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Produktinformation

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PRODUCT INFORMATION

RANKL/ODF Extracellular Domain (human, recombinant)

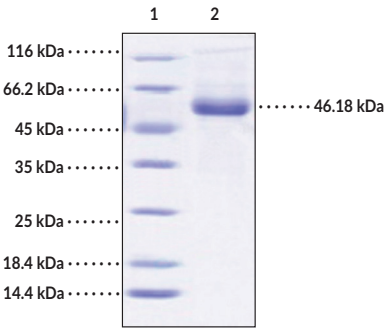
Item No. 40209

Overview and Properties

Synonyms:	OPGL, Osteoclast Differentiation Factor, Receptor Activator of NF-κB, Receptor Activator of Nuclear Factor-κB 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:	≥95% estimated by SDS-PAGE
Supplied in:	Lyophilized from sterile PBS, pH 7.4
Endotoxin Testing:	< 1.0 EU/µg, determined by the LAL endotoxin assay
Activity:	***batch specific*** U/ml
Specific Activity:	***batch specific*** U/mg

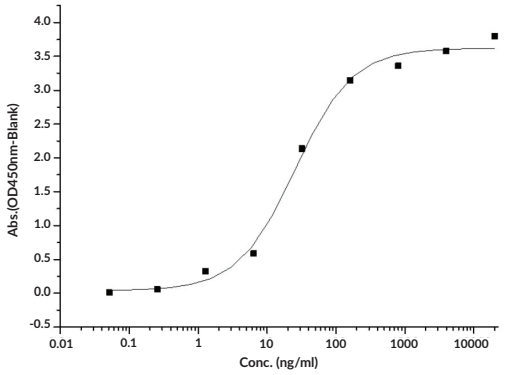
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

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 µg/ml (100 µl/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.

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PRODUCT INFORMATION

Description

Receptor activator of NF-κB 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-κB, JNK, ERK, p38, nuclear factor of activated T cells (NFAT), and Akt pathways.[1,7,8] RANKL also binds to osteoprotegrin (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

1. Liu, C., Zhao, Y., He, W., *et al.* A RANKL mutant used as an inter-species vaccine for efficient immunotherapy of osteoporosis. *Sci. Rep.* **5,** 14150 (2015).
2. Anderson, D.M., Maraskovsky, E., Billingsley, W.L., *et al.* A homologue of the TNF receptor and its ligand enhance T-cell growth and dendritic-cell function. *Nature* **390(6656),** 175-179 (1997).
3. Suzuki, J., Ikeda, T., Kuroyama, H., *et al.* Regulation of osteoclastogenesis by three human RANKL isoforms expressed in NIH3T3 cells. *Biochem. Biophys. Res. Commun.* **314(4),** 1021-1027 (2004).
4. Pan, A., Chen, M., Chowdhury, R., *et al.* α-Linolenic acid and risk of cardiovascular disease: A systematic review and meta-analysis. *Am. J. Clin. Nutr.* **96(6),** 1262-1273 (2012).
5. Terpos, E., Szydlo, R., Apperley, J.F., *et al.* Soluble receptor activator of nuclear factor κB ligand-osteoprotegerin ratio predicts survival in multiple myeloma: Proposal for a novel prognostic index. *Blood* **102(3),** 1064-1069 (2003).
6. Renema, N., Navet, B., Heymann, M.-F., *et al.* RANK-RANKL signalling in cancer. *Biosci. Rep.* **36(4),** e00366 (2016).
7. Amirhosseini, M., Bernhardsson, M., Lång, P., *et al.* Cyclin-dependent kinase 8/19 inhibition suppresses osteoclastogenesis by downregulating RANK and promotes osteoblast mineralization and cancellous bone healing. *J. Cell. Physiol.* **234(9),** 16503-16516 (2019).
8. He, Y.-Q., Zhang, Q., Shen, Y., *et al.* Rubiadin-1-methyl ether from *Morinda officinalis* How. Inhibits osteoclastogenesis through blocking RANKL-induced NF-κB pathway. *Biochem. Biophys. Res. Commun.* **506(4),** 927-931 (2018).
9. Willard, D., Chen, W.-J., Barrett, G., *et al.* Expression, purification, and characterization of the human receptor activator of NF-κB ligand (RANKL) extracellular domain. *Protein Expr. Purif.* **20(1),** 48-57 (2000).

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