Active Recombinant Rat Tnfsf11 protein, His-tagged

Cat. No. Tnfsf11-196R **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant Rat Tnfsf11(Arg72-Asp318) fused with His tag at N-terminal was expressed in CHO.
Species	Rat
Source	CHO
ProteinLength	72-318 a.a.
Description	RANK L (receptor activator of NF-kappa B ligand), also called TRANCE (TNF-related activation-induced cytokines), OPGL (osteoprotegerin ligand), or ODF (osteoclast differentiation factor), is a 39-45 kDa type II transmembrane (TM) protein in the tumor necrosis factor family, designated TNFSF11. RANK L, produced by osteoblasts and bone marrow stromal cells, is required for differentiation of osteoclasts and stimulates bone resorption. It is also produced by activated T cells and augments dendritic cell stimulation; RANK L-/- mice lack lymph nodes and have impaired thymocyte development. The rat RANK Ligand cDNA encodes a type II transmembrane protein of 318 amino acids with a predicted cytoplasmic domain of 47 amino acids, a 21 amino acids transmembrane region, and an extracellular domain of 250 amino acids. The extracellular domain contains two potential N-linked glycosylation sites. Rat and human RANK Ligand and rat and mouse RANK Ligand share 83% and 95% amino acid identity respectively. RANK L can stimulate human osteoclast differentiation (4). Like most TNF family members, RANK L can form trimers. Soluble 31, 25 and 24 kDa forms of RANK L can be created by usage of alternate start sites at aa 74 or 146, or

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	proteolytic cleavage by osteoblast- or stromal cell-derived ADAM10 (after aa 139) or MMP14 (aa 146), or bone metastatic prostate tumor-derived MT1-MMP (aa 146). Both TM and soluble extracellular RANK L act by engaging RANK receptors and are antagonized by the decoy receptor, OPG (osteoprotegrin). In resting cells, the majority of RANK L is stored in secretory lysosomes. In mammary epithelia, RANK L is up-regulated by pregnancy hormones and is essential for the formation of a lactating mammary gland. In the brain, astrocyte RANK L mediates body temperature regulation. Pathologically, RANK L is thought to mediate post-menopausal osteoporosis, vascular calcification, progestin-induced breast cancer, cancer-induced bone disease, and osteopetrosis (in RANK L deficiencies).
Predicted N Terminal	His
Form	Lyophilized from a 0.2 μm filtered solution in NaH2PO4, NaCl and EDTA.
Bio-activity	Measured by its ability to induce osteoclast differentiation of RAW 264.7 mouse monocyte/macrophage cells. The ED50 for this effect is 2.5-15 ng/mL.
Molecular Mass	Predicted Molecular Mass: 29 kDa SDS-PAGE: 33-38 kDa, reducing conditions
Endotoxin	<0.1 EU per 1 μg of the protein by the LAL method.
Purity	>85%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. 12 months from date of receipt, -20 to -70 centigrade as supplied. 1 month, 2 to 8 centigrade under sterile conditions after reconstitution. 3 months, -20 to -70 centigrade under sterile conditions after reconstitution.

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Reconstitution	Reconstitute at 100 µg/mL in PBS.

GENE INFORMATION

Gene Name	Tnfsf11 tumor necrosis factor (ligand) superfamily, member 11 [Rattus norvegicus]
Official Symbol	Tnfsf11
Synonyms	TNFSF11; tumor necrosis factor (ligand) superfamily, member 11; tumor necrosis factor ligand superfamily member 11; ODF; OPGL; TRANCE; osteoprotegerin ligand; osteoclast differentiation factor; TNF-related activation-induced cytokine; receptor activator of nuclear factor kappa B ligand; receptor activator of nuclear factor kappa-B ligand; RANKL;
Gene ID	117516
mRNA Refseq	NM_057149
Protein Refseq	NP_476490
UniProt ID	Q9ESE2

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