

PRODUCT INFORMATION



RANKL/ODF Extracellular Domain (human, recombinant)

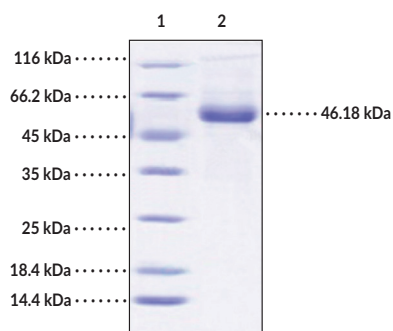
Item No. 40209

Overview and Properties

Synonyms:	OPGL, Osteoclast Differentiation Factor, Receptor Activator of NF- κ B, Receptor Activator of Nuclear Factor- κ B Ligand, TNF Ligand Superfamily Member 11, TNFSF11, TRANCE, Tumor Necrosis Factor Ligand Superfamily Member 11
Source:	Active recombinant N-terminal rabbit IgG Fc-tagged human RANKL/ODF extracellular domain expressed in HEK293 cells
Amino Acids:	64-245
Uniprot No.:	O14788
Molecular Weight:	46.18 kDa
Storage:	-80°C (as supplied)
Stability:	≥ 1 year
Purity:	$\geq 95\%$ estimated by SDS-PAGE
Supplied in:	Lyophilized from sterile PBS, pH 7.4
Endotoxin Testing:	< 1.0 EU/ μ g, determined by the LAL endotoxin assay
Activity:	<i>batch specific</i> U/ml
Specific Activity:	<i>batch specific</i> U/mg

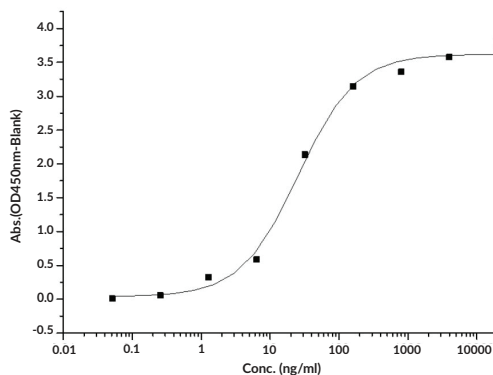
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



Lane 1: MW Markers
Lane 2: RANKL/ODF Extracellular Domain

SDS-PAGE Analysis of RANKL/ODF Extracellular Domain. This protein has a calculated molecular weight of 134.21 kDa. It has an apparent molecular mass of approximately 46.18 kDa, by SDS-PAGE, under reducing conditions due to glycosylation.



Immobilized Recombinant Human Osteoprotegerin/TNFRSF11B Protein (His Tag) at 2 μ g/ml (100 μ l/well) can bind RANKL/ODF Extracellular Domain (human, recombinant), the EC_{50} value of Soluble RANKL/ODF Extracellular Domain (human, recombinant) is 15-45 ng/ml.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

Receptor activator of NF- κ B ligand (RANKL), also known as osteoclast differentiation factor (ODF), is a type II transmembrane protein and member of the TNF cytokine family that has roles in bone remodeling, osteoclast differentiation, and immune cell regulation.¹⁻³ It is composed of a cytoplasmic domain, a transmembrane domain, and an extracellular binding domain.¹⁻³ RANKL is widely expressed but is highly expressed in precursor osteoclasts and maturing lymphocytes.⁴⁻⁶ It binds as a soluble homotrimer to its receptor, RANK, to induce signaling via the NF- κ B, JNK, ERK, p38, nuclear factor of activated T cells (NFAT), and Akt pathways.^{1,7,8} RANKL also binds to osteoprotegerin (OPG), which prevents RANKL from activating RANK signaling.⁹ *TNFSF11*, the gene encoding RANKL, is differentially transcribed to produce three isoforms: RANKL 1 and RANKL 2, which contain all three domains, and RANKL 3, which contains only the extracellular domain.³ The extracellular domain can also be cleaved from full-length RANKL by the proteases disintegrin and metalloproteinase domain-containing protein 10 (ADAM10) or matrix metalloproteinases-7 (MMP-7) to produce soluble RANKL extracellular domain.⁶ RANKL 1 promotes osteoclastogenesis while RANKL 3 decreases the ratio of osteoclasts to preosteoclasts. Recombinant RANKL extracellular domain induces dendritic cell aggregation and clustering and increases dendritic cell activation.² Serum levels of the RANKL extracellular domain are elevated in patients with multiple myeloma and are negatively correlated with prognosis.⁵ Cayman's RANKL/ODF Extracellular Domain (human, recombinant) protein can be used for binding and cellular activity assay applications. This protein is a disulfide-linked homodimer. The reduced monomer, composed of RANKL/ODF Extracellular Domain (amino acids 64-245) fused to rabbit IgG Fc at its N-terminus, consists of 181 amino acids and has a calculated molecular weight of 134.21 kDa. As a result of glycosylation, the monomer migrates at approximately 45-55 kDa by SDS-PAGE under reducing conditions.

References

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