SANTA CRUZ BIOTECHNOLOGY, INC.

GPR125 siRNA (h): sc-89088

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. GPR125 (G protein-coupled receptor 125), also known as PGR21 or TEM5L, is a 1,321 amino acid multipass membrane protein belonging to the G protein-coupled receptor 2 family and the LN-TM7 subfamily. Considered a novel orphan adhesion-type G protein-coupled receptor, GPR125 has five leucine rich repeats (LRR), an immunoglobulin (Ig) domain and a GPS domain. GPR125 may play a functional role in choroidal and hippocampal response to brain injury. It is also suggested that GPR125 may be a marker for spermatogonial stem cells. Four isoforms of GPR125 exists due to alternative splicing events.

REFERENCES

1. Lee, D.K., et al. 2001. Discovery and mapping of ten novel G protein-coupled receptor genes. Gene 275: 83-91.
2. Fredriksson, R., et al. 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.
3. Bjarnadóttir, T.K., et al. 2004. The human and mouse repertoire of the adhesion family of G protein-coupled receptors. Genomics 84: 23-33.
4. Bjarnadóttir, T.K., et al. 2007. Identification of novel splice variants of adhesion G protein-coupled receptors. Gene 387: 38-48.
5. Seandel, M., et al. 2007. Generation of functional multipotent adult stem cells from GPR125^{+} germline progenitors. Nature 449: 346-350.
6. Pickering, C., et al. 2008. The adhesion GPCR GPR125 is specifically expressed in the choroid plexus and is upregulated following brain injury. BMC Neurosci. 9: 97.
7. Seandel, M., et al. 2008. Niche players: spermatogonial progenitors marked by GPR125. Cell Cycle 7: 135-140.
8. Dym, M., et al. 2009. Spermatogonial stem cells: unlimited potential. Reprod. Fertil. Dev. 21: 15-21.

CHROMOSOMAL LOCATION

Genetic locus: GPR125 (human) mapping to 4p15.2.

PRODUCT

GPR125 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see GPR125 shRNA Plasmid (h): sc-89088-SH and GPR125 shRNA (h) Lentiviral Particles: sc-89088-V as alternate gene silencing products.

For independent verification of GPR125 (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-89088A, sc-89088B and sc-89088C.

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

GPR125 siRNA (h) is recommended for the inhibition of GPR125 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 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 GPR125 gene expression knockdown using RT-PCR Primer: GPR125 (h)-PR: sc-89088-PR (20 µl). 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.