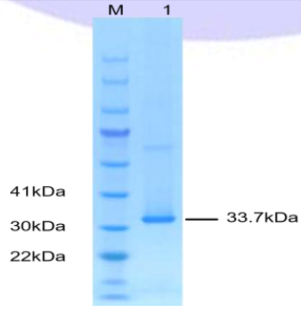
Human Receptor activator of nuclear factor kappa B ligand (RANKL) Protein, Recombinant

I. For sale

Product name	Catalog #	Size
Human Receptor activator of nuclear factor kappa B ligand (RANKL) Protein, Recombinant	P01R0005	10ug
		50ug
		500ug
		1mg

II. Product Description

Other Names	TNFSF11; ODF; OPGL; RANKL; TRANCE
Protein & NCBI Number	O14788, AF019047.1
Host	E.coli
Express Region	Ile140-Asp317
Protein Sequence	IRAEKAMVDGSWLDLAKRSKLEAQPFAHLTINATDIPSGSHKVSLSSWYHDRGWAKISN MTFSNGKLIVNQDGFYYLYANICFRHHETSGDLATEYLQLMVYVTKTSIKIPSSHTLMKGG STKYWSGNSEFHFYSINVGGFFKLRSGEEISIEVSNPSLLDPDQDATYFGAFKVRDID
Molecular Weight	The protein molecule consists of 299 amino acids (including the fusion tag), with a predicted molecular weight of 33.8kDa and an actual molecular weight of 30-33kDa.
Fusion Tag	6xHis-SUMO (N-terminus)
Purity	⩾90% SDS-PAGE
Physical Property	Liquid
Components	0.01M PBS+20% glycerol, sterile solution
Storage & Stability	After aliquoting, the stability of the samples can be maintained for up to 6 months at -20°C to -80°C, avoiding repeated freeze-thaw cycles.
Applications	Antibody preparation, immunoassay (ELISA, WB), subcellular localization and interaction protein identification, etc.
Lead Time	5 to 10 business days; 2 to 3 days for stock products
Figure. SDS-PAGE	 Bis-Tris (MOPS) SDS-PAGE

III. **Storage and Transportation**

Transport at 2-8℃, product is stable for up to twelve months from date of receipt under sterile conditions at -20℃ to -80℃.

IV. **Notes**

This product is for research use only. Please wear laboratory attire and disposable gloves when handling.

V. **Background**

Receptor activator of nuclear factor kappa B ligand (RANKL), also known as tumor necrosis factor ligand superfamily member 11, osteoclast differentiation factor (ODF), CD254, osteoprotegerin ligand (OPGL), and tumor necrosis factor-related activation-induced cytokine (TRANCE).

It acts as a differentiation and activation factor for osteoclasts, enhancing the ability to stimulate proliferation of naïve T cells as a cytokine by binding to TNFRSF11B/OPG and TNFRSF11a/RANK. It may also serve as a critical regulator of interactions between T cells and dendritic cells, potentially modulating T cell-dependent immune responses and enhancing bone resorption in malignancy-associated hypercalcemia. RANKL induces osteoclastogenesis by activating multiple signaling pathways in osteoclast precursor cells, notably inducing sustained oscillations in intracellular Ca2+ concentrations that activate NFATC1. NFATC1 translocates to the nucleus and induces transcription of osteoclast-specific genes, promoting osteoclast differentiation.

During osteoclast differentiation, activation of CREB1 and generation of mitochondrial ROS dependent on TMEM64 and ATP2A2 are essential for osteoclastogenesis. Expression is highest in peripheral lymph nodes, with weaker expression in the spleen, peripheral blood leukocytes, bone marrow, stomach, heart, thyroid, placenta, and skeletal muscle.

VI**. References**

Xudong Luan, Qingyu Lu, Yinan Jiang et al. Crystal structure of human RANKL complexed with its decoy receptor osteoprotegerin. J Immunol. 2012;189(1):245-52.