

**DESCRIPTION**

**Source** *E. coli*-derived mouse Osteocrin protein  
Val28-Gly130, with a C-terminal 6-His tag  
Accession # P61364

**N-terminal Sequence Analysis** Val28

**Predicted Molecular Mass** 12 kDa

**SPECIFICATIONS**

**SDS-PAGE** 14-18 kDa, reducing conditions

**Activity** Measured by its binding ability in a functional ELISA.  
When Recombinant Mouse NPRC/NPR3 Fc Chimera (Catalog # 10187-NR) is immobilized at 2 µg/mL (100 µL/well), the concentration of Recombinant Mouse Osteocrin that produces 50% of the optimal binding response is 0.6-3.6 ng/mL.

**Endotoxin Level** <0.10 EU per 1 µg of the protein by the LAL method.

**Purity** >95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.

**Formulation** Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

**Reconstitution** Reconstitute at 250 µg/mL in PBS.

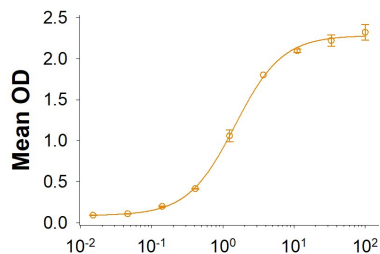
**Shipping** The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

**Stability & Storage** Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

**DATA**

**Binding Activity**



When Recombinant Mouse NPRC/NPR-3 Fc Chimera (Catalog # 10187-NR) is immobilized at 2 µg/mL, Recombinant Mouse Osteocrin (Catalog # 9700-ON) binds with an ED<sub>50</sub> of 0.6-3.6 ng/mL.

**BACKGROUND**

Osteocrin, also known as Musclin, is a secreted protein that is primarily expressed in bone and muscle. It is synthesized as a proprotein (11 kDa) that undergoes proteolytic processing to generate a mature 50 amino acid C-terminal active peptide (1). It was found to modulate osteoblast differentiation and to regulate glucose metabolism in muscles (2). Mouse Osteocrin proprotein shares 77% and 78% amino acid sequence identity with the rat and human protein, respectively. Secretion of Osteocrin has been shown to be increased with exercise and is associated with metabolically beneficial formation of brown fat (3). Osteocrin has also been attributed to increases in exercise endurance through promotion of mitochondrial biosynthesis (4). Based on similarities with NPs (natriuretic peptides), Osteocrin was found to interact with NP clearance receptor NPR-C. This interaction is thought to modulate the availability of NPs, importantly increasing CNP which has been shown to stimulate endochondral ossification and elongate bones (5). In primates, Osteocrin may have evolved to regulate neuronal structure and function (6).

**References:**

1. Nishizawa, H. *et al.* (2004) Journal of Biological Chemistry, **279**:19391.
2. Thomas, G. *et al.* (2003) Journal of Biological Chemistry, **278**:50563.
3. Jeramic N. *et al.* (2017) J Cell Physiol **232**:61.
4. Subbathino, E. *et al.* (2015) Proc. Acad. Natl. Sci. U. S. A. **112**:16042.
5. Kanai, Y. *et al.* (2017) J of Clin Invest **127**: 4136
6. Ataman, B. *et al.* (2016) Nature **539**:242.