SANTA CRUZ BIOTECHNOLOGY, INC.

RGS18 siRNA (h): sc-61468

BACKGROUND

The regulators of G protein signaling (RGS) proteins inhibit heterotrimeric G protein signaling. RGS proteins work by functioning as GTPase-activating proteins (which increase the GTPase activity of G protein α subunits) thereby driving G proteins into their inactive GDP-bound form. RGS18 is a 234 amino acid peptide expressed mainly in megakaryocyte cells, but also in hematopoietic progenitor and myeloerythroid lineage cells. RGS18 expression is upregulated during megakaryocyte differentiation and may play an important role in the mediation of megakaryocyte chemotaxis. Structurally, RGS18 contains phosphorylation sites for casein kinase II, protein kinase C and protein kinase A. RGS18 specifically binds to two α subunits of the G protein, $G_{\alpha\ i}$ and $G_{\alpha\ q}$.

REFERENCES

1. Yowe, D., Weich, N., Prabhudas, M., Poisson, L., Errada, P., Kapeller, R., Yu, K., Faron, L., Shen, M., Cleary, J., Wilkie, T.M., Gutierrez-Ramos, C. and Hodge, M.R. 2001. RGS18 is a myeloerythroid lineage-specific regulator of molecule highly expressed in megakaryocytes. Biochem. J. 359: 109-118.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607190. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Berthebaud, M., Rivière, C., Jarrier, P., Foudi, A., Zhang, Y., Compagno, D., Galy, A., Vainchenker, W. and Louache, F. 2005. RGS16 is a negative regulator of SDF-1-CXCR4 signaling in megakaryocytes. Blood 106: 2962-2968.
4. Kveberg, L., Ryan, J.C., Rolstad, B. and Inngjerdingen, M. 2005. Expression of regulator of G protein signalling proteins in natural killer cells, and their modulation by Ly49A and Ly49D. Immunology 115: 358-365.
5. Aldenhoven, J., Chen, Y. and Moran, C. 2006. Assignment of UCK2, ATF3 and RGS18 from human chromosome 1 to porcine chromosomes 4, 9 and 10 with somatic and radiation hybrid panels. Cytogenet. Genome Res. 112: 341F.

CHROMOSOMAL LOCATION

Genetic locus: RGS18 (human) mapping to 1q31.2.

PRODUCT

RGS18 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 RGS18 shRNA Plasmid (h): sc-61468-SH and RGS18 shRNA (h) Lentiviral Particles: sc-61468-V as alternate gene silencing products.

For independent verification of RGS18 (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-61468A, sc-61468B and sc-61468C.

PROTOCOLS

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

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

RGS18 siRNA (h) is recommended for the inhibition of RGS18 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

RGS18 (F-5): sc-390908 is recommended as a control antibody for monitoring of RGS18 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 RGS18 gene expression knockdown using RT-PCR Primer: RGS18 (h)-PR: sc-61468-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.