

RACK1 (B-3): sc-17754

BACKGROUND

Members of the protein kinase C (PKC) family play a key regulatory role in a variety of cellular functions, including cell growth and differentiation, gene expression, hormone secretion and membrane function. Receptor for activated C kinases, termed RACKs, are intracellular receptors for activated PKC that may be involved in the activation-induced translocation of PKC. RACK1 (receptor for activated C kinase 1) is a 317 amino acid G protein β subunit-like protein that functions as a RACK and inhibits the activity of Src tyrosine kinases. In response to PKC activation, the intracellular localization of RACK1 and PKC β II changes, and RACK1 and PKC β II co-localize to the same sites. RACK1 is therefore thought to be a shuttling protein for PKC β II. A deficit in RACK1 may be associated with impaired PKC activation in the aging brain. The RACK1 gene is conserved in chimpanzee, canine, bovine, mouse, rat, chicken, zebrafish, fruit fly, mosquito, *C. elegans*, *S. pombe*, *S. cerevisiae*, *K. lactis*, *E. gossypii*, *M. grisea*, *N. crassa*, *A. thaliana*, rice and *P. falciparum*, and maps to human chromosome 5q35.3.

REFERENCES

1. Takai, Y., et al. 1979. Calcium-dependent activation of a multifunctional protein kinase by membrane phospholipids. *J. Biol. Chem.* 254: 3692-3695.
2. Castagna, M., et al. 1982. Direct activation of calcium-activated, phospholipid-dependent protein kinase by tumor-promoting phorbol esters. *J. Biol. Chem.* 257: 7847-7851.
3. Kikkawa, U., et al. 1983. Protein kinase C as a possible receptor of tumor-promoting phorbol esters. *J. Biol. Chem.* 258: 11442-11445.

CHROMOSOMAL LOCATION

Genetic locus: RACK1 (human) mapping to 5q35.3; Gnb211 (mouse) mapping to 11 B1.2.

SOURCE

RACK1 (B-3) is a mouse monoclonal antibody raised against amino acids 131-317 of RACK1 of human 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.

RACK1 (B-3) is available conjugated to agarose (sc-17754 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-17754 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-17754 PE), fluorescein (sc-17754 FITC), Alexa Fluor[®] 488 (sc-17754 AF488), Alexa Fluor[®] 546 (sc-17754 AF546), Alexa Fluor[®] 594 (sc-17754 AF594) or Alexa Fluor[®] 647 (sc-17754 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-17754 AF680) or Alexa Fluor[®] 790 (sc-17754 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor[®] is a trademark of Molecular Probes, Inc., Oregon, USA

STORAGE

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

APPLICATIONS

RACK1 (B-3) is recommended for detection of RACK1 of mouse, rat and human origin by Western Blotting (starting dilution 1:500, dilution range 1:500-1:2,500), 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

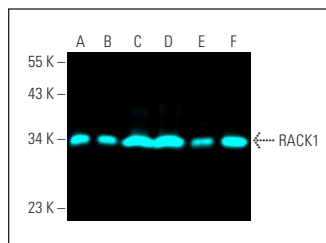
RACK1 (B-3) is also recommended for detection of RACK1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for RACK1 siRNA (h): sc-36354, RACK1 siRNA (m): sc-36355, RACK1 siRNA (r): sc-156032, RACK1 shRNA Plasmid (h): sc-36354-SH, RACK1 shRNA Plasmid (m): sc-36355-SH, RACK1 shRNA Plasmid (r): sc-156032-SH, RACK1 shRNA (h) Lentiviral Particles: sc-36354-V, RACK1 shRNA (m) Lentiviral Particles: sc-36355-V and RACK1 shRNA (r) Lentiviral Particles: sc-156032-V.

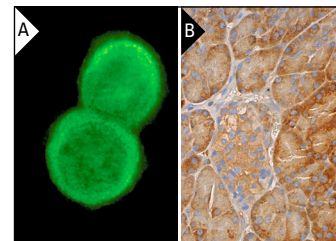
Molecular Weight of RACK1: 36 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, WEHI-231 whole cell lysate: sc-2213 or KNRK whole cell lysate: sc-2214.

DATA



RACK1 (B-3) Alexa Fluor[®] 647: sc-17754 AF647. Direct fluorescent western blot analysis of RACK1 expression in Jurkat (A), WEHI-231 (B), KNRK (C), NIH/3T3 (D), HeLa (E) and Raji (F) whole cell lysates. Blocked with UltraCruz[®] Blocking Reagent: sc-516214.



RACK1 (B-3): sc-17754. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and membrane staining (A). RACK1 (B-3) HRP: sc-17754 HRP. Direct immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of exocrine glandular cells and islets of Langerhans. Blocked with 0.25X UltraCruz[®] Blocking Reagent: sc-516214 (B).

SELECT PRODUCT CITATIONS

1. Angenstein, F., et al. 2002. A receptor for activated C kinase is part of messenger ribonucleoprotein complexes associated with poly(A)-mRNAs in neurons. *J. Neurosci.* 22: 8827-8837.
2. Thakur, C., et al. 2022. Deletion of mdg enhances H3K36me3 and metastatic potential of the triple negative breast cancer cells. *iScience* 25: 105057.
3. Oudart, M., et al. 2023. The ribosome-associated protein RACK1 represses Kir4.1 translation in astrocytes and influences neuronal activity. *Cell Rep.* 42: 112456.

RESEARCH USE

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