

Recombinant Human Osteoprotegerin

Information

Gene ID	4982
Accession #	O00300
Alternate Names	TNFRSF11B, Osteoclastogenesis Inhibitory Factor, Tumor Necrosis Factor Receptor Superfamily Member 11B
Source	Escherichia coli.
M.Wt	Approximately 19.7 kDa, a single non-glycosylated polypeptide chain containing 173 amino acids.
AA Sequence	ETFPKYLHY DEETSHQLLC DKCPPGTYLK QHCTAKWKTV CAPCPDHYYT DSWHTSDECL YCSPVCKELQ YVKQECNRTH NRVCECKEGR YLEIEFCLKH RSCPPGFGVV QAGTPERNV CKRCPDGFFS NETSSKAPCR KHTNCSVFGLLTQKGNATH DNICSGNSES TQK
Appearance	Sterile Filtered White lyophilized (freeze-dried) powder.
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
Formulation	Lyophilized from a 0.2 μm filtered concentrated solution in 20 mM PB, 150 mM NaCl, pH 6.0.
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.
Biological Activity	Fully biologically active when compared to standard. The ED as determined by neutralizing the stimulation of U937 cells is less than 10 ng/ml, corresponding to a specific activity of > 1.0 × 10 IU/mg in the presence of 10 ng/mL soluble rHuRANKL (sRANKL).
Shipping Condition	Gel pack.
Handling	Centrifuge the vial prior to opening.
Usage	For Research Use Only! Not to be used in humans.

Components and Storage

Components	10μg	100μg	500μg
Recombinant Human Osteoprotegerin	10μg	100μg	500μg

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

Quality Control

Purity	> 95 % by SDS-PAGE and HPLC analyses.
Endotoxin	Less than 1 EU/μg of rHuOPG as determined by LAL method.

Description

Osteoprotegerin (OPG), also named osteoclastogenesis inhibitory factor (OCIF), and tumor necrosis factor receptor superfamily member 11B (TNFRSF11B), is a TNFRSF11B-encoded protein in humans. OPG is a 401 a.a. basic glycoprotein which comprises 7 structural domains. It is either a 60 kDa monomer or a 120 kDa dimer linked by disulfide bridges. OPG acts as a decoy receptor for the receptor activator of nuclear factor kappa B ligand (RANKL) and inhibits the activation of osteoclasts and promotes osteoclast apoptosis in vitro and may also play a role in preventing arterial calcification. OPG has been applied to decrease bone resorption in women with postmenopausal osteoporosis and in patients with lytic bone metastases. Mature human OPG shares 86 %, 87 %, 92 %, 92 % and 88 % amino acid sequence identity with mouse, rat, equine, canine and bovine OPG, respectively.

Reference

1. Simonet WS, Lacey DL, Dunstan CR, et al. 1997. Cell. 89:309-19
2. Schoppet M, Preissner KT, Hofbauer LC. 2002. Arterioscler Thromb Vasc Biol. 22:549-53
3. Tsuda E, Goto M, Mochizuki S, et al. 1997. Biochem Biophys Res Commun. 234:137-42
4. Luan X, Lu Q, Jiang Y, et al. 2012. J Immunol. 189:245-52.

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