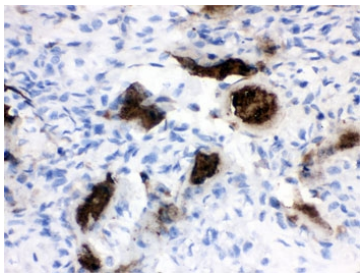
# Osteocalcin Antibody / Bone Gamma-Carboxyglutamic Acid Protein Antibody (R32435)

| Catalog No. | Formulation | Size |
|---|---|---|
| R32435 | 0.5mg/ml if reconstituted with 0.2ml sterile DI water | 100 ug |

**Bulk quote request**

| | |
|---|---|
| **Availability** | 1-3 business days |
| **Species Reactivity** | Human |
| **Format** | Antigen affinity purified |
| **Host** | Rabbit |
| **Clonality** | Polyclonal (rabbit origin) |
| **Isotype** | Rabbit IgG |
| **Purity** | Antigen affinity |
| **Buffer** | Lyophilized from 1X PBS with 2.5% BSA and 0.025% sodium azide |
| **UniProt** | P02818 |
| **Localization** | Cytoplasmic |
| **Applications** | Immunohistochemistry (FFPE): 0.5-1ug/ml |
| **Limitations** | This Osteocalcin Antibody / Bone Gamma-Carboxyglutamic Acid Protein Antibody is available for research use only. |



Osteocalcin Antibody Human Osteosarcoma IHC. IHC staining of FFPE human osteosarcoma tissue was performed with Osteocalcin Antibody. Heat-induced epitope retrieval was performed by boiling tissue sections in pH 6.0, 10 mM citrate buffer for 20 minutes, followed by cooling prior to staining. Strong positive Osteocalcin staining is observed in tumor-associated cells within the osteosarcoma tissue. This Osteocalcin Antibody demonstrates detection of bone gamma-carboxyglutamic acid protein in human osteosarcoma.

## Description

Osteocalcin Antibody / Bone Gamma-Carboxyglutamic Acid Protein Antibody detects osteocalcin, a small, non-collagenous protein of the bone extracellular matrix encoded by the BGLAP gene. Osteocalcin is produced predominantly by mature osteoblasts and is widely studied as a marker of osteoblast differentiation and bone formation. Its strong

association with bone-producing cells and mineralized tissue makes osteocalcin an important target in skeletal biology, bone development and research examining the regulation of bone remodeling.

Osteocalcin is synthesized by osteoblasts as a precursor protein and undergoes post-translational processing before secretion. The mature protein contains gamma-carboxyglutamic acid residues generated through vitamin K-dependent carboxylation. These modified residues contribute to the ability of osteocalcin to bind calcium and hydroxyapatite within mineralized bone matrix. The alternative name Bone Gamma-Carboxyglutamic Acid Protein reflects this characteristic structural feature of the protein.

Expression of osteocalcin increases during later stages of osteoblast differentiation and is commonly used to evaluate osteogenic maturation. As osteoblasts progress from proliferating precursor cells toward mature matrix-producing cells, expression of bone-associated proteins changes in a coordinated manner. Osteocalcin is therefore frequently studied alongside other markers of osteogenesis and mineralization to characterize osteoblast differentiation, bone formation and skeletal development. An Osteocalcin Antibody can be used to investigate the expression and localization of the protein in bone tissue and experimental models of osteogenesis.

Bone is continuously remodeled through the coordinated activities of bone-forming osteoblasts and bone-resorbing osteoclasts. Osteocalcin deposited within the extracellular matrix reflects osteoblast activity and is closely associated with mineralized bone. Circulating osteocalcin has consequently been investigated as a biochemical marker of bone formation and turnover. Changes in osteocalcin expression or abundance are studied in research involving osteoporosis, fracture repair, aging, metabolic bone disease and therapies that influence skeletal remodeling.

In addition to its established role as a bone-associated protein, osteocalcin has been investigated for potential functions beyond the skeleton. Studies have explored relationships between osteocalcin and glucose metabolism, insulin activity, energy balance and other physiological processes. These proposed endocrine functions remain an active area of research, particularly regarding how different molecular forms of osteocalcin may contribute to effects observed outside bone. Its primary and best-established biological association, however, remains osteoblast activity, bone formation and the mineralized extracellular matrix.

NSJ Bioreagents offers Osteocalcin Antibody reagents for investigating osteocalcin expression and localization in skeletal tissues and experimental models. A Bone Gamma-Carboxyglutamic Acid Protein Antibody can support research into osteoblast differentiation, bone formation, mineralization, skeletal development and mechanisms regulating bone remodeling.

Researchers studying osteocalcin in osteoblast differentiation and bone formation can explore our Signal Transduction Antibodies page for additional targets involved in cellular signaling and skeletal biology.

## Application Notes

Optimal dilution of the Osteocalcin Antibody / Bone Gamma-Carboxyglutamic Acid Protein Antibody should be determined by the researcher.

## Immunogen

Amino acids Y52-V100 of the human protein were used as the immunogen for the Osteocalcin antibody.

## Storage

After reconstitution, the Osteocalcin antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

## Alternate Names

Osteocalcin antibody, Bone Gamma-Carboxyglutamic Acid Protein antibody, BGLAP antibody, Bone Gla Protein antibody, BGP antibody

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