

## Osteocalcin Monoclonal Antibody(Capture)

**catalog number: AN001510P**

**Note:** Centrifuge before opening to ensure complete recovery of vial contents.

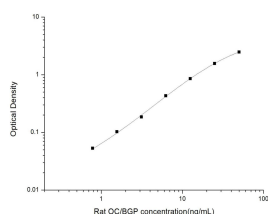
### Description

<b>Reactivity</b>	Rat
<b>Immunogen</b>	Recombinant Rat Osteocalcin protein expressed by E.coli
<b>Host</b>	Mouse
<b>Isotype</b>	Mouse IgG1
<b>Clone</b>	10A5
<b>Purification</b>	Protein A/G Purification
<b>Buffer</b>	Phosphate buffered solution, pH 7.2, containing 0.05% Proclin300.

### Applications Recommended Dilution

<b>ELISA Capture</b>	2-8 µg/mL
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### Data



Sandwich ELISA-Recombinant Rat Osteocalcin protein standard curve. Background subtracted standard curve using Osteocalcin antibody(AN001510P)(Capture), Osteocalcin antibody(AN001500P)(Detector) in sandwich ELISA. The reference range value for Recombinant Rat Osteocalcin protein is 0.78-50 ng/mL.

### Preparation & Storage

<b>Storage</b>	Store at 4°C valid for 12 months or -20°C valid for long term storage, avoid freeze / thaw cycles.
<b>Shipping</b>	The product is shipped with ice pack, upon receipt, store it immediately at the temperature recommended.

### Background

### For Research Use Only

The carboxylated form is one of the main organic components of the bone matrix, which constitutes 1-2% of the total bone protein: it acts as a negative regulator of bone formation and is required to limit bone formation without impairing bone resorption or mineralization. The carboxylated form binds strongly to apatite and calcium.

The uncarboxylated form acts as a hormone secreted by osteoblasts, which regulates different cellular processes, such as energy metabolism, male fertility and brain development. Regulates energy metabolism by acting as a hormone favoring pancreatic beta-cell proliferation, insulin secretion and sensitivity and energy expenditure. Uncarboxylated osteocalcin hormone also promotes testosterone production in the testes: acts as a ligand for G protein-coupled receptor GPRC6A at the surface of Leydig cells, initiating a signaling response that promotes the expression of enzymes required for testosterone synthesis in a CREB-dependent manner. Also acts as a regulator of brain development: osteocalcin hormone crosses the blood-brain barrier and acts as a ligand for GPR158 on neurons, initiating a signaling response that prevents neuronal apoptosis in the hippocampus, favors the synthesis of all monoamine neurotransmitters and inhibits that of gamma-aminobutyric acid (GABA). Osteocalcin also crosses the placenta during pregnancy and maternal osteocalcin is required for fetal brain development.