SANTA CRUZ BIOTECHNOLOGY, INC.

RGS14 siRNA (h): sc-40673

BACKGROUND

Regulators of G protein signaling (RGS proteins) are a family of highly diverse, multifunctional signaling proteins that share a conserved 120 amino acid domain (RGS domain). RGS domains bind directly to activated G_α subunits and act as GTPase-activating proteins (GAPs) to attenuate and/or modulate hormone and neurotransmitter receptor-initiated signaling by both G_α-GTP and $G_{\beta\,\gamma}$. RGS proteins shorten the lifetime of the activated G protein. It is suggested that RGS14 may constitute a bridging molecule that allows cross-regulation of signaling pathways downstream from G protein-coupled receptors. The gene which encodes RGS14 maps to human chromosome 5q35.3.

REFERENCES

1. Snow, B.E., Antonio, L., Suggs, S., Gutstein, H.B. and Siderovski, D.P. 1997. Molecular cloning and expression analysis of rat RGS12 and RGS14. Biochem. Biophys. Res. Commun. 233: 770-777.
2. Kardestuncer, T., Wu, H., Lim, A.L. and Neer, E.J. 1998. Cardiac myocytes express mRNA for ten RGS proteins: changes in RGS mRNA expression in ventricular myocytes and cultured atria. FEBS Lett. 438: 285-288.
3. Hepler, J.R. 1999. Emerging roles for RGS proteins in cell signalling. Trends Pharmacol. Sci. 20: 376-382.
4. Traver, S., Bidot, C., Spassky, N., Baltauss, T., de Tand, M.F., Thomas, J.L., Zalc, B., Janoueix-Lerosey, I. and de Gunzburg, J. 2000. RGS14 is a novel Rap effector that preferentially regulates the GTPase activity of G_α. Biochem. J. 350: 19-29.
5. Sierra, D.A., Gilbert, D.J., Householder, D., Grishin, N.V., Yu, K., Ukidwe, P., Barker, S.A., He, W., Wensel, T.G., Otero, G., Brown, G., Copeland, N.G., Jenkins, N.A. and Wilkie, T.M. 2002. Evolution of the regulators of G protein signaling multigene family in mouse and human. Genomics 79: 177-185.

CHROMOSOMAL LOCATION

Genetic locus: RGS14 (human) mapping to 5q35.3.

PRODUCT

RGS14 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 RGS14 shRNA Plasmid (h): sc-40673-SH and RGS14 shRNA (h) Lentiviral Particles: sc-40673-V as alternate gene silencing products.

For independent verification of RGS14 (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-40673A, sc-40673B and sc-40673C.

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

RGS14 siRNA (h) is recommended for the inhibition of RGS14 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor RGS14 gene expression knockdown using RT-PCR Primer: RGS14 (h)-PR: sc-40673-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.