SANTA CRUZ BIOTECHNOLOGY, INC.

$G_{\alpha\ 14}$ siRNA (h): sc-105381

BACKGROUND

Heterotrimeric G proteins are composed of three units, designated G_{α}, G_{β} and G_{γ}, all of which work together to relay information from cell surface receptors to intracellular effectors. Each of a very broad range of receptors specifically detects an extracellular stimulus (a photon, pheromone, odorant, hormone or neurotransmitter), while the effectors (i.e. adenyl cyclase), which act to generate one or more intracellular messengers, are less numerous. $G_{\alpha\ 14}$, also known as GNA14 (guanine nucleotide-binding protein subunit α-14), is a 355 amino acid protein that is expressed in fetal lung and belongs to the G_{α} family of guanine-nucleotide binding proteins. $G_{\alpha\ 14}$ shares 98% homology with its mouse counterpart and is thought to play a role in transmembrane signaling systems throughout the body.

REFERENCES

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4. Cali, J.J., et al. 1992. Selective tissue distribution of G protein γ subunits, including a new form of the γ subunits identified by cDNA cloning. J. Biol. Chem. 267: 24023-24027.
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CHROMOSOMAL LOCATION

Genetic locus: GNA14 (human) mapping to 9q21.2.

PRODUCT

$G_{\alpha\ 14}$ 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 $G_{\alpha\ 14}$ shRNA Plasmid (h): sc-105381-SH and $G_{\alpha\ 14}$ shRNA (h) Lentiviral Particles: sc-105381-V as alternate gene silencing products.

For independent verification of $G_{\alpha\ 14}$ (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-105381A, sc-105381B and sc-105381C.

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

$G_{\alpha\ 14}$ siRNA (h) is recommended for the inhibition of $G_{\alpha\ 14}$ 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

$G_{\alpha\ q/11/14}$ (G-7): sc-365906 is recommended as a control antibody for monitoring of $G_{\alpha\ 14}$ 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 $G_{\alpha\ 14}$ gene expression knockdown using RT-PCR Primer: $G_{\alpha\ 14}$ (h)-PR: sc-105381-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.