

Osteoprotegerin/Fc Chimera

Human, Recombinant (rHuOPG-Fc)

Expressed in *Pichia. Pastoris*

Cat. No. CRP0892

Lot. No. (See product label)

PRODUCT INFORMATION

Description: Osteoprotegerin (OPG) is a member of the TNFR superfamily that can act as a decoy receptor for RANKL. Binding of soluble OPG to sRANKL inhibits osteoclastogenesis by interrupting the signaling between stromal cells and osteoclastic progenitor cells, thereby leading to excess accumulation of bone and cartilage. OPG is expressed in a wide variety of tissues including adult heart, lung, kidney, liver, spleen, prostate, lymph node and bone marrow. OPG is secreted both as a monomeric and a dimeric protein. Its primary structure consists of seven distinct domains, four of which corresponds to the extracellular cysteine-rich domains of TNFR proteins and constitutes the soluble OPG.

Amino-Acid Sequence: 412 aa (including 180 residues from mature OPG (a.a 22-201) and 232 residues from the Fc protein of human IgG1), glycosylated.

M. W. : 46,500 Da

Recombinant: Expressed in *Pichia. Pastoris*.

Purity: >90% by SDS-PAGE and HPLC analyses.

Formulation: Lyophilized from a 0.2µm filtered concentrated (0.5mg/ml) solution in PBS, pH 7.4.

Specific Activity: Fully biologically active when compared to the standard. Determined by its ability to neutralize the stimulation of U937 cells treated with 10 ng/ml of soluble RANKL.

Endotoxin: Less than 1EU/µg of rHuOPG-Fc as determined by LAL method.

Reconstitution: We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute in sterile distilled water or aqueous buffer containing 0.1% BSA to a concentration of 0.1-1.0 mg/mL. Stock solutions should be apportioned into working aliquots and stored at ≤20°C. Further dilutions should be made in appropriate buffered solutions.

Storage: This lyophilized preparation is stable at 2-8°C, but should be kept at -20°C for long term storage, preferably desiccated. Upon reconstitution, the preparation is stable for up to one week at 2-8°C. For maximal stability, apportion the reconstituted preparation into working aliquots and store at -20°C to -70°C. Avoid repeated freeze/thaw cycles.

FOR RESEARCH USE ONLY

GENE INFORMATION

Gene Name: [TNFRSF11B](#)

Synonyms: OPG; TR1; OCIF; MGC29565; Osteoprotegerin; osteoclastogenesis inhibitory factor; Tumor necrosis factor receptor superfamily member 11B; Tumor necrosis factor receptor superfamily member 11B Precursor

mRNA Refseq: [NM_002546](#)

Protein Refseq: [NP_002537](#)

MIM: [602643](#)

GeneID: [4982](#)

UniProt ID: [O00300](#)

Chromosome Location: 8q24

Pathway: Cytokine-cytokine receptor interaction

Function: cytokine activity; protein binding; receptor activity

Summary: The protein encoded by this gene is a member of the TNF-receptor superfamily. This protein is an osteoblast-secreted decoy receptor that functions as a negative regulator of bone resorption. This protein specifically binds to its ligand, osteoprotegerin ligand, both of which are key extracellular regulators of osteoclast development. Studies of the mouse counterpart also suggest that this protein and its ligand play a role in lymph-node organogenesis and vascular calcification. Alternatively spliced transcript variants of this gene have been reported, but their full length nature has not been determined.

REFERENCES

- Hofbauer LC, Neubauer A, Heufelder AE (2001). "Receptor activator of nuclear factor-kappaB ligand and osteoprotegerin: potential implications for the pathogenesis and treatment of malignant bone diseases". *Cancer* 92 (3): 460-70.
- Buckley KA, Fraser WD (2003). "Receptor activator for nuclear factor kappaB ligand and osteoprotegerin: regulators of bone physiology and immune responses/potential therapeutic agents and biochemical markers". *Ann. Clin. Biochem.* 39 (Pt 6): 551-6.
- Whyte MP, Mumm S (2005). "Heritable disorders of the RANKL/OPG/RANK signaling pathway". *Journal of musculoskeletal & neuronal interactions* 4 (3): 254-67.

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