

GPR111 siRNA (h): sc-95234

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 wide variety of signaling molecules, including hormones, neurotransmitters and other proteins and peptides. GPR proteins are usually integral seven pass membrane proteins with some conserved amino acid regions. GPR111 (G protein-coupled receptor 111), also known as PGR20, is a 708 amino acid multi-pass membrane protein that belongs to the G-protein coupled receptor 2 family and LN-TM7 sub-family. Containing one GPS domain and existing as two alternatively spliced isoforms, GPR111 may function as an orphan receptor.

REFERENCES

1. Takeda, S., Kadowaki, S., Haga, T., Takaesu, H. and Mitaku, S. 2002. Identification of G protein-coupled receptor genes from the human genome sequence. *FEBS Lett.* 520: 97-101.
2. Fredriksson, R., Lagerström, M.C., Höglund, P.J. and Schiöth, H.B. 2002. Novel human G protein-coupled receptors with long N-terminals containing GPS domains and Ser/Thr-rich regions. *FEBS Lett.* 531: 407-414.
3. Fredriksson, R., Gloriam, D.E., Höglund, P.J., Lagerström, M.C. and Schiöth, H.B. 2003. There exist at least 30 human G protein-coupled receptors with long Ser/Thr-rich N-termini. *Biochem. Biophys. Res. Commun.* 301: 725-734.
4. Mungall, A.J., Palmer, S.A., Sims, S.K., Edwards, C.A., Ashurst, J.L., Wilming, L., Jones, M.C., Horton, R., Hunt, S.E., Scott, C.E., Gilbert, J.G., Clamp, M.E., Bethel, G., Milne, S., Ainscough, R., Almeida, J.P., et al. 2003. The DNA sequence and analysis of human chromosome 6. *Nature* 425: 805-811.
5. Vassilatis, D.K., Hohmann, J.G., Zeng, H., Li, F., Ranchalis, J.E., Mortrud, M.T., Brown, A., Rodriguez, S.S., Weller, J.R., Wright, A.C., Bergmann, J.E. and Gaitanaris, G.A. 2003. The G protein-coupled receptor repertoires of human and mouse. *Proc. Natl. Acad. Sci. USA* 100: 4903-4908.
6. Bjarnadóttir, T.K., Fredriksson, R., Höglund, P.J., Gloriam, D.E., Lagerström, M.C. and Schiöth, H.B. 2004. The human and mouse repertoire of the adhesion family of G protein-coupled receptors. *Genomics* 84: 23-33.
7. Covington, D.K., Briscoe, C.A., Brown, A.J. and Jayawickreme, C.K. 2006. The G protein-coupled receptor 40 family (GPR40-GPR43) and its role in nutrient sensing. *Biochem. Soc. Trans.* 34: 770-773.
8. Yonezawa, T., Kobayashi, Y. and Obara, Y. 2007. Short-chain fatty acids induce acute phosphorylation of the p38 mitogen-activated protein kinase/heat shock protein 27 pathway via GPR43 in the MCF-7 human breast cancer cell line. *Cell. Signal.* 19: 185-193.
9. Rayasam, G.V., Tulasi, V.K., Davis, J.A. and Bansal, V.S. 2007. Fatty acid receptors as new therapeutic targets for diabetes. *Expert Opin. Ther. Targets* 11: 661-671.

CHROMOSOMAL LOCATION

Genetic locus: ADGRF2 (human) mapping to 6p12.3.

PRODUCT

GPR111 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see GPR111 shRNA Plasmid (h): sc-95234-SH and GPR111 shRNA (h) Lentiviral Particles: sc-95234-V as alternate gene silencing products.

For independent verification of GPR111 (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-95234A, sc-95234B and sc-95234C.

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

GPR111 siRNA (h) is recommended for the inhibition of GPR111 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 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 GPR111 gene expression knockdown using RT-PCR Primer: GPR111 (h)-PR: sc-95234-PR (20 μ l). 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.

PROTOCOLS

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