

TNFRSF11B/OPG Protein, Human (HEK293, His, solution)

Cat. No.:	HY-P73332
Synonyms:	OPG; Tumor necrosis factor receptor superfamily member 11B; TNFRSF11B; OCIF
Species:	Human
Source:	HEK293
Accession:	O00300 (E22-L401)
Gene ID:	4982
Molecular Weight:	Approximately 55 kDa

PROPERTIES

Biological Activity	Immobilized Osteoprotegerin Protein, Human, Recombinant (His Tag) at 2 µg/mL (100 µL/well) can bind RANKL Protein, Human, Recombinant (ECD, hFc Tag), the EC ₅₀ is 13-64 ng/mL.
Appearance	Solution.
Formulation	Supplied as a 0.22 µm filtered solution of PBS, pH 7.4.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	N/A.
Storage & Stability	Stored at -80°C for 1 year. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.
Shipping	Shipping with dry ice.

DESCRIPTION

Background

Osteoprotegerin (OPG), a glycoprotein, belongs to TNF receptor superfamily. OPG is expressed in many tissues besides osteoblasts, including heart, kidney, liver, spleen, and bone marrow. Human osteoprotegerin shares <85% aa sequence identity with mouse and rat. Mouse OX40 shares 94.5% aa sequence identity with rat^[1]. Osteoprotegerin can bind to RANKL and inhibit the binding between TNFSF11 and RANKL, thereby neutralizing the RANKL function in osteoclastogenesis. Osteoprotegerin also protects large blood vessels from medial calcification. Increased osteoprotegerin levels have been consistently associated with the incidence and prevalence of coronary artery disease^{[1][3]}. Osteoprotegerin is also involved in multiple processes of cancers, such as tumor survival, epithelial to mesenchymal transition (EMT), neo-angiogenesis, invasion, and metastasis^[2]. Osteoprotegerin plays a critical role in bone remodeling, and has osteoprotective effect^[1].

REFERENCES

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- [1]. Boyce BF, et al. Biology of RANK, RANKL, and osteoprotegerin. *Arthritis Res Ther.* 2007;9 Suppl 1(Suppl 1):S1.
- [2]. Wang Y, et al. The roles of osteoprotegerin in cancer, far beyond a bone player. *Cell Death Discov.* 2022 May 6;8(1):252.
- [3]. Venuraju SM, et al. Osteoprotegerin as a predictor of coronary artery disease and cardiovascular mortality and morbidity. *J Am Coll Cardiol.* 2010 May 11;55(19):2049-61.
- [4]. Capparelli C, et al. Sustained antiresorptive effects after a single treatment with human recombinant osteoprotegerin (OPG): a pharmacodynamic and pharmacokinetic analysis in rats. *J Bone Miner Res.* 2003 May;18(5):852-8.
- [5]. Candido R, et al. Human full-length osteoprotegerin induces the proliferation of rodent vascular smooth muscle cells both in vitro and in vivo. *J Vasc Res.* 2010;47(3):252-61.
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Caution: Product has not been fully validated for medical applications. For research use only.

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