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Osteocalcin Antibody (N-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP2002a

Product Information

Application	WB, IHC-P, E
Primary Accession	P02818
Other Accession	NP_954642
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	10963
Antigen Region	2-32

Additional Information

Gene ID	632
Other Names	Osteocalcin, Bone Gla protein, BGP, Gamma-carboxyglutamic acid-containing protein, BGLAP
Target/Specificity	This Osteocalcin antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 2-32 amino acids from the N-terminal region of human Osteocalcin.
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 prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
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	Osteocalcin Antibody (N-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	BGLAP
Function	Bone protein that constitutes 1-2% of the total bone protein, and which acts as a negative regulator of bone formation (PubMed:3019668, PubMed:6967872). Functions to limit bone formation without impairing bone resorption or mineralization (By similarity). It binds strongly to apatite and

calcium (PubMed:6967872).

Cellular Location Secreted.

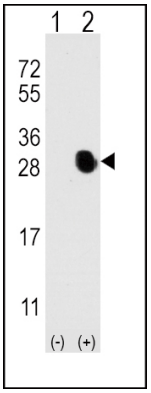
Background

Prior to the formation of calcified bone, noncollagenous proteins form in the extracellular bone matrix. Gamma-carboxyglutamic acid residues are formed by vitamin K, vitamin-D regulated calcium binding proteins containing residues of Gla. These residues are essential for the binding of calcium and constitue 1-2% of total bone protein. Osteocalcin itself binds strongly to apatite and calcium. Production of osteocalcin is expressed late in normal bone development and is characteristic of mature osteoblasts. Regular osteocalcin production has been shown to be linked to the p53 tumor suppressor gene. The p53 gene undergoes rearrangement in a high percentage of osteosarcomas, resulting in loss of its expression. The loss of p53 regulation inhibits further osteocalcin production. The absence of end-point differentiation in bone due to p53 rearrangements and lack of osteocalcin production may contribute to the maintenance of the tumorigenic phenotype in osteosarcomas.

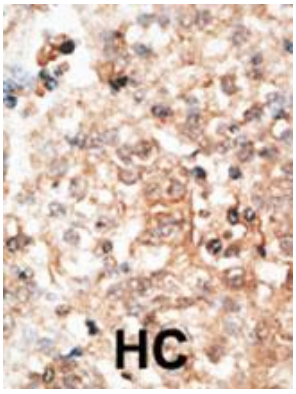
References

Yamada, Y., et al., J. Clin. Endocrinol. Metab. 88(7):3372-3378 (2003). Gronthos, S., et al., J. Bone Miner. Res. 18(4):716-722 (2003). Yousfi, M., et al., Biochem. Biophys. Res. Commun. 297(3):641-644 (2002). Willis, D.M., et al., J. Biol. Chem. 277(40):37280-37291 (2002). Viereck, V., et al., J. Cell. Biochem. 86(2):348-356 (2002).

Images



Western blot analysis of Osteocalcin (arrow) using rabbit polyclonal Osteocalcin Antibody (N-term) (Cat.#AP2002a).293 cell lysates (2 ug/lane) either nontransfected (Lane 1) or transiently transfected with the BGLAP gene (Lane 2) (Origene Technologies).



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.