity of carboxymethylation and demethylation. PME-1 can demethylate PP2A catalytic subunit *in vitro* and okadaic acid treatment is capable of inhibiting this reaction. PME-1 is conserved from yeast to human and contains a motif found in lipases having a catalytic triad-activated serine as their active site nucleophile.

CHROMOSOMAL LOCATION

Genetic locus: PPME1 (human) mapping to 11q13.4; Ppme1 (mouse) mapping to 7 E3.

SOURCE

PME-1 (B-12) is a mouse monoclonal antibody epitope corresponding to amino acids 161-386 of PME-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PME-1 (B-12) is available conjugated to agarose (sc-25278 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-25278 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-25278 PE), fluorescein (sc-25278 FITC), Alexa Fluor® 488 (sc-25278 AF488), Alexa Fluor® 546 (sc-25278 AF546), Alexa Fluor® 594 (sc-25278 AF594) or Alexa Fluor® 647 (sc-25278 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-25278 AF680) or Alexa Fluor® 790 (sc-25278 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

PME-1 (B-12) is recommended for detection of PME-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:500), 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 PME-1 siRNA (h): sc-36281, PME-1 siRNA (m): sc-36282, PME-1 shRNA Plasmid (h): sc-36281-SH, PME-1 shRNA Plasmid (m): sc-36282-SH, PME-1 shRNA (h) Lentiviral Particles: sc-36281-V and PME-1 shRNA (m) Lentiviral Particles: sc-36282-V.

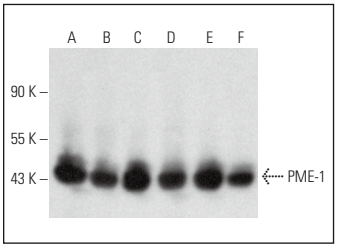
Molecular Weight of PME-1: 44 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, Neuro-2A whole cell lysate: sc-364185 or EOC 20 whole cell lysate: sc-364187.

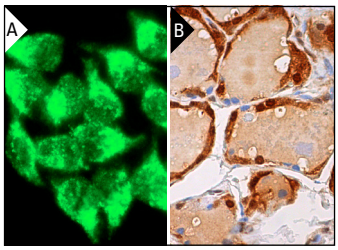
STORAGE

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

DATA



PME-1 (B-12): sc-25278. Western blot analysis of PME-1 expression in K-562 (**A**), SNU-16 (**B**), HEL 92.1.7 (**C**), Neuro-2A (**D**), EOC 20 (**E**) and RIN-m5F (**F**) whole cell lysates.



PME-1 (B-12): sc-25278. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human thyroid gland tissue showing nuclear and cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Jackson, J.B. and Pallas, D.C. 2012. Circumventing cellular control of PP2A by methylation promotes transformation in an Akt-dependent manner. Neoplasia 14: 585-599.
2. Du, B., et al. 2020. Expression pattern and prognostic utility of PME-1 in uatients with hepatocellular carcinoma. Cancer Manag. Res. 12: 2937-2945.
3. Routila, J., et al. 2021. Cancer cell line microarray as a novel screening method for identification of radioresistance biomarkers in head and neck squamous cell carcinoma. BMC Cancer 21: 868.
4. Rogg, M., et al. 2022. NUP133 controls nuclear pore assembly, transcriptome composition, and cytoskeleton regulation in podocytes. Cells 11: 1259.
5. Aakula, A., et al. 2023. PP2A methylesterase PME-1 suppresses anoikis and is associated with therapy relapse of PTEN-deficient prostate cancers. Mol. Oncol. 17: 1007-1023.
6. Guffens, L., et al. 2023. PME-1 sensitizes glioblastoma cells to oxidative stress-induced cell death by attenuating PP2A-B55α-mediated inactivation of MAPKAPK2-RIPK1 signaling. Cell Death Discov. 9: 265.
7. Ando, S., et al. 2023. Age-related alterations in protein phosphatase 2A methylation levels in brains of cynomolgus monkeys: a pilot study. J. Biochem. 173: 435-445.
8. Ikeda, S., et al. 2024. Transcriptome analysis revealed that PME-1 suppresses inflammatory signaling, activates PI3K/Akt signaling, and promotes epithelial-mesenchymal transition. Biochem. Biophys. Res. Commun. 692: 149148.
9. Ando, S., et al. 2024. The luciferase-based in vivo protein-protein interaction assay revealed that CHK1 promotes PP2A and PME-1 interaction. J. Biol. Chem. 300: 107277.

RESEARCH USE

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