

Anti-Osteocalcin/BGLAP Antibody

Catalog Number: PB9920

About Bglap

Osteocalcin, also known as bone gamma-carboxyglutamic acid-containing protein (BGLAP), is a noncollagenous protein found in bone and dentin. In humans, the osteocalcin is encoded by the BGLAP gene. Its receptor is GPRC6A. It is mapped to 1q22. Osteocalcin may play a role in the body's metabolic regulation and is pro-osteoblastic, or bone-building. It acts as a hormone in the body, causing beta cells in the pancreas to release more insulin, and at the same time directing fat cells to release the hormone adiponectin, which increases sensitivity to insulin. Also, it may play a role in male fertility. And it is found that picomolar amounts of osteocalcin affected insulin secretion and beta-cell proliferation.

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Overview

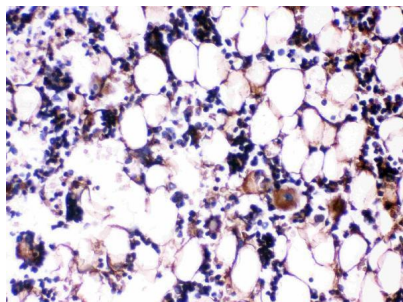
Product Name	Anti-Osteocalcin/BGLAP Antibody
Reactive Species	Rat
Description	Boster Bio Anti-Osteocalcin/BGLAP Antibody catalog # PB9920. Tested in Flow Cytometry, IHC applications. This antibody reacts with Rat.
Application	Flow Cytometry, IHC
Clonality	Polyclonal
Formulation	Each vial contains antibody formulated with stabilizing components, 0.9 mg NaCl, 0.2 mg Na ₂ HPO ₄ , and 0.05 mg NaN ₃ . *This antibody is supplied in a stabilized formulation. Compatibility with conjugation reactions depends on the chemistry of the conjugation method used. For conjugation methods that are not compatible with the stabilizing components present in this formulation, a carrier-free antibody format is required.
Storage Instructions	Store at -20°C for one year from date of receipt. After reconstitution, at 4°C for one month. It can also be aliquotted and stored frozen at -20°C for six months. Avoid repeated freeze-thaw cycles.
Host	Rabbit
Uniprot ID	P04640

Technical Details

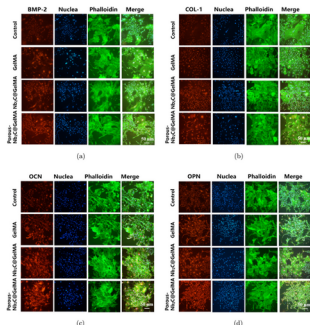
Immunogen	E. coli-derived rat Osteocalcin recombinant protein (Position: Y50-V99). Rat Osteocalcin shares
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	80.9% and 68.9% amino acid (aa) sequence identity with human and mouse Osteocalcin, respectively.
Recommended Detection Systems	Boster recommends HRP Conjugated anti-Rabbit IgG Super Vision Assay Kit (SV0002-1) for IHC(P).
Cross Reactivity	No cross-reactivity with other proteins
Isotype	Rabbit IgG
Form	Lyophilized
Concentration	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml.
Purification	Immunogen affinity purified.
Suggested Dilutions	Immunohistochemistry (Paraffin-embedded Section), 0.5-1ug/ml, Rat Flow Cytometry (Fixed), 1-3ug/1x10 ⁶ cells, Rat Note: For flow cytometry (FCM), suitable for fixed cells only. Not suitable for FACS or surface flow cytometry using live cells.

