SANTA CRUZ BIOTECHNOLOGY, INC.

GCAP3 siRNA (h): sc-75114

BACKGROUND

The intracellular stimulation of guanylate cyclase (GC) by calcium, a key event in the recovery of the dark state of rod photoreceptors after exposure to light, is mediated by guanylate cyclase-activating proteins (GCAP). GCAPs are calcium-binding proteins belonging to the calmodulin superfamily and are specifically expressed in retina. GCAP3 (guanylyl cyclase-activating protein 3), also known as GUCA1C (guanylate cyclase activator 1C), is a 209 amino acid EF-hand calcium binding protein that is activated by the decrease in calcium from the absorption of light by rhodopsin. Activation of GCAP3 leads to stimulation of guanylate cyclase 1 and 2 (GC1 and GC2), which increases cGMP concentration. Calcium sensitive regulation of GC is essential in recovery of the rod receptor dark state following light exposure. There are two isoforms of GCAP3 that are produced as a result of alternative splicing events.

REFERENCES

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CHROMOSOMAL LOCATION

Genetic locus: GUCA1C (human) mapping to 3q13.13.

PROTOCOLS

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

PRODUCT

GCAP3 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 GCAP3 shRNA Plasmid (h): sc-75114-SH and GCAP3 shRNA (h) Lentiviral Particles: sc-75114-V as alternate gene silencing products.

For independent verification of GCAP3 (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-75114A, sc-75114B and sc-75114C.

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

GCAP3 siRNA (h) is recommended for the inhibition of GCAP3 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 GCAP3 gene expression knockdown using RT-PCR Primer: GCAP3 (h)-PR: sc-75114-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.