SANTA CRUZ BIOTECHNOLOGY, INC.

GPR17 siRNA (m): sc-76031

BACKGROUND

G protein-coupled receptor 17, GPR17, also known as uracil nucleotide/cysteinyl leukotriene receptor or P2Y-like receptor (P2YL), is a 367 amino acid member of the G protein-coupled receptor 1 family of proteins. While GPR17 is expressed in kidney, heart and umbilical vein endothelial cells, it is expressed in the highest levels in the brain. Upon brain injury, the extracellular concentrations of nucleotides and cysteinyl leukotrienes (CysLTs), two families of endogenous signaling molecules, increase significantly at the site of damage. In some neurons, GPR17, a membrane receptor for uracil nucleotide and CysLTs, is upregulated as well, infiltrating the lesioned area. GPR17 is thought to play a role in mediating neuronal death, remodeling brain circuitries by microglia and initiating remyelination in damaged neurons. Two named isoforms of GPR17 exist as a result of 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. Moro, S. and Jacobson, K.A. 2002. Molecular modeling as a tool to investigate molecular recognition in P2Y receptors. Curr. Pharm. Des. 8: 2401-2413.
3. Ciana, P., et al. 2006. The orphan receptor GPR17 identified as a new dual uracil nucleotides/cysteinyl-leukotrienes receptor. EMBO J. 25: 4615-4627.
4. Belous, A.E., et al. 2006. Mitochondrial calcium transport is regulated by P2Y1- and P2Y2-like mitochondrial receptors. J. Cell. Biochem. 99: 1165-1174.
5. von Kügelgen, I. 2006. Pharmacological profiles of cloned mammalian P2Y-receptor subtypes. Pharmacol. Ther. 110: 415-432.
6. Parravicini, C., et al. 2008. GPR17: molecular modeling and dynamics studies of the 3-D structure and purinergic ligand binding features in comparison with P2Y receptors. BMC Bioinformatics 9: 263.
7. Lecca, D., et al. 2008. The recently identified P2Y-like receptor GPR17 is a sensor of brain damage and a new target for brain repair. PLoS ONE 3: e3579.

CHROMOSOMAL LOCATION

Genetic locus: Gpr17 (mouse) mapping to 18 B1.

PRODUCT

GPR17 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 GPR17 shRNA Plasmid (m): sc-76031-SH and GPR17 shRNA (m) Lentiviral Particles: sc-76031-V as alternate gene silencing products.

For independent verification of GPR17 (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-76031A, sc-76031B and sc-76031C.

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

GPR17 siRNA (m) is recommended for the inhibition of GPR17 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.

GENE EXPRESSION MONITORING

GPR17 (A-10): sc-514723 is recommended as a control antibody for monitoring of GPR17 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor GPR17 gene expression knockdown using RT-PCR Primer: GPR17 (m)-PR: sc-76031-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.