

RANKL/TNFSF11 Protein, Mouse

Cat. No.:	HY-P7425
Synonyms:	rMuRANK L/TNFSF11; TRANCE; CD254
Species:	Mouse
Source:	E. coli
Accession:	O35235-1 (Q137-D316)
Gene ID:	21943
Molecular Weight:	Approximately 20.1 kDa

PROPERTIES

AA Sequence	<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</p> <p>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</p> <p>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</p> <p>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</p> <p>L L D P D Q D A T Y F G A F K V Q D I D</p>
Biological Activity	<p>1. Measured by its ability to induce osteoclast differentiation of RAW 264.7 mouse monocyte/macrophage cells. The ED₅₀ is <1.808 ng/mL as measured by RAW 264.7 mouse monocyte/macrophage cells, corresponding to a specific activity of >5.531 × 10⁵ units/mg.</p> <p>2. Measured by its binding ability in a functional ELISA. Immobilized mouse TNFSF11 at 10 µg/mL (100µL/well) can bind biotinylated Human TNFRSF11B. The ED₅₀ for this effect is 0.0848 µg/mL.</p>
Appearance	Lyophilized powder
Formulation	Lyophilized after extensive dialysis against 20 mM Tris, 150 mM NaCl, 1 mM EDTA, pH 8.0.
Endotoxin Level	<1.0 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O.
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
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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.
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- [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.
- [6]. Hofbauer LC, et al. Role of receptor activator of nuclear factor-kappaB ligand and osteoprotegerin in bone cell biology. *J Mol Med (Berl)*. 2001 Jun;79(5-6):243-53.

Caution: Product has not been fully validated for medical applications. For research use only.

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