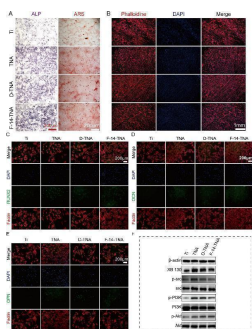
Anti-Osteocalcin/BGLAP Antibody (PB9920) Images



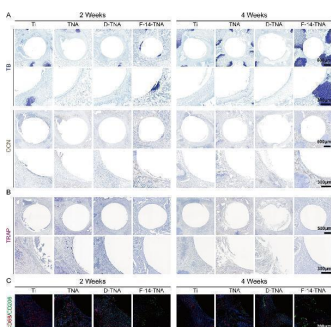
IHC analysis of Osteocalcin using anti-Osteocalcin antibody (PB9920). Osteocalcin was detected in paraffin-embedded section of rat tibia tissues. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1ug/ml rabbit anti-Osteocalcin Antibody (PB9920) overnight at 4°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Streptavidin-Biotin-Complex (SABC)(Catalog # SA1022) with DAB as the chromogen.



IF staining images of (a) BMP-2, (b) COL-1, (c) OCN, and (d) OPN in BMSCs (red: osteogenic proteins and genes; green: cytoskeleton; blue: nucleus). Index in PubMed under a CC BY license. PMID: 10.1142/S1793545824420021

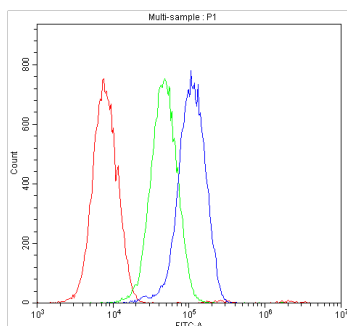


In vitro osteoclast inhibition and osteogenic differentiation evaluation of F-14-TNA. A) Osteogenic differentiation of BMSCs treated with various groups by ALP at 7 days and ARS at 21 days. B) Phalloidin-labeled osteoclast cytoskeleton. C-E) IF analysis revealed RUNX2, OCN, and OPN expression in BMSCs cells. F) WB analysis revealed XB130, p-Src, p-PI3K, and p-Akt expression in BMSCs cells. N = 3. Index in PubMed under a CC BY license. PMID: 40952251



Histological and IF analyses. A) TB staining and IHC staining (OCN) of the bone tissue around the implant at postoperative 2 and 4 weeks. B) TRAP staining of the bone tissue around the implant at postoperative 2 and 4 weeks. C) IF staining of CD68 (M1) and CD206 (M2) for macrophage polarization. Index in PubMed under a CC BY license. PMID: 40952251

Flow Cytometry analysis of L6 cells using anti-Osteocalcin antibody (PB9920). Overlay histogram showing L6 cells stained with PB9920 (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were



blocked with 10% normal goat serum. And then incubated with rabbit anti-Osteocalcin Antibody (PB9920, 1 μ g/1x10⁶ cells) for 30 min at 20°C. DyLight®488 conjugated goat anti-rabbit IgG (BA1127, 5-10 μ g/1x10⁶ cells) was used as secondary antibody for 30 minutes at 20°C. Isotype control antibody (Green line) was rabbit IgG (1 μ g/1x10⁶) used under the same conditions. Unlabelled sample (Red line) was also used as a control.

8 Publications Citing This Product

1. PubMed ID: -, Caiyun Mu, Ye He, Yan Hu, Menghuan Li, Maowen Chen, Rong Wang, Yang Xiang, Zhong Luo, Kaiyong Cai, Construction of chemokine substance P-embedded biomimetic multilayer onto bioactive magnesium silicate-titanium implant for bone regeneration, Applied Materials Today
2. PubMed ID: 28253279, Liu Q, Ma Y, Wang J, Zhu X, Yang Y, Mei Y. PLoS One. 2017 Mar 2;12(3):e0172693. doi: 10.1371/journal.pone.0172693. eCollection 2017. Demineralized bone matrix used for direct pulp capping in rats
3. PubMed ID: 23990941, Electrospun Poly(L-lactide)/Poly(?-caprolactone) Blend Nanofibrous Scaffold: Characterization and Biocompatibility with Human Adipose-Derived Stem Cells

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