

# RACK7 siRNA (h): sc-76337

## 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 serve as anchors and may be involved in the activation-induced translocation of PKC. RACK7 (receptor for activated C kinase 7), also known as ZMYND8 (zinc finger MYND domain-containing protein 8), PRKCBP1 (protein kinase C (PKC)-binding protein 1) or PRO2893, is a widely expressed protein with predominant expression in pancreas, lung, placenta and brain. RACK7 contains one bromodomain, one PHD-type zinc finger, one MYND-type zinc finger and one PWWP domain. Via its C-terminus, RACK7 interacts with PKC  $\beta$  and is believed to play a role in PKC signaling and function as a transcription regulator. In response to DNA damage, RACK7 is phosphorylated by ATM or ATR. In addition, multiple isoforms exist for RACK7.

## REFERENCES

1. Fossey, S.C., et al. 2000. Identification and characterization of PRKCBP1, a candidate RACK-like protein. *Mamm. Genome* 11: 919-925.
2. Zhang, Y., et al. 2001. Identification of differentially expressed genes following treatment of monkey kidney cells with the mycotoxin fumonisin B<sub>1</sub>. *Food Chem. Toxicol.* 39: 45-53.
3. Park, J., et al. 2002. Mutation profiling of mismatch repair-deficient colorectal cancers using an in silico genome scan to identify coding microsatellites. *Cancer Res.* 62: 1284-1288.
4. Ansieau, S. and Sergeant, A. 2003. BS69 and RACK7, a potential novel class of tumor suppressor genes. *Pathol. Biol.* 51: 397-399.

## CHROMOSOMAL LOCATION

Genetic locus: ZMYND8 (human) mapping to 20q13.12.

## PRODUCT

RACK7 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see RACK7 shRNA Plasmid (h): sc-76337-SH and RACK7 shRNA (h) Lentiviral Particles: sc-76337-V as alternate gene silencing products.

For independent verification of RACK7 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-76337A, sc-76337B and sc-76337C.

## STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNases and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

RACK7 siRNA (h) is recommended for the inhibition of RACK7 expression in human cells.

## SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10  $\mu$ M in 66  $\mu$ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

## GENE EXPRESSION MONITORING

RACK7 (RF-9): sc-100824 is recommended as a control antibody for monitoring of RACK7 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor RACK7 gene expression knockdown using RT-PCR Primer: RACK7 (h)-PR: sc-76337-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

1. Adhikary, S., et al. 2016. Selective recognition of H3.1K36 dimethylation/H4K16 acetylation facilitates the regulation of All-*trans*-retinoic Acid (ATRA)-responsive genes by putative chromatin reader ZMYND8. *J. Biol. Chem.* 291: 2664-2681.
2. Basu, M., et al. 2017. Dual histone reader ZMYND8 inhibits cancer cell invasion by positively regulating epithelial genes. *Biochem. J.* 474: 1919-1934.
3. Mukherjee, S., et al. 2020. Suppression of poised oncogenes by ZMYND8 promotes chemo-sensitization. *Cell Death Dis.* 11: 1073.

## RESEARCH USE

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