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DMP4 Antibody (C-term)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP10983b

Product Information

Application	WB, IHC-P, E
Primary Accession	Q8IXL6
Other Accession	Q5MJS3, NP_064608.2
Reactivity	Human
Predicted	Mouse, Rat, Bovine, Canine, Rabbit, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB24962
Calculated MW	66234
Antigen Region	443-471

Additional Information

Gene ID	56975
Other Names	Extracellular serine/threonine protein kinase FAM20C, Dentin matrix protein 4, DMP-4, Golgi-enriched fraction casein kinase, GEF-CK, Protein FAM20C, FAM20C, DMP4
Target/Specificity	This DMP4 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 443-471 amino acids from the C-terminal region of human DMP4.
Dilution	WB~~1:1000 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	DMP4 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	FAM20C (HGNC:22140)
Function	Golgi serine/threonine protein kinase that phosphorylates secretory

pathway proteins within Ser-x-Glu/pSer motifs and plays a key role in biomineralization of bones and teeth (PubMed:22582013, PubMed:23754375, PubMed:25789606). Constitutes the main protein kinase for extracellular proteins, generating the majority of the extracellular phosphoproteome (PubMed:26091039). Mainly phosphorylates proteins within the Ser-x-Glu/pSer motif, but also displays a broader substrate specificity (PubMed:26091039). Phosphorylates ERO1A, enhancing its activity which is required to maintain endoplasmic reticulum redox homeostasis and for oxidative protein folding (PubMed:29858230, PubMed:34349020). During endoplasmic reticulum stress, phosphorylates P4HB/PDIA1 which induces a functional switch, causing P4HB to change from an oxidoreductase to a molecular chaperone (PubMed:32149426). This is critical to maintain ER proteostasis and reduce cell death under ER stress (PubMed:32149426). Phosphorylation of P4HB also promotes its interaction with ERN1, leading to reduced activity of ERN1, a key sensor for the endoplasmic reticulum unfolded protein response (PubMed:32149426). Required for osteoblast differentiation and mineralization (PubMed:34349020). Phosphorylates casein as well as a number of proteins involved in biomineralization such as AMELX, AMTN, ENAM and SPP1/OPN (PubMed:22582013, PubMed:25789606, PubMed:34349020). In addition to its role in biomineralization, also plays a role in lipid homeostasis, wound healing and cell migration and adhesion (PubMed:26091039).

Cellular Location

Golgi apparatus membrane; Single-pass type II membrane protein. Secreted. Endoplasmic reticulum. Note=Resides in the Golgi apparatus membrane and is secreted following propeptide cleavage (PubMed:34349020). Retained in the endoplasmic reticulum (ER) in response to ER stress where it phosphorylates P4HB (PubMed:32149426)

Tissue Location

Widely expressed..

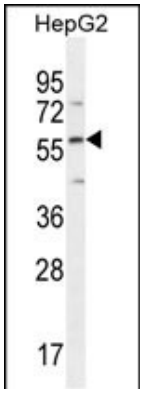
Background

Calcium-binding protein which may play a role in dentin mineralization (By similarity).

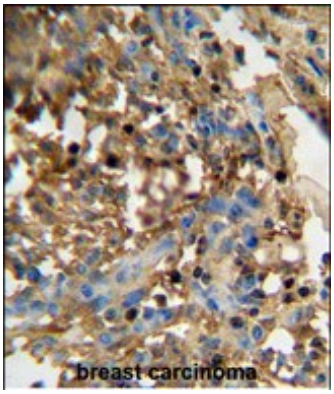
References

Simpson, M.A., et al. Clin. Genet. 75(3):271-276(2009)
Simpson, M.A., et al. Am. J. Hum. Genet. 81(5):906-912(2007)
Hao, J., et al. J. Biol. Chem. 282(21):15357-15365(2007)
Nalbant, D., et al. BMC Genomics 6 (1), 11 (2005) :

Images



DMP4 Antibody (C-term) (Cat. #AP10983b) western blot analysis in HepG2 cell line lysates (35ug/lane).This demonstrates the DMP4 antibody detected the DMP4 protein (arrow).



DMP4 antibody (C-term) (Cat. #AP10983b) immunohistochemistry analysis in formalin fixed and paraffin embedded human breast carcinoma followed by peroxidase conjugation of the secondary antibody and DAB staining. This data demonstrates the use of the DMP4 antibody (C-term) for immunohistochemistry. Clinical relevance has not been evaluated.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.