#3959 Store at -20°C

RANK Ligand (R2) Antibody

Cell Signaling TECHNOLOGY®

☑ 100 µl
(10 western blots)

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rev. 05/28/10

Entrez-Gene ID #8600
Swiss-Prot Acc. #O14788

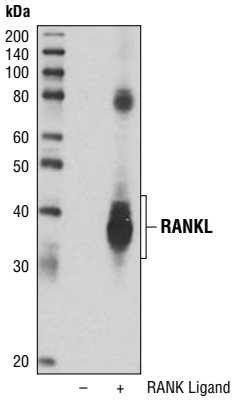
Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W, IP Transfected	H, (Mk, Pg, B)	35-45 kDa	Rabbit**

Background: RANK (receptor activator of NF-κB) is a member of the tumor necrosis factor (TNF) receptor subfamily that is activated by its ligand, RANKL (TRANCE/OPGL/ODF), to promote survival of dendritic cells and differentiation of osteoclasts (1-4). Although RANK is widely expressed, its cell surface expression may be more restricted to dendritic cells and foreskin fibroblasts (1). RANK contains a 383-amino acid intracellular domain that associates with specific members of the TRAF family to NF-κB and JNK activiation (1,5). RANKL/RANK signaling may also lead to survival signaling through activation of the Akt pathway and an upregulation of survival proteins, including Bcl-xL (2,6). RANK signaling has been implicated as a potential therapeutic to inhibit bone loss and arthritis (7,8).

RANKL (1), also named TNF-related activation-induced cytokine (TRANCE) (2,9), osteoprotegerin ligand (OPGL) (3), osteoclast differentiation factor (ODF) (4), and TNFSF11, is a type II transmembrane protein of the TNF family that exists as both a membrane-bound and soluble form. It is an essential regulator of immune function and bone development and homeostasis (7,10,11). RANKL is predominately expressed in activated T cells, as well as the thymus, lymph node, and bone marrow and promotes dendritic cell survival. Deletion of RANKL in mice leads to severe osteoporosis with a loss of osteoclasts, defects in T and B cell differentiation, loss of lymph node development, and mammary gland development during pregnancy (12-14).

Specificity/Sensitivity: RANK Ligand (R2) Antibody detects transfected levels of cellular RANK Ligand protein.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues near the amino terminus of human RANK Ligand, within the cytoplasmic region. Antibody was purified by protein A and peptide affinity chromatography.



Western blot analysis of extracts from COS-7 cells, untransfected (-) or transfected (+) with a construct expressing human RANK Ligand, using RANK Ligand (R2) Antibody

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. *Do not aliquot the antibody.*

***Species cross-reactivity is determined by western blot.**

****Anti-rabbit secondary antibodies must be used to detect this antibody.**

Recommended Antibody Dilutions:

Western blotting	1:1000
Immunoprecipitation	1:50

For application specific protocols please see the web page for this product at www.cellsignal.com.

Please visit www.cellsignal.com for a complete listing of recommended companion products.

Background References:

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(2) Wong, B.R. et al. (1997) *J. Exp. Med.* 186, 2075–80.
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(4) Yasuda, H. et al. (1998) *Proc. Natl. Acad. Sci. USA* 95, 3597–602.
(5) Darnay, B.G. et al. (1998) *J. Biol. Chem.* 273, 20551–5.
(6) Wong, B.R. et al. (1999) *Mol. Cell* 4, 1041–9.
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(8) Nakashima, T. et al. (2003) *Curr. Opin. Rheumatol.* 15, 280–7.
(9) Wong, B.R. et al. (1997) *J Biol Chem* 272, 25190–4.
(10) Hofbauer, L.C. (1999) *Eur J Endocrinol* 141, 195–210.
(11) Theill, L.E. et al. (2002) *Annu Rev Immunol* 20, 795–823.
(12) Mizuno, A. et al. (1998) *Biochem Biophys Res Commun* 247, 610–5.
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(14) Fata, J.E. et al. (2000) *Cell* 103, 41–50.

IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.

Applications Key: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide
Species Cross-Reactivity Key: **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebrafish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **Ce**—C. elegans **Hr**—Horse **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.