SANTA CRUZ BIOTECHNOLOGY, INC.

RASAL2 siRNA (m): sc-62925

BACKGROUND

RASAL2 (ras protein activator like 2), also known as nGAP, is a Ras GTPase-activating protein. RAS proteins cycle between an active guanosine-triphosphate (GTP) bound form and an inactive, guanosine-diphosphate (GDP) bound form. GTPase-activating proteins (GAPs) accelerate the intrinsic rate of GTP hydrolysis of Ras-related proteins, resulting in downregulation of their active form. RASAL2 functions in the Ras/MAPK/ERK signaling pathway. It contains a C2 domain, a PH domain and a Ras-GAP domain. The gene encoding RASAL2 is located on chromosome 1 within the prostate cancer susceptibility locus. This suggests that a mutation or defect in RASAL2 is implicated in carcinogenesis. Two transcript variants exist for RASAL2 due to alternative splicing events.

REFERENCES

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2. Walker, S.A., et al. 2004. Identification of a Ras GTPase-activating protein regulated by receptor-mediated Ca^{2+} oscillations. EMBO J. 23: 1749-1760.
3. von Bergh, A.R., et al. 2004. Identification of a novel RAS GTPase-activating protein (RASGAP) gene at 9q34 as an MLL fusion partner in a patient with *de novo* acute myeloid leukemia. Genes Chromosomes Cancer 39: 324-334.
4. Ishikawa, M., et al. 2005. Experimental trial for diagnosis of pancreatic ductal carcinoma based on gene expression profiles of pancreatic ductal cells. Cancer Sci. 96: 387-393.
5. Liu, Q., et al. 2005. CAPRI and RASAL impose different modes of information processing on Ras due to contrasting temporal filtering of Ca^{2+}. J. Cell Biol. 170: 183-190.
6. Yarwood, S., et al. 2006. The GAP1 family of GTPase-activating proteins: spatial and temporal regulators of small GTPase signalling. Biochem. Soc. Trans. 34: 846-850.
7. Kupzig, S., et al. 2006. GAP1 family members constitute bifunctional Ras and Rap GTPase-activating proteins. J. Biol. Chem. 281: 9891-9900.
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CHROMOSOMAL LOCATION

Genetic locus: Rasal2 (mouse) mapping to 1 H1.

PRODUCT

RASAL2 siRNA (m) 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 RASAL2 shRNA Plasmid (m): sc-62925-SH and RASAL2 shRNA (m) Lentiviral Particles: sc-62925-V as alternate gene silencing products.

For independent verification of RASAL2 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-62925A, sc-62925B and sc-62925C.

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

RASAL2 siRNA (m) is recommended for the inhibition of RASAL2 expression in mouse 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

RASAL2 (B-11): sc-390605 is recommended as a control antibody for monitoring of RASAL2 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 RASAL2 gene expression knockdown using RT-PCR Primer: RASAL2 (m)-PR: sc-62925-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.