

GPR82 siRNA (m): sc-145740

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. GPR82 is a 336 amino acid multi-pass membrane protein that functions as an orphan receptor and belongs to the GPR1 family. The gene encoding GPR82 maps to human chromosome X, which consists of about 153 million base pairs and nearly 1,000 genes. Color blindness, hemophilia and Duchenne muscular dystrophy are well known X chromosome-linked conditions which affect males more frequently, as males carry a single X chromosome.

REFERENCES

1. Lee, D.K., Nguyen, T., Lynch, K.R., Cheng, R., Vanti, W.B., Arkhitko, O., Lewis, T., Evans, J.F., George, S.R. and O'Dowd, B.F. 2001. Discovery and mapping of ten novel G protein-coupled receptor genes. *Gene* 275: 83-91.
2. Menzaghi, F., Behan, D.P. and Chalmers, D.T. 2002. Constitutively activated G protein-coupled receptors: a novel approach to CNS drug discovery. *Curr. Drug Targets CNS Neurol. Disord.* 1: 105-121.
3. Szekeres, P.G. 2002. Functional assays for identifying ligands at orphan G protein-coupled receptors. *Recept. Channels* 8: 297-308.
4. 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.
5. Deeb, S.S. 2005. The molecular basis of variation in human color vision. *Clin. Genet.* 67: 369-377.
6. Helderma-van den Enden, A.T., de Jong, R., den Dunnen, J.T., Houwing-Duistermaat, J.J., Kneppers, A.L., Ginjaar, H.B., Breuning, M.H. and Bakker, E. 2009. Recurrence risk due to germ line mosaicism: Duchenne and Becker muscular dystrophy. *Clin. Genet.* 75: 465-472.
7. Kasper, C.K. and Buzin, C.H. 2009. Mosaicism and haemophilia. *Haemophilia*. E-published.
8. Davies, M.N., Gloriam, D.E., Secker, A., Freitas, A.A., Timmis, J. and Flower, D.R. 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: Gpr82 (mouse) mapping to X A1.1.

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.

PRODUCT

GPR82 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 GPR82 shRNA Plasmid (m): sc-145740-SH and GPR82 shRNA (m) Lentiviral Particles: sc-145740-V as alternate gene silencing products.

For independent verification of GPR82 (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-145740A, sc-145740B and sc-145740C.

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

GPR82 siRNA (m) is recommended for the inhibition of GPR82 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 GPR82 gene expression knockdown using RT-PCR Primer: GPR82 (m)-PR: sc-145740-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.