

MEPE (R-300): sc-68923

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.
4. Nampei, A., et al. 2004. Matrix extracellular phosphoglycoprotein (MEPE) is highly expressed in osteocytes in human bone. *J. Bone Miner. Metab.* 22: 176-184.
5. Martin, A., et al. 2007. Degradation of MEPE, DMP1, and release of SIBLING ASARM-peptides (minhibins): ASARM-peptide(s) are directly responsible for defective mineralization in HYP. *Endocrinology* 149: 1757-1772.
6. Harris, S.E., et al. 2007. DMP1 and MEPE expression are elevated in osteocytes after mechanical loading *in vivo*: Theoretical role in controlling mineral quality in the perilacunar matrix. *J. Musculoskelet. Neuronal Interact.* 7: 313-315.
7. Six, N., et al. 2007. Dentonin, a MEPE fragment, initiates pulp-healing response to injury. *J. Dent. Res.* 86: 780-785.
8. Gluhak-Heinrich, J., et al. 2007. MEPE expression in osteocytes during orthodontic tooth movement. *Arch. Oral Biol.* 52: 684-690.
9. Trueb, B., et al. 2007. Expression of phosphoproteins and amelotin in teeth. *Int. J. Mol. Med.* 19: 49-54.

CHROMOSOMAL LOCATION

Genetic locus: Mepe (rat) mapping to 14p22.

SOURCE

MEPE (R-300) is a rabbit polyclonal antibody raised against amino acids 1-300 mapping at the N-terminus of MEPE of rat origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

MEPE (R-300) is recommended for detection of MEPE of rat 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of MEPE: 57 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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.

PROTOCOLS

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



Try **MEPE (C-4): sc-377035** or **MEPE (B-6): sc-390608**, our highly recommended monoclonal alternatives to MEPE (R-300).