

# GPR75 siRNA (h): sc-94341

## 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. GPR75 is a 540 amino acid multi-pass membrane protein that functions as an orphan receptor and belongs to the GPR1 family. Highly expressed in spinal cord and brain, GPR75 is also found at low levels in retinal pigment epithelium. The gene encoding GPR75 maps to human chromosome 2, which consists of 237 million bases, encodes over 1,400 genes and makes up approximately 8% of the human genome. A number of genetic diseases are linked to genes on chromosome 2 including Harlequin ichthyosis, sitosterolemia and Alström syndrome.

## REFERENCES

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2. Zumsteg, U., et al. 2000. Alstrom syndrome: confirmation of linkage to chromosome 2p12-13 and phenotypic heterogeneity in three affected sibs. *J. Med. Genet.* 37: E8.
3. Shulenin, S., et al. 2001. An ATP-binding cassette gene (ABCG5) from the ABCG (white) gene subfamily maps to human chromosome 2p21 in the region of the Sitosterolemia locus. *Cytogenet. Cell Genet.* 92: 204-208.
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5. Hearn, T., et al. 2002. Mutation of ALMS1, a large gene with a tandem repeat encoding 47 amino acids, causes Alström syndrome. *Nat. Genet.* 31: 79-83.
6. Szekeres, P.G. 2002. Functional assays for identifying ligands at orphan G protein-coupled receptors. *Recept. Channels* 8: 297-308.
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.
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9. Davies, M.N., et al. 2011. Present perspectives on the automated classification of the G protein-coupled receptors (GPCRs) at the protein sequence level. *Curr. Top. Med. Chem.* 11: 1994-2009.

## CHROMOSOMAL LOCATION

Genetic locus: GPR75 (human) mapping to 2p16.2.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

## PRODUCT

GPR75 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see GPR75 shRNA Plasmid (h): sc-94341-SH and GPR75 shRNA (h) Lentiviral Particles: sc-94341-V as alternate gene silencing products.

For independent verification of GPR75 (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-94341A, sc-94341B and sc-94341C.

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

## APPLICATIONS

GPR75 siRNA (h) is recommended for the inhibition of GPR75 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  $\mu$ M in 66  $\mu$ 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 GPR75 gene expression knockdown using RT-PCR Primer: GPR75 (h)-PR: sc-94341-PR (20  $\mu$ l, 588 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

1. Cárdenas, S., et al. 2019. GPR75 receptor mediates 20-HETE-signaling and metastatic features of androgen-insensitive prostate cancer cells. *Biochim. Biophys. Acta Mol. Cell Biol. Lipids* 21: 158573.

## RESEARCH USE

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