

RANK (B-8): sc-390655



The Power to Question

BACKGROUND

Members of the tumor necrosis factor (TNF) receptor superfamily interact with signaling molecules of the TNF receptor-associated factor (TRAF) family to activate the NF κ B and JNK pathways. RANK (receptor activator of NF κ B) is a member of the TNFR family identified on dendritic cells. This type I membrane receptor is expressed in a broad range of tissues. The C-terminus of RANK is required for RANK to bind TRAF2, 5 and 6, and it is also necessary for stimulating NF κ B activation. The ligand for this receptor, RANKL (also designated TRANCE or ODF), is a type II transmembrane protein expressed primarily in lymphoid tissues and T cell lines. RANKL appears to be an important regulator of T cells and osteoclasts.

CHROMOSOMAL LOCATION

Genetic locus: *Tnfrsf11a* (mouse) mapping to 1 E2.1.

SOURCE

RANK (B-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 587-612 near the C-terminus of RANK of mouse origin.

PRODUCT

Each vial contains 200 μ g IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RANK (B-8) is available conjugated to agarose (sc-390655 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390655 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390655 PE), fluorescein (sc-390655 FITC), Alexa Fluor[®] 488 (sc-390655 AF488), Alexa Fluor[®] 546 (sc-390655 AF546), Alexa Fluor[®] 594 (sc-390655 AF594) or Alexa Fluor[®] 647 (sc-390655 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-390655 AF680) or Alexa Fluor[®] 790 (sc-390655 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-390655 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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APPLICATIONS

RANK (B-8) is recommended for detection of RANK of mouse and rat origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for RANK siRNA (m): sc-42961, RANK shRNA Plasmid (m): sc-42961-SH and RANK shRNA (m) Lentiviral Particles: sc-42961-V.

Molecular Weight (predicted) of RANK: 66 kDa.

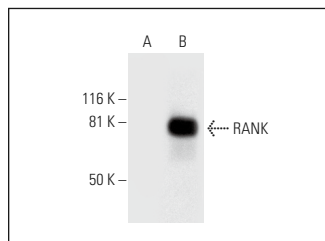
Molecular Weight (observed) of RANK: 82-90 kDa.

Positive Controls: RANK (m): 293T Lysate: sc-122962.

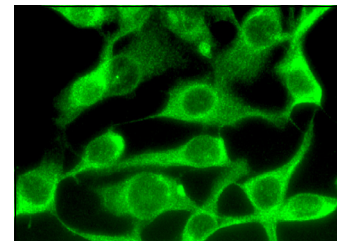
STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



RANK (B-8): sc-390655. Western blot analysis of RANK expression in non-transfected: sc-117752 (A) and mouse RANK transfected: sc-122962 (B) 293T whole cell lysates.



RANK (B-8): sc-390655. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Yuasa, H., et al. 2017. Mechanism of M-cell differentiation accelerated by proliferation of indigenous bacteria in rat Peyer's patches. *J. Vet. Med. Sci.* 79: 1826-1835.
2. Bishop, R.T., et al. 2020. Combined administration of a small-molecule inhibitor of TRAF6 and docetaxel reduces breast cancer skeletal metastasis and osteolysis. *Cancer Lett.* 488: 27-39.
3. Kawashima, K., et al. 2022. Development of chimeric RANK with GST in the extracellular domain: artificial switch in a membrane receptor. *Chem. Biol. Drug Des.* 99: 573-584.
4. Ding, P., et al. 2022. Toll-like receptor 9 deficiency induces osteoclastic bone loss via gut microbiota-associated systemic chronic inflammation. *Bone Res.* 10: 42.
5. Kumar, V., et al. 2022. Pterostilbene-isothiocyanate impedes RANK/TRAF6 interaction to inhibit osteoclastogenesis, promoting osteogenesis *in vitro* and alleviating glucocorticoid induced osteoporosis in rats. *Biochem. Pharmacol.* 206: 115284.
6. Rattajak, P., et al. 2023. 5'-methylthioadenosine strongly suppresses RANKL-induced osteoclast differentiation and function via inhibition of RANK-NFATc1 signalling pathways. *Heliyon* 9: e22365.
7. Rattajak, P., et al. 2024. *Pleurotus sajor-caju* (Fr.) singer β -1,3-glucanoglycosaccharide (Ps-GOS) suppresses RANKL-induced osteoclast differentiation and function in pre-osteoclastic RAW 264.7 cells by inhibiting the RANK/NF κ B/cFOS/NFATc1 signalling pathway. *Molecules* 29: 2113.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.