

**DESCRIPTION**

<b>Species Reactivity</b>	Human/Rat
<b>Specificity</b>	Detects human Osteocalcin in direct ELISAs.
<b>Source</b>	Monoclonal Mouse IgG <sub>1</sub> Clone # 190125
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	Human Osteocalcin synthetic peptide YLYQWLGAPVPYPDPLEPREVCELNPDCDELADHIGFQEAYRRFYGPV Accession # P02818
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

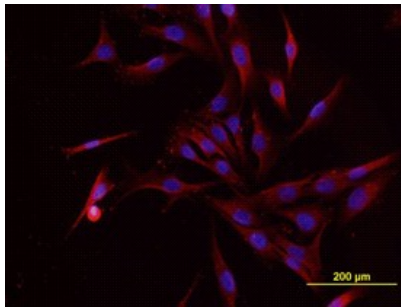
**APPLICATIONS**

Please Note: Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.

	<b>Recommended Concentration</b>	<b>Sample</b>
<b>Immunocytochemistry</b>	8-25 µg/mL	See Below
<b>Immunohistochemistry</b>	8-25 µg/mL	See Below
<b>Intracellular Staining by Flow Cytometry</b>	2.5 µg/10 <sup>6</sup> cells	See Below
<b>CyTOF-ready</b>	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

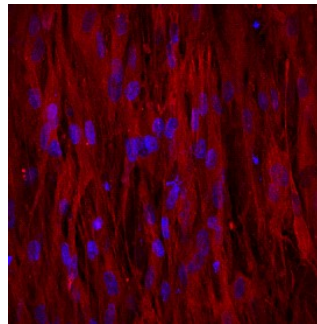
**DATA**

**Immunocytochemistry**



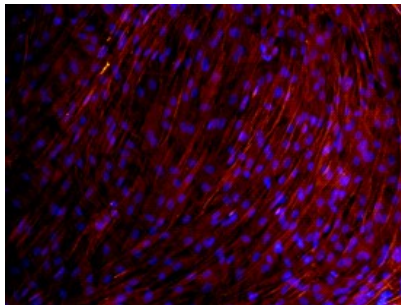
**Osteocalcin in MG-63 Human Cell Line.** Osteocalcin was detected in immersion fixed MG-63 human osteosarcoma cell line using Mouse Anti-Human/Rat Osteocalcin Monoclonal Antibody (Catalog # MAB1419) at 10 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # NL007) and counterstained with DAPI (blue). View our protocol for [Fluorescent ICC Staining of Cells on Coverslips](#).

**Immunocytochemistry**



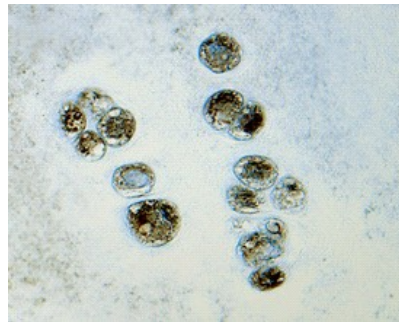
**Osteocalcin in Human Osteocytes.** Osteocalcin was detected in human mesenchymal stem cells differentiated into osteocytes using Mouse Anti-Human/Rat Osteocalcin Monoclonal Antibody (Catalog # MAB1419) at 10 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # NL007) and counterstained with DAPI (blue). View our protocol for [Fluorescent ICC Staining of Cells on Coverslips](#).

**Immunocytochemistry**



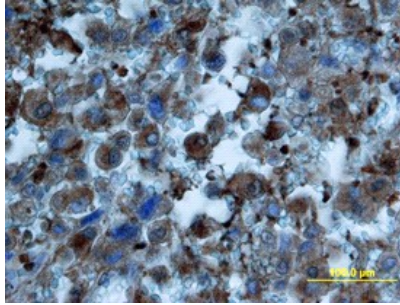
**Osteocalcin in Rat Osteocytes.** Osteocalcin was detected in immersion fixed rat osteocytes differentiated from mesenchymal stem cells using Mouse Anti-Human/Rat Osteocalcin Monoclonal Antibody (Catalog # MAB1419) at 10 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # NL007) and counterstained with DAPI (blue). View our protocol for [Fluorescent ICC Staining of Cells on Coverslips](#).

**Immunohistochemistry**



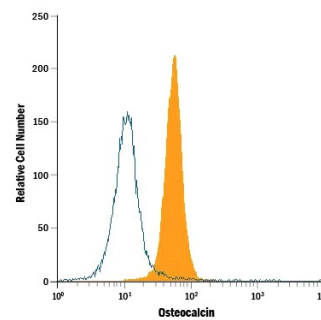
**Osteocalcin in Human Cartilage.** Osteocalcin was detected in immersion fixed paraffin-embedded sections of human cartilage using Mouse Anti-Human/Rat Osteocalcin Monoclonal Antibody (Catalog # MAB1419) at 8 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Mouse HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS002) and counterstained with hematoxylin (blue). Specific labeling was localized to the cytoplasm of chondrocytes. View our protocol for [Chromogenic IHC Staining of Paraffin-embedded Tissue Sections](#).

## Immunohistochemistry



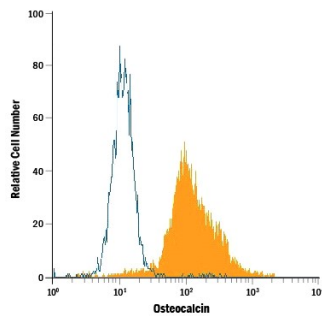
**Osteocalcin in Human Osteosarcoma.** Osteocalcin was detected in immersion fixed paraffin-embedded sections of human osteosarcoma using Mouse Anti-Human/Rat Osteocalcin Monoclonal Antibody (Catalog # MAB1419) at 25 μg/mL overnight at 4 °C. Tissue was stained using the Anti-Mouse HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS002) and counterstained with hematoxylin (blue). View our protocol for [Chromogenic IHC Staining of Paraffin-embedded Tissue Sections](#).

## Intracellular Staining by Flow Cytometry



**Detection of Osteocalcin in Saos-2 Human Cell Line by Flow Cytometry.** Saos-2 human osteosarcoma cell line was stained with Mouse Anti-Human/Rat Osteocalcin Monoclonal Antibody (Catalog # MAB1419, filled histogram) or isotype control antibody (Catalog # MAB002, open histogram), followed by Allophycocyanin-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # F0101B). To facilitate intracellular staining, cells were fixed with paraformaldehyde and permeabilized with saponin.

## Intracellular Staining by Flow Cytometry



**Detection of Osteocalcin in Human Osteoblasts by Flow Cytometry.** Human osteoblasts were stained with Mouse Anti-Human/Rat Osteocalcin Monoclonal Antibody (Catalog # MAB1419, filled histogram) or isotype control antibody (Catalog # MAB002, open histogram), followed by Allophycocyanin-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # F0101B). To facilitate intracellular staining, cells were fixed with paraformaldehyde and permeabilized with saponin.

## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.5 mg/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
<b>Stability &amp; Storage</b>	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> <li>● 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>● 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

## BACKGROUND

Osteocalcin, also known as Bone  $\gamma$ -Carboxyglutamic Acid Protein, is a secreted protein whose expression is restricted to cells of the osteoblast lineage (1). It has been frequently used as a marker for osteoblast lineage cells.

### References:

1. Lian, J.B. *et al.* (1999) *Vitamin. Horm.* **55**:443.