SANTA CRUZ BIOTECHNOLOGY, INC.

GPR142 siRNA (m): sc-145707

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. GPR142 (G protein-coupled receptor 142), also known as PGR2, is a 462 amino acid multi-pass membrane protein that functions as an orphan receptor and belongs to the GPR1 family. Expressed at highest levels in the ventrolateral region of caudate putamen, zona incerta, medial mammillary nucleus and habenular nucleus, GPR142 is encoded by a gene that maps to human chromosome 17q25.1.

REFERENCES

1. Probst, W.C., et al. 1992. Sequence alignment of the G protein-coupled receptor superfamily. DNA Cell Biol. 11: 1-20.
2. Fredriksson, R., et al. 2003. Seven evolutionarily conserved human rhodopsin G protein-coupled receptors lacking close relatives. FEBS Lett. 554: 381-388.
3. Vassilatis, D.K., et al. 2003. The G protein-coupled receptor repertoires of human and mouse. Proc. Natl. Acad. Sci. USA 100: 4903-4908.
4. Online Mendelian Inheritance in Man, OMIM™. 2004. Johns Hopkins University, Baltimore, MD. MIM Number: 609046. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Matsuo, A., et al. 2005. Molecular cloning and characterization of a novel G_q-coupled orphan receptor GPRγ1 exclusively expressed in the central nervous system. Biochem. Biophys. Res. Commun. 331: 363-369.
6. Miller, L.J., et al. 2011. Ligand binding and activation of the secretin receptor, a prototypic family B G protein-coupled receptor. Br. J. Pharmacol. 166: 18-26.
7. Pelé, J., et al. 2011. Multidimensional scaling reveals the main evolutionary pathways of class a G protein-coupled receptors. PLoS ONE 6: e19094.

CHROMOSOMAL LOCATION

Genetic locus: Gpr142 (mouse) mapping to 11 E2.

PRODUCT

GPR142 siRNA (m) is a pool of 2 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 GPR142 shRNA Plasmid (m): sc-145707-SH and GPR142 shRNA (m) Lentiviral Particles: sc-145707-V as alternate gene silencing products.

For independent verification of GPR142 (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-145707A and sc-145707B.

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 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

GPR142 siRNA (m) is recommended for the inhibition of GPR142 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 GPR142 gene expression knockdown using RT-PCR Primer: GPR142 (m)-PR: sc-145707-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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