

# Anti-hRANKL-hIgG1

Human IgG1 neutralizing monoclonal antibody against human RANKL

Catalog code: hrankl-mab1, hrankl-mab1-03

<https://www.invivogen.com/anti-human-rankl-igg1-denosumab>

For research use only, not for diagnostic or therapeutic use

Version 23L18-MM

## PRODUCT INFORMATION

**Contents:** Anti-hRANKL-hIgG1 purified monoclonal antibody (mAb) is provided azide-free and lyophilized. It is available in two quantities:

**hrankl-mab1:** 100 µg Anti-hRANKL-hIgG1

**hrankl-mab1-03:** 3 x 100 µg Anti-hRANKL-hIgG1

**Target:** Human receptor activator of nuclear factor- $\kappa$ B ligand (hRANKL)

**Source:** CHO cells

**Isotype:** Human IgG1

**Light chain type:** Kappa

**Purity:** Protein G purified

**Formulation:** 0.2 µm filtered solution in 68 mM sodium phosphate buffer (pH 7.4) with 91 mM glycine, 5% w/v saccharose and stabilizing agents

**Tested applications:** Flow cytometry

### Antibody resuspension (0.1 mg/ml)

*Note:* Ensure you see the lyophilized pellet before resuspension.

Add 1 ml of sterile water to 100 µg and gently pipette until completely resuspended.

### Storage and stability

- Product is shipped at room temperature. Upon receipt, store at -20°C.
- Reconstituted antibody is stable for 1 month when stored at 4°C and for 1 year when aliquoted and stored at -20°C. Avoid repeated freeze-thaw cycles.

### Quality control

- Binding of Anti-hRANKL-hIgG1 to hRANKL has been confirmed using ELISA and neutralizing cellular assays.
- The complete sequence of this antibody has been verified.
- The absence of bacterial contamination, lipoproteins and endotoxins, has been confirmed using HEK-Blue™ TLR2 and HEK-Blue™ TLR4 cells.

## ANTIBODY ISOTYPE COLLECTION

For your research, InvivoGen offers an Anti-hRANKL antibody family consisting of 2 different Fc isotypes; IgG1 and IgG2. These mAbs vary in their potency to mediate effector functions, such as complement-dependent cytotoxicity (CDC), antibody-dependent cellular cytotoxicity (ADCC) and antibody-dependent cellular phagocytosis (ADCP), as presented in the table below.

Effector function	IgG1	IgG2
ADCC	++	+/-
ADCP	+++	+/-
CDC	++	+

## DESCRIPTION

Anti-hRANKL-hIgG1 mAb features the constant region of the human IgG1 isotype and the variable region of Denosumab. The clinically approved antibody, Denosumab, is a fully human IgG2 mAb that targets the transmembrane and soluble form of hRANKL, a member of the tumor necrosis factor cytokine family<sup>1</sup>. Denosumab binding to hRANKL blocks this cytokine interaction with its receptor RANK and the downstream signaling<sup>2</sup>. RANKL-RANK signaling is essential for the formation, function, and survival of mature osteoclasts, which are responsible for bone resorption. RANKL also has important functions in the immune system where it plays a pivotal role in dendritic cell maturation and in T-cell differentiation<sup>2</sup>. Denosumab has been approved by the FDA for the treatment of osteoporosis and bone metastasis.

Anti-hRANKL-hIgG1 can be used in comparison with other anti-hRANKL mAbs to assess differences in the effector functions between isotypes. Human IgG1 is the most abundant immunoglobulin present in serum and binds with high affinity to the Fc receptor on phagocytic cells. The human IgG1 isotype displays high CDC, high ADCC, and very high ADCP.

Anti-hRANKL-hIgG1 was generated by recombinant DNA technology. It has been produced in CHO cells and by affinity chromatography with protein G.

As negative controls, InvivoGen provides antibody isotypes targeting *E. coli*  $\beta$ -galactosidase ( $\beta$ -Gal).

1. Ahern E. *et al.*, 2018. Roles of the RANKL-RANK axis in antitumour immunity - implications for therapy. *Nat Rev Clin Oncol*. 15(11):676-693. 2. Cheng M.L. & Fong L., 2014. Effects of RANKL-Targeted Therapy in Immunity and Cancer. *Front Oncol*. 3:329.

## RELATED PRODUCTS

Product	Catalog Code
Anti- $\beta$ -Gal-hIgG1 (Negative control)	bgal-mab1
Anti-hRANKL-hIgG2 (Denosumab)	hrankl-mab2
pUNO1-hTRANCEa (gene for hRANKL)	puno1-htrancea

Isotype collections for other clinically relevant antibodies, such as Anti-hCD20 (Rituximab), Anti-hCTLA4 (Ipilimumab), Anti-hPD1 (Nivolumab) and Anti-HER2 (Trastuzumab) are also available. For more information visit [www.invivogen.com/biosimilar-antibody-isotypes](https://www.invivogen.com/biosimilar-antibody-isotypes).

### TECHNICAL SUPPORT

InvivoGen USA (Toll-Free): 888-457-5873

InvivoGen USA (International): +1 (858) 457-5873

InvivoGen Europe: +33 (0) 5-62-71-69-39

InvivoGen Asia: +852 3622-3480

E-mail: [info@invivogen.com](mailto:info@invivogen.com)