RANKL/TNFSF11 Protein, Mouse (HEK293, Fc)

Cat. No.:	HY-P73388
Synonyms:	Tumor necrosis factor ligand superfamily member 11; RANKL; CD254; ODF; OPGL; TNFSF11; TRANCE
Species:	Mouse
Source:	HEK293
Accession:	AAC40113.1 (R72-D316)
Gene ID:	21943
Molecular Weight:	Approximately 58.46 kDa

PROPERTIES

AA Sequence	R A Q M D P N R I S E D S T H C F Y R I L R L H E N A G L Q D S T L E S E D T L P D S C R R M K Q A F Q G A V Q K E L Q H I V G P Q R F S G A P A M M E G S W L D V A Q R G K P E A Q P F A H L T I N A A S I P S G S H K V T L S S W Y H D R G W A K I S N M T L S N G K L R V N Q D G F Y Y L Y A N I C F R H H E T S G S V P T D Y L Q L M V Y V V K T S I K I P S S H N L M K G G S T K N W S G N S E F H F Y S I N V G G F F K L R A G E E I S I Q V S N P S L L D P D Q D A T Y F G A F K V Q D I D
Biological Activity	1.Measured by its ability to induce osteoclast differentiation of RAW 264.7 mouse leukemia cells of monocyte macrophage. The ED_{50} for this effect is 1.137 ng/mL, corresponding to a specific activity is 8.795×10^5 units/mg. 2.Immobilized mouse Fc-TNFSF11 at 10 μg/mL (100 μl/well) can bind biotinylated human TNFRSF11B-His , The EC_{50} of biotinylated human TNFRSF11B-His is 0.07-0.17 μg/mL.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μm filtered solution of PBS, pH 7.4 (Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.) or 20 mM PB, 150 mM NaCl, pH 7.4.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	RANKL (TNFSF11) belongs to TNF family. RANKL is a type II transmembrane protein and is a receptor activator of NF-κB (RANK) ligand. RANKL is an activator of RANK. RANKL binds to RANK and induces the differentiation of monocyte/macrophage-lineage cells into osteoclasts and leads to osteoclast precursor maturation. In bone tissue, RANKL is expressed by osteoblasts, osteocytes and immune cells, especially in osteoblasts and osteocytes[1]. RANKL is also expressed by T cells and increases proliferation and survival of dendritic cells[2]. In mice, RANKL/RANK signaling attenuates inflammation in ischemic brains through a Toll-like receptor signaling pathway[4]. RANKL consists of cytoplasmic domain (1-47), helical domain (48-68), and extracellular domain (69-317). The soluble chain (140-317) is released when cleaved by enzymes such as matrix metalloproteinases (MMP3 or 7) and ADAM[1][3]. RANKL is critical for osteoclasts maturation, bone modeling, and bone remodeling, as well as the development of lymph nodes (LNs)[1].

REFERENCES

[1]. Ono T, et al. RANKL biology: bone metabolism, the immune system, and beyond. Inflamm Regen. 2020 Feb 7;40:2.

[2]. Li B, et al. Roles of the RANKL-RANK Axis in Immunity-Implications for Pathogenesis and Treatment of Bone Metastasis. Front Immunol. 2022 Mar 21;13:824117.

[3]. Tobeiha M, et al. RANKL/RANK/OPG Pathway: A Mechanism Involved in Exercise-Induced Bone Remodeling. Biomed Res Int. 2020 Feb 19;2020:6910312.

[4]. Shimamura M, et al. OPG/RANKL/RANK axis is a critical inflammatory signaling system in ischemic brain in mice. Proc Natl Acad Sci U S A. 2014 Jun 3;111(22):8191-6.

[5]. He X, et al. Resveratrol prevents RANKL-induced osteoclast differentiation of murine osteoclast progenitor RAW 264.7 cells through inhibition of ROS production. Biochem Biophys Res Commun. 2010 Oct 22;401(3):356-62.

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