



Recombinant Protein Technical Manual  
Recombinant Human Osteoprotegerin/TNFRSF11B  
Protein (His Tag)(Active)  
RPES0670

### Product Data:

**Product SKU:** RPES0670

**Size:** 10µg

**Species:** Human

**Expression host:** Human Cells

**Uniprot:** O00300

### Protein Information:

**Molecular Mass:** 44.65 kDa

**AP Molecular Mass:** 57 kDa

**Tag:** C-His

**Bio-activity:** Measured by its ability to inhibit TRAIL-mediated cytotoxicity using L-929 mouse fibroblast cells treated with TRAIL. The ED50 for this effect is 10.6 ng/ml.

**Purity:** > 95% as determined by reducing SDS-PAGE.

**Endotoxin:** < 1.0 EU per µg as determined by the LAL method.

**Storage:** Lyophilized protein should be stored at < -20°C, though stable at room temperature for 3 weeks. Reconstituted protein solution can be stored at 4-7°C for 2-7 days. Aliquots of reconstituted samples are stable at < -20°C for 3 months.

**Shipping:** This product is provided as lyophilized powder which is shipped with ice packs.

**Formulation:** Lyophilized from a 0.2 µm filtered solution of 20mM PB, 150mM NaCl, pH 7.4.

**Reconstitution:** Please refer to the printed manual for detailed information.

**Application:**

**Synonyms:** Tumor necrosis factor receptor superfamily member 11B; Osteoclastogenesis inhibitory factor; Osteoprotegerin; TNFRSF11B; OCIF; OPG;PDB5;TR1

## Immunogen Information:

**Sequence:** Glu22-Leu401

## Background:

TNFRSF11B is a secreted protein, containing 2 death domains and 4 TNFR-Cys repeats. TNFRSF11B is a decoy receptor for the receptor activator of nuclear factor kappa B ligand (RANKL). By binding RANKL, TNFRSF11B inhibits nuclear kappa B (NF- $\kappa$ B) which is a central and rapid acting transcription factor for immune-related genes, and a key regulator of inflammation, innate immunity, and cell survival and differentiation. TNFRSF11B levels are influenced by voltage-dependent calcium channels Cav1.2. TNFRSF11B can reduce the production of osteoclasts by inhibiting the differentiation of osteoclast precursors (osteoclasts are related to monocytes/macrophages and are derived from granulocyte/macrophage-forming colony units (CFU-GM)) into osteoclasts and also regulates the resorption of osteoclasts in vitro and in vivo. TNFRSF11B binding to RANKL on osteoblast/stromal cells, blocks the RANKL-RANK ligand interaction between osteoblast/stromal cells and osteoclast precursors. This has the effect of inhibiting the differentiation of the osteoclast precursor into a mature osteoclast.