SANTA CRUZ BIOTECHNOLOGY, INC.

GPR6 siRNA (m): sc-62398

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. GPR6 (G protein-coupled receptor 6), also known as Sphingosine 1-phosphate receptor GPR6, is a 362 amino acid orphan receptor that activates cyclic AMP. Existing as two alternatively spliced isoforms, GPR6 is thought to promote neurite outgrowth and block myelin inhibition in neurons. GPR6 is encoded by a gene located on human chromosome 6.

REFERENCES

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2. Montpetit, A. and Sinnett, D. 1999. Physical mapping of the G protein-coupled receptor 19 (GPR19) in the chromosome 12p12.3 region frequently rearranged in cancer cells. Hum. Genet. 105: 162-164.
3. Uhlenbrock, K., et al. 2002. Sphingosine 1-phosphate is a ligand of the human GPR3, GPR6 and GPR12 family of constitutively active G protein-coupled receptors. Cell. Signal. 14: 941-953.
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5. Bresnick, J.N., et al. 2003. Identification of signal transduction pathways used by orphan G protein-coupled receptors. Assay Drug Dev. Technol. 1: 239-249.
6. Hoffmeister-Ullerich, S.A., et al. 2004. The orphan G protein-coupled receptor GPR19 is expressed predominantly in neuronal cells during mouse embryogenesis. Cell Tissue Res. 318: 459-463.
7. Rossi, P., et al. 2004. Analysis of the gene expression profile of mouse male meiotic germ cells. Gene Expr. Patterns 4: 267-281.
8. Assou, S., et al. 2007. A meta-analysis of human embryonic stem cells transcriptome integrated into a web-based expression atlas. Stem Cells 25: 961-973.
9. Riker, A.I., et al. 2008. The gene expression profiles of primary and metastatic melanoma yields a transition point of tumor progression and metastasis. BMC Med. Genomics 1: 13.

CHROMOSOMAL LOCATION

Genetic locus: Gpr6 (mouse) mapping to 10 B1.

PROTOCOLS

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

PRODUCT

GPR6 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 GPR6 shRNA Plasmid (m): sc-62398-SH and GPR6 shRNA (m) Lentiviral Particles: sc-62398-V as alternate gene silencing products.

For independent verification of GPR6 (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-62398A, sc-62398B and sc-62398C.

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

GPR6 siRNA (m) is recommended for the inhibition of GPR6 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 GPR6 gene expression knockdown using RT-PCR Primer: GPR6 (m)-PR: sc-62398-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.