SANTA CRUZ BIOTECHNOLOGY, INC.

GPR56 siRNA (m): sc-60750

BACKGROUND

G protein-coupled receptors (GPRs or GPCRs), also known as seven transmembrane receptors, heptahelical receptors or 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.
5. Jansen, A. and Andermann, E. 2005. Genetics of the polymicrogyria syndromes. J. Med. Genet. 42: 369-378.
6. Shashidhar, S., et al. 2005. GPR56 is a GPCR that is overexpressed in gliomas and functions in tumor cell adhesion. Oncogene 24: 1673-1682.

CHROMOSOMAL LOCATION

Genetic locus: Adgrg1 (mouse) mapping to 8 D1.

PRODUCT

GPR56 siRNA (m) 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 GPR56 shRNA Plasmid (m): sc-60750-SH and GPR56 shRNA (m) Lentiviral Particles: sc-60750-V as alternate gene silencing products.

For independent verification of GPR56 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-60750A, sc-60750B and sc-60750C.

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

GPR56 siRNA (m) is recommended for the inhibition of GPR56 expression in mouse 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 GPR56 gene expression knockdown using RT-PCR Primer: GPR56 (m)-PR: sc-60750-PR (20 µl, 567 bp). 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.