RANKL (total), soluble (human) ELISA kit

The RANKL (total), soluble (human) ELISA kit is a complete assay for the quantitative determination of free and OPG-bound human soluble RANKL levels. This kit is to be used with serum, plasma and cell culture supernatant from human origin.

RANKL (receptor activator of nuclear factor (NF)-κB ligand; also: osteoprotegerin ligand, OPGL), its cellular receptor, receptor activator of NF-κB (RANK), and the decoy receptor, osteoprotegerin (OPG) have been identified as the key molecular regulation system for bone remodelling. RANKL, a member of the tumor necrosis factor (TNF) family, is the main stimulatory factor for the formation of mature osteoclasts and is essential for their survival. Therefore, an increase in RANKL expression leads to bone resorption and bone loss. RANKL is produced by osteoblastic lineage cells and activated T lymphocytes. It activates its specific receptor RANK which is located on osteoclasts and dendritic cells. The effects of RANKL are counteracted by OPG which is secreted by various tissues and acts as an endogenous soluble receptor antagonist.Imbalances of the RANKL/OPG system have been related to the pathogenesis of Paget's disease, benign and malignant bone tumors, postmenopausal osteoporosis, rheumatoid arthritis, bone metastases and hypercalcemia. It was shown in several studies that in animal models restoring of the RANKL/OPG balance (e.g. by administering OPG) reduces the severity of these disorders. It has been shown, that RANKL is produced as a membrane-bound protein on murine osteoblasts/stromal cells, and cleaved into a soluble form by a metalloprotease. Stimulators of the osteoclastogenesis such as IL-1β, IL-6, IL-11, IL-17, and TNF-α, increase the expression of RANKL and decrease OPG expression in osteoblasts/stromal cells. Cytokines inhibiting the osteoclastogenesis such as IL-13, INF-γ, and TGF-β1, suppress the expression of RANKL and stimulated OPG expression.

Molecular structure: sRANKL is a part of the TNF superfamily with high similarity to other members of that protein species. Two isoforms are produced by alternate splicing, a type II membrane protein (ISOFORM 1, 317 AA, MW 35.5 kD), and a secreted molecule (ISOFORM 2, 244 AA, MW 27.7kD), lacking the cytoplasmic and transmembrane domain. Although both forms are bioactive, the membrane bound protein seems to be the homeostatic form, while the production of soluble RANKL signals

pathological conditions.

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ALX-850-019-KI01	96 wells

Manuals, SDS & CofA View Online »

Handling & Storage

Long Term Storage	+4°C
Shipping	Blue Ice

Regulatory Status

RUO - Research Use Only

Product Details

Alternative Name	ODF, OPGL, TRANCE, TNFSF 11, CD254
Application	ELISA
Application Notes	For the quantitative determination of free and OPG-bound human soluble RANKL from serum, plasma and cell culture supernatant.
Assay Time	Overnight + 3 hours
Compatibility	This product is compatible with the **Absorbance 96 Plate Reader**.
Quantity	For 96 wells (~80 tests)
Sensitivity	~1.56pg/ml (range 2.2-60pmol/l)
Species Reactivity	Human
Technical Info / Product Notes	**Principle:** RANKL (total), soluble (human) ELISA kit is an enzyme immunoassay for the direct measurement of free and OPG-bound human soluble RANKL from biological fluids (serum, plasma and cell culture supernatant). The concentration of total soluble RANKL is indicated by an enzyme-catalysed colour conversion which is monitored by the ELISA photometer. The color intensity is directly proportional to the concentration of total soluble RANKL in the sample.
UniProt ID	O14788
Wavelength	450 nm

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