

## Product datasheet

# Recombinant human RANKL protein (Active) ab157289

3 Images

### Description

<b>Product name</b>	Recombinant human RANKL protein (Active)	
<b>Biological activity</b>	Supports the survival of dendritic cells and osteoclasts.	
<b>Purity</b>	> 90 % SDS-PAGE. ~28kDa (glycosylated) (SDS-PAGE).	
<b>Endotoxin level</b>	< 0.100 Eu/μg	
<b>Expression system</b>	HEK 293 cells	
<b>Accession</b>	<b><u>O14788</u></b>	
<b>Protein length</b>	Protein fragment	
<b>Animal free</b>	No	
<b>Nature</b>	Recombinant	
<b>Species</b>	Human	
<b>Sequence</b>	LDLAKRSKLEAQPFAHLTINATDIPSGSHKVSLSWYHDR GWAKISNMTF SNGKLIVNQDGFYLYANICFRHHETSGDLATEYLQLMVV TKTSIKIPS SHTLMKGGSTKYWSGNSEFHFYSINVGFFKLRSGEEISIE VSNPSLLDP DQDATYFGAFKVRDID	
<b>Predicted molecular weight</b>	18 kDa including tags	
<b>Amino acids</b>	152 to 317	
<b>Tags</b>	DDDDK tag N-Terminus	
<b>Additional sequence information</b>	Fused at the N-terminus to a linker peptide (6 aa) and a DDDDK-tag.	

### Specifications

Our **Abpromise guarantee** covers the use of **ab157289** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

<b>Applications</b>	ELISA
	Functional Studies
	SDS-PAGE
<b>Form</b>	Lyophilized

**Additional notes** Binds to Human and mouse RANK.

---

## Preparation and Storage

**Stability and Storage** Shipped at 4°C. Store at -20°C. Avoid freeze / thaw cycle.  
Constituent: PBS  
This product is an active protein and may elicit a biological response in vivo, handle with caution.

**Reconstitution** Reconstitute with 100µl sterile water to a concentration of 0.1 mg/ml. Further dilutions should be made with medium containing 5% fetal calf serum or a carrier protein. After reconstitution, prepare aliquots and store at -20°.

---

## General Info

**Function** Cytokine that binds to TNFRSF11B/OPG and to TNFRSF11A/RANK. Osteoclast differentiation and activation factor. Augments the ability of dendritic cells to stimulate naive T-cell proliferation. May be an important regulator of interactions between T-cells and dendritic cells and may play a role in the regulation of the T-cell-dependent immune response. May also play an important role in enhanced bone-resorption in humoral hypercalcemia of malignancy.

**Tissue specificity** Highest in the peripheral lymph nodes, weak in spleen, peripheral blood Leukocytes, bone marrow, heart, placenta, skeletal muscle, stomach and thyroid.

**Involvement in disease** Defects in TNFSF11 are the cause of osteopetrosis autosomal recessive type 2 (OPTB2) [MIM:259710]; also known as osteoclast-poor osteopetrosis. Osteopetrosis is a rare genetic disease characterized by abnormally dense bone, due to defective resorption of immature bone. The disorder occurs in two forms: a severe autosomal recessive form occurring in utero, infancy, or childhood, and a benign autosomal dominant form occurring in adolescence or adulthood. Autosomal recessive osteopetrosis is usually associated with normal or elevated amount of non-functional osteoclasts. OPTB2 is characterized by paucity of osteoclasts, suggesting a molecular defect in osteoclast development.

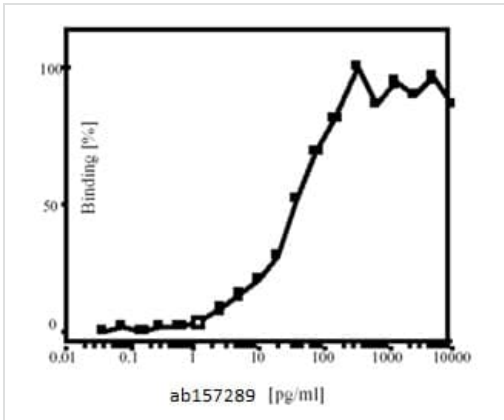
**Sequence similarities** Belongs to the tumor necrosis factor family.

