

Screening Libraries

Proteins

Product Data Sheet

RANKL/TNFSF11 Protein, Cynomolgus (HEK293, Fc)

Cat. No.: HY-P75999

Synonyms: Tumor necrosis factor ligand superfamily member 11; RANKL; CD254; ODF; OPGL; TNFSF11;

Cynomolgus Species: **HEK293** Source:

A0A7N9DBU4 (G136-D317) Accession:

Gene ID:

Molecular Weight: Approximately 56 kDa

PROPERTIES

AA Sequence

GSQHIRAEKA MVDGSWLDLA KRSKLEAQPF AHLTINATNI PTGSHKVSLS SWYHDRGWAK ISNMTFSNGK LIVNQDGFYY LYANICFRHH ETSGDLATEY LQLMVYVTKT SIKIPSSHTL MKGGSTKYWS GNSEFHFYSI NVGGFFKLRS GEEISVEVSN

PSLLDPDQDA TYFGAFKVRD I D

Biological Activity

The bioactivity was determined by measuring the ability of RANKL to induce TRAP activity in RAW 264.7 cells. The ED₅₀ for this effect is ≤10 ng/mL, corresponding to a specific activity is ≥1×10⁵ U/mg

Appearance

Lyophilized powder

Formulation

Lyophilized from a 0.2 μm filtered solution of PBS, 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 ddH₂O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).

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-kB (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].

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

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- [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]. Mikami S, et al. Increased RANKL expression is related to tumour migration and metastasis of renal cell carcinomas. J Pathol. 2009 Aug;218(4):530-9.
- [5]. Peng X, et al. Differential expression of the RANKL/RANK/OPG system is associated with bone metastasis in human non-small cell lung cancer. PLoS One. 2013;8(3):e58361.
- [6]. Lloyd SA, et al. Soluble RANKL induces high bone turnover and decreases bone volume, density, and strength in mice. Calcif Tissue Int. 2008 May;82(5):361-72.

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

Tel: 609-228-6898

Fax: 609-228-5909

 $\hbox{E-mail: } tech@MedChemExpress.com$

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA