



GPR18 siRNA (m): sc-75171

BACKGROUND

G protein-coupled receptors (GPRs), also known as seven transmembrane receptors, heptahelical receptors or 7TM receptors, comprise a superfamily of proteins that play a role in many different stimulus-response pathways. G protein-coupled receptors translate extracellular signals into intracellular signals (G protein activation) and they respond to a variety of signaling molecules, such as hormones and neurotransmitters. GPR18 (G protein-coupled receptor 18), also known as GPCRW, is a 331 amino acid multi-pass membrane protein that belongs to the G protein-coupled receptor family. Expressed abundantly in spleen and testis, GPR18 functions as a receptor for N-arachidonyl glycine and is thought to contribute to the regulation of the immune system. GPR18 activity is mediated by G proteins that specifically inhibit adenylyl cyclase.

REFERENCES

1. Houslay, M.D. 1992. G-protein linked receptors: a family probed by molecular cloning and mutagenesis procedures. *Clin. Endocrinol.* 36: 525-534.
2. Larhammar, D., et al. 1993. The receptor revolution—multiplicity of G protein-coupled receptors. *Drug Des. Discov.* 9: 179-188.
3. Gantz, I., et al. 1997. Cloning and chromosomal localization of a gene (GPR18) encoding a novel seven transmembrane receptor highly expressed in spleen and testis. *Genomics* 42: 462-466.
4. Online Mendelian Inheritance in Man, OMIM™. 1997. Johns Hopkins University, Baltimore, MD. MIM Number: 602042. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
5. Schöneberg, T., et al. 1999. Structural basis of G protein-coupled receptor function. *Mol. Cell. Endocrinol.* 151: 181-193.
6. Schöneberg, T., et al. 2002. The structural basis of G protein-coupled receptor function and dysfunction in human diseases. *Rev. Physiol. Biochem. Pharmacol.* 144: 143-227.
7. Vassilatis, D.K., et al. 2003. The G protein-coupled receptor repertoires of human and mouse. *Proc. Natl. Acad. Sci. USA* 100: 4903-4908.

CHROMOSOMAL LOCATION

Genetic locus: Gpr18 (mouse) mapping to 14 E5.

PRODUCT

GPR18 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see GPR18 shRNA Plasmid (m): sc-75171-SH and GPR18 shRNA (m) Lentiviral Particles: sc-75171-V as alternate gene silencing products.

For independent verification of GPR18 (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-75171A, sc-75171B and sc-75171C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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

GPR18 siRNA (m) is recommended for the inhibition of GPR18 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 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor GPR18 gene expression knockdown using RT-PCR Primer: GPR18 (m)-PR: sc-75171-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. Yuan, Y., et al. 2018. Shufeng Jiedu capsules alleviate lipopolysaccharide-induced acute lung inflammatory injury via activation of GPR18 by verbenalin. *Cell. Physiol. Biochem.* 50: 629-639.

PROTOCOLS

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