SANTA CRUZ BIOTECHNOLOGY, INC.

GPR12 siRNA (m): sc-60736

BACKGROUND

G protein-coupled receptors (GPRs) are a protein family of transmembrane receptors that transmit an extracellular signal (ligand binding) into an intracellular signal (G protein activation). GPR signaling is an evolutionarily ancient mechanism used by all eukaryotes to sense environmental stimuli and mediate cell-cell communication. All of the receptors have seven membrane-spanning domains and the extracellular parts of the receptor can be glycosylated. These extracellular loops also contain two highly conserved cysteine residues which create disulfide bonds to stabilize the receptor structure. GPR12 is a 334 amino acid peptide that is expressed primarily in brain, particularly in regions where neuronal differentiation takes place. GPR12 is coupled to an inhibitory G protein. It positively influences differentiation and maturation of post-mitotic neurons and it may promote the growth of neuronal precursor cells.

REFERENCES

1. Two new fluoroquinolones. 1992. Med. Lett. Drugs Ther. 34: 58-60.
2. Song, Z.H., et al. 1996. Molecular cloning and chromosomal localization of human genes encoding three closely related G protein-coupled receptors. Genomics 28: 347-349.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 600752. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Ignatov, A., et al. 2003. Role of the G protein-coupled receptor GPR12 as high-affinity receptor for sphingosylphosphorylcholine and its expression and function in brain development. J. Neurosci. 23: 907-914.
5. Uhlenbrock, K., et al. 2003. Fluid shear stress differentially regulates GPR3, GPR6, and GPR12 expression in human umbilical vein endothelial cells. Cell. Physiol. Biochem. 13: 75-84.
6. Hinckley, M., et al. 2005. The G protein-coupled receptors GPR3 and GPR12 are involved in cAMP signaling and maintenance of meiotic arrest in rodent oocytes. Dev. Biol. 287: 249-261.

CHROMOSOMAL LOCATION

Genetic locus: Gpr12 (mouse) mapping to 5 G3.

PRODUCT

GPR12 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see GPR12 shRNA Plasmid (m): sc-60736-SH and GPR12 shRNA (m) Lentiviral Particles: sc-60736-V as alternate gene silencing products.

For independent verification of GPR12 (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-60736A, sc-60736B and sc-60736C.

PROTOCOLS

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

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

GPR12 siRNA (m) is recommended for the inhibition of GPR12 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 GPR12 gene expression knockdown using RT-PCR Primer: GPR12 (m)-PR: sc-60736-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.