



DMP1 Monoclonal Antibody

Catalog No	YP-mAb-04988
Isotype	IgG
Reactivity	Human;Mouse;Rat
Applications	WB
Gene Name	DMP1
Immunogen	Synthesized peptide derived from human protein . at AA range: 430-510
Specificity	DMP1 Monoclonal Antibody detects endogenous levels of protein.
Formulation	Liquid in PBS containing 50% glycerol, and 0.02% sodium azide.
Source	Monoclonal, Mouse,IgG
Purification	The antibody was affinity-purified from mouse antiserum by affinity-chromatography using epitope-specific immunogen.
Dilution	WB 1:500-1:2000
Concentration	1 mg/ml
Purity	≥90%
Storage Stability	-20°C/1 year
Synonyms	ARHP;ARHR;DMP-1;DMP1;Dentin matrix acidic phosphoprotein 1 (DMP-1) (Dentin matrix protein 1)
Observed Band	56kD
Calculated Molecular Weight	56kD
Cell Pathway	Nucleus . Cytoplasm . Secreted, extracellular space, extracellular matrix . In proliferating preosteoblasts it is nuclear, during early maturation stage is cytoplasmic and in mature osteoblast localizes in the mineralized 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.
Function	disease:Defects in DMP1 are the cause of autosomal recessive hypophosphatemic rickets (ARHR) [MIM:241520]. ARHR is characterized by rickets, osteomalacia, elevated FGF23 serum levels and hypophosphatemia., function:May have a dual function during osteoblast differentiation. In the nucleus of undifferentiated osteoblasts, 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. PTM: 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. subcellular location: In proliferating preosteoblasts

Background

Dentin matrix acidic phosphoprotein is an extracellular matrix protein and a member of the small integrin binding ligand N-linked glycoprotein family. This protein, which is critical for proper mineralization of bone and dentin, is present in diverse cells of bone and tooth tissues. The protein contains a large number of acidic domains, multiple phosphorylation sites, a functional arg-gly-asn cell attachment sequence, and a DNA binding domain. In undifferentiated osteoblasts it is primarily a nuclear protein that regulates the expression of osteoblast-specific genes. During osteoblast maturation the protein becomes phosphorylated and is exported to the extracellular matrix, where it orchestrates mineralized matrix formation. Mutations in the gene are known to cause autosomal recessive hypophosphatemia, a disease that manifests as rickets and osteomalacia. The gene structure is conserved

matters needing attention

Avoid repeated freezing and thawing!

Usage suggestions

This product can be used in immunological reaction related experiments. For more information, please consult technical personnel.

Products Images