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Rabbit Anti-DMP1 antibody

SL12359R

Product Name:	DMP1
Chinese Name:	牙本质基质蛋白1抗体
Alias:	ARHP; ARHR; AV020965; Dentin matrix acidic phosphoprotein 1; Dentin matrix protein 1; DENTMAT; DMP 1; Dmp; MGC130441; PP; Serine rich acidic phosphoprotein; DMP1_HUMAN.
Organism Species:	Rabbit
Clonality:	Polyclonal
React Species:	Human,
Applications:	WB=1:500-2000ELISA=1:500-1000IHC-P=1:400-800IHC-F=1:400-800ICC=1:100-500IF=1:100-500（Paraffin sections need antigen repair） not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Molecular weight:	54kDa
Cellular localization:	The nucleuscytoplasmicExtracellular matrixSecretory protein
Form:	Lyophilized or Liquid
Concentration:	1mg/ml
immunogen:	KLH conjugated synthetic peptide derived from human DMP1:221-320/513
Lsotype:	IgG
Purification:	affinity purified by Protein A
Storage Buffer:	0.01M TBS(pH7.4) with 1% BSA, 0.03% Proclin300 and 50% Glycerol.
Storage:	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. The lyophilized antibody is stable at room temperature for at least one month and for greater than a year when kept at -20°C. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.
PubMed:	PubMed
Product Detail:	DMP-1 is a member of the small integrin ligand N-linked glycoprotein family. It is important for the mineralization of bone and dentin. DMP-1 is expressed in bone, tooth and hypertrophic cartilage. It is synthesized by preosteoblasts and contains a large number of acidic domains. DMP-1 localizes to the nucleus of undifferentiated osteoblasts where it functions as a transcriptional regulator for osteoblast-specific gene

activation and induces osteoblast differentiation. During osteoblast maturation, DMP-1 undergoes a conformational change and becomes phosphorylated by casein kinase II in response to an influx of calcium ions to the nucleus. DMP-1 is then exported to the extracellular matrix (ECM) where it regulates the nucleation of hydroxyapatite and the formation of calcified tissue. DMP-1 is proteolytically processed into N- and C-terminal fragments in the ECM of bone and dentin. The protein has also been identified in bone as a high molecular weight proteoglycan comprised of the N-terminal DMP-1 fragment and chondroitin sulfate.The loss of DMP-1 can result in hypomineralized bone.

Function:
DMP1 is an extracellular matrix protein and a member of the small integrin binding ligand N-linked glycoprotein family. It is critical for proper mineralization of bone and dentin, and is present in diverse cells of bone and tooth tissues. DMP1 contains a large number of acidic domains, multiple phosphorylation sites, a functional arg-gly-asp cell attachment sequence, and a DNA binding domain. DMP1 may also have a dual function during osteoblast differentiation. In the nucleus of undifferentiated osteoblasts the unphosphorylated form acts as a transcriptional component for activation of osteoblast-specific genes like osteocalcin. During the osteoblast to osteocyte transition phase it is phosphorylated and exported into the extracellular matrix, where it regulates nucleation of hydroxyapatite.

Subunit:
Interacts with importin alpha.

Subcellular Location:
Nucleus. Cytoplasm. Secreted; extracellular space; extracellular matrix. Note=In proliferating preosteoblasts it is nuclear, during early maturation stage is cytoplasmic and in mature osteoblast localizes in the mineralizated matrix. Export from the nucleus of differentiating osteoblast is triggered by the release of calcium from intracellular stores followed by a massive influx of this pool of calcium into the nucleus.

Tissue Specificity:
Expressed in tooth particularly in odontoblast, ameloblast and cementoblast.

Post-translational modifications:
Phosphorylated in the cytosol and extracellular matrix and unphosphorylated in the nucleus. Phosphorylation is necessary for nucleocytoplasmic transport and may be catalyzed by a nuclear isoform of CK2 and can be augmented by calcium. Phosphorylated (in vitro) by FAM20C in the extracellular medium at sites within the S-x-E/pS motif.

DISEASE:
Defects in DMP1 are the cause of rickets hypophosphatemic autosomal recessive type 1 (ARHR1) [MIM:241520]. A hereditary form of hypophosphatemic rickets, a disorder of proximal renal tubule function that causes phosphate loss, hypophosphatemia and

	skeletal deformities, including rickets and osteomalacia unresponsive to vitamin D. Symptoms are bone pain, fractures and growth abnormalities. **SWISS:** Q13316 **Gene ID:** 1758 **Database links:** Entrez Gene: 1758Human Entrez Gene: 13406Mouse Omim: 600980Human SwissProt: Q13316Human SwissProt: O55188Mouse **Important Note:** This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.