SANTA CRUZ BIOTECHNOLOGY, INC.

RANK (hBA-175): sc-4619

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 κ B (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.
3. Shi, C.S., et al. 1997. Activation of stress-activated protein kinase/c-Jun N-terminal kinase, but not NFκB, by the tumor necrosis factor (TNF) receptor 1 through a TNF receptor-associated factor 2- and germinal center kinase related-dependent pathway. J. Biol. Chem. 272: 32102-32107.
4. Anderson, D.M., et al. 1997. A homologue of the TNF receptor and its ligand enhance T cell growth and Dendritic-cell function. Nature 390: 175-179.
5. Darnay, B.G., et al. 1998. Characterization of the intracellular domain of receptor activator of NFκB (RANK). Interaction with tumor necrosis factor receptor-associated factors and activation of NFκB and c-Jun N-terminal kinase. J. Biol. Chem. 273: 20551-20555.
6. Wong, B.R., et al. 1998. The TRAF family of signal transducers mediates NFκB activation by the TRANCE receptor. J. Biol. Chem. 273: 28355-28359.

CHROMOSOMAL LOCATION

Genetic locus: TNFRSF11A (human) mapping to 18q22.1; Tnfrsf11a (mouse) mapping to 1 E2.1.

SOURCE

RANK (hBA-175) is produced in *E. coli* as 19.3 kDa biologically active protein corresponding to 175 amino acids comprising the extracellular domain of human RANK of human origin.

PRODUCT

RANK (hBA-175) is purified from bacterial lysates (>98%); supplied as 100 µg purified protein.

RESEARCH USE

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

BIOLOGICAL ACTIVITY

RANK (hBA-175) is biologically active as determined by the ability of RANK to suppress the production of IFN-gamma from human PBMCs.

RECONSTITUTION

In order to avoid freeze/thaw damaging of the active protein, dilute protein when first used to desired working concentration. Either a sterile filtered standard buffer (such as 50mM TRIS or 1X PBS) or water can be used for the dilution. Store any thawed aliquot in refrigeration at 2° C to 8° C for up to four weeks, and any frozen aliquot at -20° C to -80° C for up to one year. It is recommended that frozen aliquots be given an amount of standard cryopreservative (such as Ethylene Glycol or Glycerol 5-20% v/v), and refrigerated samples be given an amount of carrier protein (such as heat inactivated FBS or BSA to 0.1% v/v) or non-ionic detergent (such as Triton X-100 or Tween 20 to 0.005% v/v), to aid stability during storage.

STORAGE

Store desiccated at -20° C; stable for one year from the date of shipment.

PROTOCOLS

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