

GPR56 siRNA (h): sc-60749

BACKGROUND

G protein-coupled receptors (GPRs or GPCRs), also known as seven transmembrane receptors, heptahelical receptors or seven 7TM receptors, are members of the largest protein family and play a role in many different stimulus-response pathways. G protein-coupled receptors mediate extracellular signals into intracellular signals (G protein activation). They respond to a great variety of signaling molecules, including hormones, neurotransmitters and other proteins and peptides. GPR proteins are integral seven-pass membrane proteins with some conserved amino acid regions. G protein-coupled receptor 56 (GPR56), also designated TM7XN1 protein, contains one GPS domain. GPR56 plays an important role in cell-cell interactions and is widely expressed, with highest levels detected in brain, heart and thyroid gland. Defects in the gene encoding for GPR56 can cause bilateral frontoparietal polymicrogyria (BFPP) which is characterized by disorganized cortical lamination.

REFERENCES

1. Liu, M., et al. 1999. GPR56, a novel secretin-like human G protein-coupled receptor gene. *Genomics* 55: 296-305.
2. Zendman, A.J., et al. 1999. TM7XN1, a novel human EGF-TM7-like cDNA, detected with mRNA differential display using human melanoma cell lines with different metastatic potential. *FEBS Lett.* 446: 292-298.
3. Clark, H.F., et al. 2003. The secreted protein discovery initiative (SPDI), a large-scale effort to identify novel human secreted and transmembrane proteins: a bioinformatics assessment. *Genome Res.* 13: 2265-2270.
4. Piao, X., et al. 2004. G protein-coupled receptor-dependent development of human frontal cortex. *Science* 303: 2033-2036.

CHROMOSOMAL LOCATION

Genetic locus: ADGRG1 (human) mapping to 16q21.

PRODUCT

GPR56 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see GPR56 shRNA Plasmid (h): sc-60749-SH and GPR56 shRNA (h) Lentiviral Particles: sc-60749-V as alternate gene silencing products.

For independent verification of GPR56 (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-60749A, sc-60749B and sc-60749C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

GPR56 siRNA (h) is recommended for the inhibition of GPR56 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 μ M in 66 μ l. 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

GPR56 (G-6): sc-390192 is recommended as a control antibody for monitoring of GPR56 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 GPR56 gene expression knockdown using RT-PCR Primer: GPR56 (h)-PR: sc-60749-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Song, Y., et al. 2016. Expression of G protein-coupled receptor 56 is associated with tumor progression in non-small-cell lung carcinoma patients. *Onco Targets Ther.* 9: 4105-4112.

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.