SANTA CRUZ BIOTECHNOLOGY, INC.

RANK (64C1385.1): sc-59981

SANTA CRUZ BIOTECHNOLOGY

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 NFκB and JNK pathways. RANK (receptor activator of NFκB) 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 TRAF 2, 5 and 6, and it is also necessary for stimulating NFκB 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.

REFERENCES

1. Wong, B.R., et al. 1997. TRANCE is a novel ligand of the tumor necrosis factor receptor family that activates c-Jun N-terminal kinase in T cells. J. Biol. Chem. 272: 25190-25194.
2. Natoli, G., et al. 1997. Tumor necrosis factor (TNF) receptor 1 signaling downstream of TNF receptor-associated factor 2. Nuclear factor κB (NFκB)-inducing kinase requirement for activation of activating protein 1 and NFκB but not of c-Jun N-terminal kinase/stress-activated protein kinase. J. Biol. Chem. 272: 26079-26082.

CHROMOSOMAL LOCATION

Genetic locus: TNFRSF11A (human) mapping to 18q21.33; Tnfrsf11a (mouse) mapping to 1 E2.1.

SOURCE

RANK (64C1385.1) is a mouse monoclonal antibody raised against the extracellular domain of RANK of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RANK (64C1385.1) is available conjugated phycoerythrin (sc-59981 PE, 100 tests in 2 ml), for WB (RGB), IF, IHC(P) and FCM.

APPLICATIONS

RANK (64C1385.1) is recommended for detection of RANK of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and flow cytometry (1 µg per 1 x 10^6 cells).

Suitable for use as control antibody for RANK siRNA (h): sc-42960, RANK siRNA (m): sc-42961, RANK shRNA Plasmid (h): sc-42960-SH, RANK shRNA Plasmid (m): sc-42961-SH, RANK shRNA (h) Lentiviral Particles: sc-42960-V and RANK shRNA (m) Lentiviral Particles: sc-42961-V.

Molecular Weight (predicted) of RANK: 66 kDa.

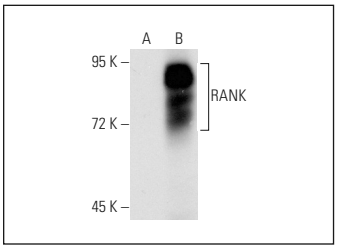
Molecular Weight (observed) of RANK: 82-90 kDa.

Positive Controls: SJRH30 cell lysate: sc-2287, Hep G2 cell lysate: sc-2227 or 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 (64C1385.1): sc-59981. Western blot analysis of RANK expression in non-transfected: sc-117752 (**A**) and mouse RANK transfected: sc-122962 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. McNally, A.K. and Anderson, J.M. 2011. Foreign body-type multinucleated giant cells induced by interleukin-4 express select lymphocyte co-stimulatory molecules and are phenotypically distinct from osteoclasts and dendritic cells. Exp. Mol. Pathol. 91: 673-681.
2. Luo, G., et al. 2018. TNF-α and RANKL promote osteoclastogenesis by upregulating RANK via the NFκB pathway. Mol. Med. Rep. 17: 6605-6611.
3. Yang, X., et al. 2019. Osteoprotegerin mediate RANK/RANKL signaling inhibition eases asthma inflammatory reaction by affecting the survival and function of dendritic cells. Allergol. Immunopathol. 47: 179-184.
4. Zhou, L., et al. 2019. MicroRNA-100-5p inhibits osteoclastogenesis and bone resorption by regulating fibroblast growth factor 21. Int. J. Mol. Med. 43: 727-738.
5. Ge, N., et al. 2020. Orthodontic treatment induces Th17/Treg cells to regulate tooth movement in rats with periodontitis. Iran. J. Basic Med. Sci. 23: 1315-1322.
6. Zhuang, J., et al. 2021. Age-related accumulation of advanced oxidation protein products promotes osteoclastogenesis through disruption of redox homeostasis. Cell Death Dis. 12: 1160.

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.

CONJUGATES

See **RANK (H-7): sc-374360** for RANK antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.