SANTA CRUZ BIOTECHNOLOGY, INC.

# Ral GPS2 siRNA (h): sc-88634

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*The Power to Question*

## BACKGROUND

Ral GPS2 (Ral GEF with PH domain and SH3 binding motif 2) is a 583 amino acid member of the Ral GPS family and functions as a guanine nucleotide-exchange factor (GEF) for the small GTPase Ral A. Members of the Ral GPS family of GEFs are distinct from other Ral GEFs in that they lack the Ras-GTP-binding domain and are therefore activated in a Ras-independent manner. Expressed in testis and brain, Ral GPS2 localizes to the cytoplasm and contains one Ras-GEF domain and one PH domain. Via its PH domain, Ral GPS2 can associate with the cell membrane and can bind to phosphatidylinositol 4,5-bisphosphate. In addition, Ral GPS2 interacts with GRB2 and PLC γ1 and may function in cytoskeleton organization and Ras-independent stimulation of transcription. Mutations in the gene encoding Ral GPS2 are implicated in the development of Alzheimer disease (AD).

## REFERENCES


1. Rebhun, J.F., et al. 2000. Identification and characterization of a new family of guanine nucleotide exchange factors for the Ras-related GTPase Ral. J. Biol. Chem. 275: 13406-13410.
2. Martegani, E., et al. 2002. Cloning and characterization of a new Ral-GEF expressed in mouse testis. Ann. N.Y. Acad. Sci. 973: 135-137.
3. Quilliam, L.A., et al. 2002. A growing family of guanine nucleotide exchange factors is responsible for activation of Ras-family GTPases. Prog. Nucleic Acid Res. Mol. Biol. 71: 391-444.
4. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 611154. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Hayes, M.G., et al. 2007. Identification of type 2 diabetes genes in Mexican Americans through genome-wide association studies. Diabetes 56: 3033-3044.
6. Liu, F., et al. 2007. A genomewide screen for late-onset Alzheimer disease in a genetically isolated Dutch population. Am. J. Hum. Genet. 81: 17-31.
7. Li, J., et al. 2007. Effects of IFN-γ and Stat1 on gene expression, growth, and survival in non-small cell lung cancer cells. J. Interferon Cytokine Res. 27: 209-220.


## CHROMOSOMAL LOCATION

Genetic locus: RALGPS2 (human) mapping to 1q25.2.

## PRODUCT

Ral GPS2 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Ral GPS2 shRNA Plasmid (h): sc-88634-SH and Ral GPS2 shRNA (h) Lentiviral Particles: sc-88634-V as alternate gene silencing products.

For independent verification of Ral GPS2 (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-88634A, sc-88634B and sc-88634C.

## 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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

Ral GPS2 siRNA (h) is recommended for the inhibition of Ral GPS2 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 µM in 66 µl. 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

Ral GPS2 (FE-63): sc-81899 is recommended as a control antibody for monitoring of Ral GPS2 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 Ral GPS2 gene expression knockdown using RT-PCR Primer: Ral GPS2 (h)-PR: sc-88634-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## 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.