**Post-translational modifications** The soluble form of isoform 1 derives from the membrane form by proteolytic processing (By similarity). The cleavage may be catalyzed by ADAM17.

**Cellular localization** Cytoplasm; Secreted and Cell membrane.

---

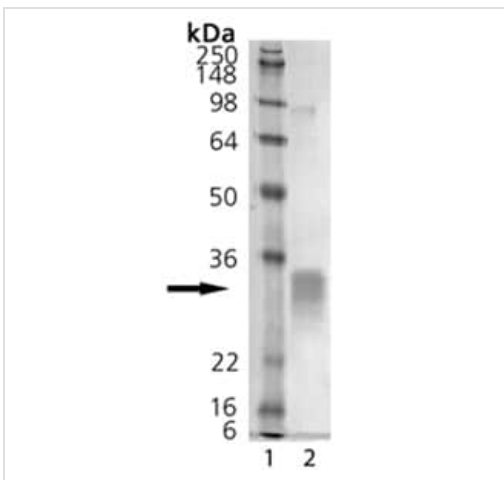
## Images



Functional Studies - Recombinant human RANKL protein (ab157289)

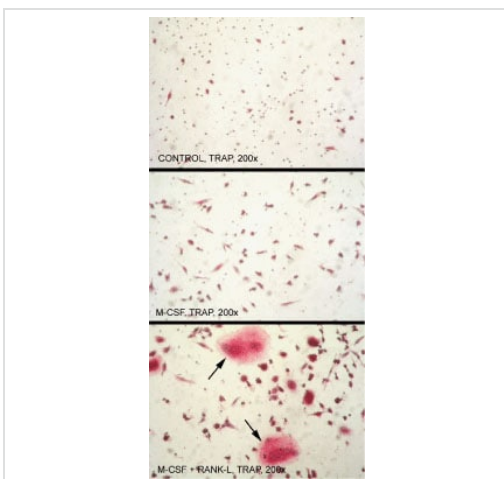
Binding of ab157289 to Osteoprotegerin. ab157289 binds to Osteoprotegerin:Fc.

Method: Ligand binding assay: 96 well ELISA plates were coated O/N with 50 ng OPG-Fc per well. After a blocking step, the indicated concentrations of ab157289 were added for 1 hour. Bound ligand was revealed with an anti-FLAG antibody at 1 µg/ml for 30 minutes, followed by a rabbit anti-mouse IgG-HRP at 1/1000 dilution for 30 minutes. OPD was used as a substrate for the peroxidase. Absorbance was measured at 490 nm in an ELISA reader.



SDS-PAGE - Recombinant human RANKL protein (ab157289)

SDS-PAGE analysis of ab157289. Lane 1: MWt Marker, Lane 2: ab157289 1µg.



Functional Studies - Recombinant human RANKL protein (ab157289)

Mononuclear cells differentiate into Osteoclasts in the presence of M-CSF and ab157289.

Method: Human CD14+ mononuclear cells isolated from adult peripheral blood were cultured in control medium (upper panel), in 25ng/ml M-CSF (middle panel), or in 25ng/ml M-CSF plus 50ng/ml ab157289 (lower panel). Osteoclasts were identified as Tartrate-Resistant Acid Phosphatase (TRAP)-positive multinucleated cells. Osteoclasts were detected exclusively in presence of ab157289 and in these culture conditions (M-CSF + ab157289), cells fused and generated multinucleated dark red TRAP-positive cells (arrows). Nuclei were stained with haematoxylin.

## **Our Abpromise to you: Quality guaranteed and expert technical support**

---

- Replacement or refund for products not performing as stated on the datasheet
- Valid for 12 months from date of delivery
- Response to your inquiry within 24 hours
  
- We provide support in Chinese, English, French, German, Japanese and Spanish
- Extensive multi-media technical resources to help you
- We investigate all quality concerns to ensure our products perform to the highest standards

If the product does not perform as described on this datasheet, we will offer a refund or replacement. For full details of the Abpromise, please visit <https://www.abcam.com/abpromise> or contact our technical team.

## **Terms and conditions**

---

- Guarantee only valid for products bought direct from Abcam or one of our authorized distributors