abcam

Product datasheet

Rat RANK ELISA Kit ab213918

1 Image

Overview

Product name Rat RANK ELISA Kit

Detection method Colorimetric

Precision

Intra-assay

Sample	n	Mean	SD	CV%
1	16	209pg/ml	13.58	= 6.5%
2	16	514pg/ml	34.95	= 6.8%
3	16	1401pg/ml	88.16	= 7.9%

Inter-assay

Sample	n	Mean	SD	CV%
1	24	226pg/ml	18.3	= 8.1%
2	24	542pg/ml	42.81	= 7.9%
3	24	1518pg/ml	97.15	= 6.4%

Sample type Cell culture supernatant, Serum

Assay type Sandwich (quantitative)

Sensitivity < 10 pg/ml

Range 62.5 pg/ml - 4000 pg/ml

Assay time 3h 30m

Assay duration Multiple steps standard assay

Species reactivity **Reacts with:** Rat

Product overview The Rat RANK Enzyme-Linked Immunosorbent Assay (ELISA) kit (ab213918) is designed for the quantitative measurement of Rat RANK in cell culture supernatants and serum.

The ELISA kit is based on standard sandwich enzyme-linked immune-sorbent assay technology. A monoclonal antibody from mouse specific for RANK has been precoated onto 96-well plates.

Standards and test samples are added to the wells; a biotinylated detection polyclonal antibody from goat specific for RANK is added subsequently and then followed by washing with PBS or TBS buffer. Avidin-Biotin-Peroxidase Complex was added and unbound conjugates were washed away with PBS or TBS buffer. HRP substrate TMB was used to visualize HRP enzymatic reaction. TMB was catalyzed by HRP to produce a blue color product that changed into yellow after adding acidic stop solution. The density of yellow is proportional to the Rat RANK amount of sample captured in plate.

Notes

Receptor Activator of Nuclear Factor κ B (RANK), also known as TRANCE Receptor, is a type I membrane protein that is expressed on the surface of osteoclasts and is involved in their activation upon ligand binding. RANK, a recently described TNF receptor family member, and its ligand, RANKL, promote survival of dendritic cells and differentiation of osteoclasts. RANK contains 383 amino acids in its intracellular domain (residues 234-616), which contain three putative TRAF-binding domains (termed I, II, and III). RANK interacts with various TRAFs through distinct motifs and activates NF-kappaB via a novel TRAF6 interaction motif, which then activates NIK, thus leading to NF-kappaB activation, whereas RANK most likely activates JNK through a TRAF2-interacting region in RANK.

Platform

Pre-coated microplate (12 x 8 well strips)

Properties

Storage instructions

Store at -20°C. Please refer to protocols.

Components	Identifier	1 x 96 tests
ABC Diluent Buffer	Blue Cap	1 x 12ml
Adhesive Plate Seal		4 units
Antibody Diluent Buffer	Green Cap	1 x 12ml
Anti-rat RANK coated Microplate (12 x 8 wells)		1 unit
Avidin-Biotin-Peroxidase Complex (ABC)		1 x 100µl
Biotinylated anti- rat RANK antibody		1 x 100µl
Lyophilized recombinant rat RANK standard		2 vials
Sample Diluent Buffer	Green Cap	1 x 30ml
TMB Color Developing Agent	Black Cap	1 x 10ml
TMB Stop Solution	Yellow Cap	1 x 10ml
Wash Buffer (25X)		1 x 20ml

Function

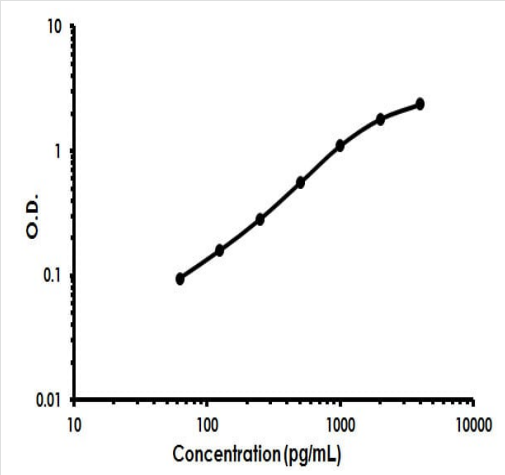
Receptor for TNFSF11/RANKL/TRANCE/OPGL; essential for RANKL-mediated osteoclastogenesis. Involved in the regulation of interactions between T-cells and dendritic cells.

Tissue specificity

Ubiquitous expression with high levels in skeletal muscle, thymus, liver, colon, small intestine and adrenal gland.

Involvement in disease	Defects in TNFRSF11A are the cause of familial expansile osteolysis (FEO) [MIM:174810]. FEO is a rare autosomal dominant bone disorder characterized by focal areas of increased bone remodeling. The osteolytic lesions develop usually in the long bones during early adulthood. FEO is often associated with early onset deafness and loss of dentition. Defects in TNFRSF11A are a cause of Paget disease of bone type 2 (PDB2) [MIM:602080]; also known as familial Paget disease of bone. PDB2 is a bone-remodeling disorder with clinical similarities to FEO. Unlike FEO, however, affected individuals have involvement of the axial skeleton with lesions in the spine, pelvis and skull. Defects in TNFRSF11A are the cause of osteopetrosis autosomal recessive type 7 (OPTB7) [MIM:612301]; also called osteoclast-poor osteopetrosis with hypogammaglobulinemia. 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. OPTB7 is characterized by paucity of osteoclasts, suggesting a molecular defect in osteoclast development. OPTB7 is associated with hypogammaglobulinemia.
Sequence similarities	Contains 4 TNFR-Cys repeats.
Cellular localization	Membrane.

Images



Rat RANK ELISA Kit (ab213918) Standard Curve.

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