

Human Recombinant RANKL

Receptor activator of nuclear factor kappa-B ligand

Catalog #78214	10 µg
Catalog #78214.1	100 µg
Catalog #78214.2	500 µg
Catalog #78214.3	1000 µg

Product Description

Receptor activator of nuclear factor kappa-B ligand (RANKL) is a member of the tumor necrosis factor (TNF) superfamily (Anderson et al.). Cytokines in TNF superfamily are involved in a variety of long-term cellular activities, such as differentiation, proliferation, and cell death (MacEwan). RANKL is a type II homotrimeric transmembrane protein expressed in both membrane-bound and secreted form (Ikeda et al.). RANKL binds to the receptor activator of nuclear factor kappa-B (RANK). Upon binding to its receptor, RANKL activates AKT signaling pathway (Moon et al.). Osteoprotegerin (OPG) may also bind RANKL, and this binding competes with RANKL-RANK binding (Lacey et al.). RANKL is involved in osteoclastogenesis (Lacey et al.; Yasuda et al.) and T cell activation (Wong et al.).

Product Information

Alternative Names:	CD254, hRANKL2, ODF, OPGL, OPTB2, Osteoclast differentiation factor, soluble Receptor activator of NF- κ B ligand, sOdf, TNF-related activation-induced cytokine, TNFSF11, TNF superfamily member 11, TNLG6B, Tumor necrosis factor superfamily member 11, TRANCE
Accession Number:	O14788
Amino Acid Sequence:	EKAMVDGSWL DLAKRSKLEA QPFAHLTINA TDIPSGSHKV SLSSWYHDRG WAKISNMTFS NGKLIVNQDG FYYLYANICF RHHETSGDLA TEYLQLMVYV TKTSIKIPSS HTLMKGGSTK YWSGNSEFHF YSINVGGFFK LRSGEISIE VSNPSLLDPD QDATYFGAFK VRDID
Predicted Molecular Mass:	19.7 kDa
Species:	Human
Product Formulation:	Lyophilized from a sterile-filtered solution containing sodium phosphate, pH 7.5.
Source:	E. coli
Purity:	$\geq 95\%$

Specifications

Activity:	The specific activity is $\geq 2 \times 10^4$ units/mg ($EC_{50} \leq 50$ ng/mL) as determined by the ability to induce bioluminescence in engineered RANKL bioassay cells.
Endotoxin Level:	Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is ≤ 1 EU/ μ g protein.

Preparation and Storage

Stability and Storage:	Store at -20 to -80°C. Stable as supplied for 12 months from date of receipt.
Preparation:	Centrifuge vial before opening. Reconstitute the product in sterile water to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. OPTIONAL: After reconstitution, if product will not be used immediately, dilute with concentrated bovine serum albumin (BSA) to a final BSA concentration of 0.1%. The effect of storage of stock solution on product performance should be tested for each application. As a general guide, do not store at 2 - 8°C for more than 1 month or at -20 to -80°C for more than 3 months. Avoid repeated freeze-thaw cycles.

Data

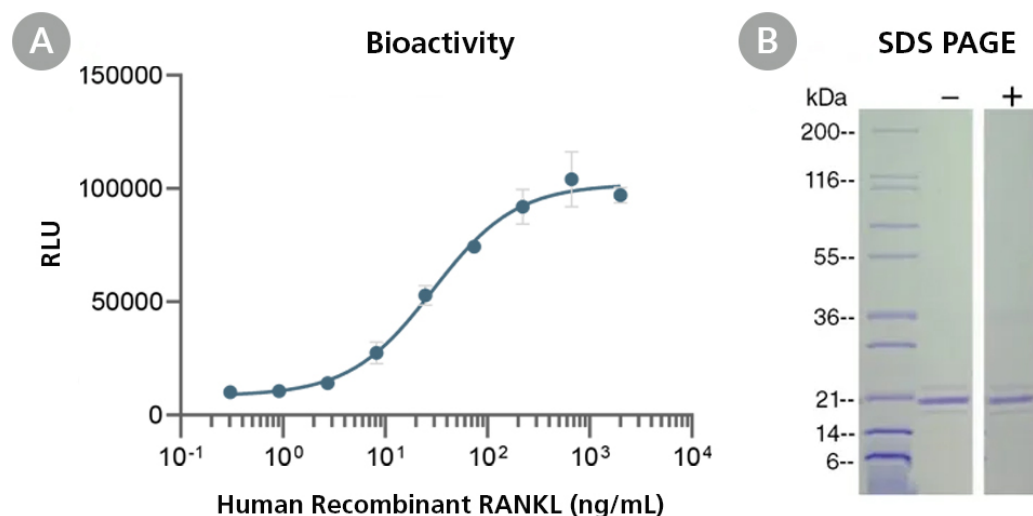


Figure 1. Biological Activity of Human Recombinant RANKL

(A) Biological activity of Human Recombinant RANKL was tested by its ability to induce bioluminescence in engineered RANKL bioassay cells. The EC₅₀ is defined as the effective concentration of the cytokine at which bioluminescence is at 50% of maximum. The EC₅₀ in the above example is ≤ 50 ng/mL.

(B) Human Recombinant RANKL was resolved with SDS-PAGE under reducing (+) conditions and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant RANKL has a predicted molecular mass of 19.7 kDa.

Related Products

For a complete list of cytokines or peptide pools, as well as related products available from STEMCELL Technologies, visit www.stemcell.com/cytokines, or contact us at techsupport@stemcell.com.

References

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- MacEwan DJ. (2002) TNF ligands and receptors—a matter of life and death. *Br J Pharmacol* 135(4): 855–75.
- Moon JB et al. (2012) Akt induces osteoclast differentiation through regulating the GSK3 β /NFATc1 signaling cascade. *J Immunol* 188(1): 163–9.
- Wong BR et al. (1997) TRANCE is a novel ligand of the tumor necrosis factor receptor family that activates c-Jun N-terminal kinase in T cells. *J Biol Chem* 272(40): 25190–4.
- Yasuda H et al. (1998) Osteoclast differentiation factor is a ligand for osteoprotegerin/osteoclastogenesis-inhibitory factor and is identical to TRANCE/RANKL. *Proc Natl Acad Sci USA* 95(7): 3597–602.

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