SANTA CRUZ BIOTECHNOLOGY, INC.

MEPE (C-4): sc-377035

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

MEPE (matrix extracellular phosphoglycoprotein), also known as OF45 (osteoblast/osteocyte factor 45), is a 525 amino acid extracellular matrix protein. Expressed in osteocytes and brain, MEPE is a regulator of bone metabolism that is thought to mediate mineralization and demineralization within the osteocyte microenvironment. MEPE contains an RGD cell-attachment motif and shares molecular similarities with several dentin-bone extracellular matrix RGD-containing phosphoglycoproteins, including OPN (osteopontin) and DSP (dentin sialophosphoprotein). Via its ability to control bone mineralization, MEPE is associated with various developmental events such as skeletogenesis, bone regeneration and odontogenesis. MEPE is secreted in hypophosphatemic osteomalacia tumors, suggesting a possible role in the pathophysiology of bone-related cancers. Defects in the gene encoding MEPE may be associated with osteomalacia, an adult form of the childhood disease known as rickets that is caused by inadequate bone mineralization.

REFERENCES

1. MacDougall, M., et al. 2002. MEPE/OF45, a new dentin/bone matrix protein and candidate gene for dentin diseases mapping to chromosome 4q21. Connect. Tissue Res. 43: 320-330.
2. Bresler, D., et al. 2004. Serum MEPE-ASARM-peptides are elevated in X-linked rickets (HYP): implications for phosphaturia and rickets. J. Endocrinol. 183: R1-R9.
3. Lu, C., et al. 2004. MEPE is expressed during skeletal development and regeneration. Histochem. Cell Biol. 121: 493-499.

CHROMOSOMAL LOCATION

Genetic locus: MEPE (human) mapping to 4q22.1; Mepe (mouse) mapping to 5 E5.

SOURCE

MEPE (C-4) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of MEPE of rat 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.

MEPE (C-4) is available conjugated to agarose (sc-377035 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377035 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377035 PE), fluorescein (sc-377035 FITC), Alexa Fluor® 488 (sc-377035 AF488), Alexa Fluor® 546 (sc-377035 AF546), Alexa Fluor® 594 (sc-377035 AF594) or Alexa Fluor® 647 (sc-377035 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377035 AF680) or Alexa Fluor® 790 (sc-377035 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

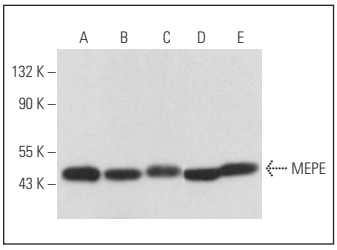
MEPE (C-4) is recommended for detection of MEPE of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), 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 MEPE siRNA (h): sc-75773, MEPE siRNA (m): sc-75774, MEPE shRNA Plasmid (h): sc-75773-SH, MEPE shRNA Plasmid (m): sc-75774-SH, MEPE shRNA (h) Lentiviral Particles: sc-75773-V and MEPE shRNA (m) Lentiviral Particles: sc-75774-V.

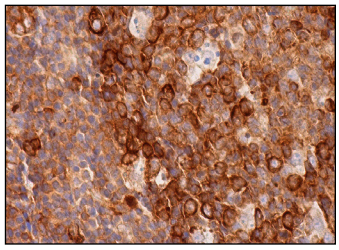
Molecular Weight of MEPE: 57 kDa.

Positive Controls: C6 whole cell lysate: sc-364373, HeLa whole cell lysate: sc-2200 or Saos-2 cell lysate: sc-2235.

DATA



MEPE (C-4): sc-377035. Western blot analysis of MEPE expression in SK-N-SH (**A**), Hep G2 (**B**), HeLa (**C**), C6 (**D**) and Saos-2 (**E**) whole cell lysates.



MEPE (C-4): sc-377035. Immunoperoxidase staining of formalin fixed, paraffin-embedded human tonsil tissue showing membrane and cytoplasmic staining of cells in germinal and non-germinal centers.

SELECT PRODUCT CITATIONS

1. Li, F., et al. 2018. Pigment epithelium derived factor regulates human Sost/Sclerostin and other osteocyte gene expression via the receptor and induction of Erk/GSK-3β/β-catenin signaling. Biochim. Biophys. Acta Mol. Basis Dis. 1864: 3449-3458.
2. Li, F., et al. 2019. Pigment epithelium-derived factor (PEDF) reduced expression and synthesis of SOST/sclerostin in bone explant cultures: implication of PEDF-osteocyte gene regulation *in vivo*. J. Bone Miner. Metab. 37: 773-779.
3. Liu, H., et al. 2019. Effects of different oxygen concentrations on the proliferation, survival, migration, and osteogenic differentiation of MC3T3-E1 cells. Connect. Tissue Res. 60: 240-253.
4. Leow, M.K.S., et al. 2021. Paraneoplastic secretion of multiple phosphatonins from a deep fibrous histiocytoma causing oncogenic osteomalacia. J. Clin. Endocrinol. Metab. 106: e2299-e2308.

RESEARCH USE

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