SANTA CRUZ BIOTECHNOLOGY, INC.

GPR80 siRNA (m): sc-145739

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. GPR signaling is an evolutionarily ancient mechanism used by all eukaryotes to sense environmental stimuli and mediate cell-cell communication. 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. GPR80, also designated GPR99, is a 337 amino acid protein that was originally characterized as a P2Y15 receptor and thought to be activated by AMP and adenosine. GPR80 is actually a receptor for α-ketoglutarate and appears to act exclusively through a G_q-mediated pathway. It is expressed in kidney and placenta.

REFERENCES

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3. Schöneberg, T., et al. 1999. Structural basis of G protein-coupled receptor function. Mol. Cell. Endocrinol. 151: 181-193.
4. Schwalbe, H., et al. 2002. Dissecting G protein-coupled receptors: structure, function, and ligand interaction. Chembiochem. 3: 915-919.
5. Small, K.M., et al. 2002. False positive non-synonymous polymorphisms of G protein-coupled receptor genes. FEBS Lett. 516: 253-256.
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7. Vassilatis, D.K., et al. 2003. The G protein-coupled receptor repertoires of human and mouse. Proc. Natl. Acad. Sci. USA 100: 4903-4908.
8. Qi, A.D., et al. 2004. GPR80/99, proposed to be the $P2Y_{15}$ receptor activated by adenosine and AMP, is not a P2Y receptor. Purinergic Signal 1: 67-74.

CHROMOSOMAL LOCATION

Genetic locus: Oxgr1 (mouse) mapping to 14 E4.

PRODUCT

GPR80 siRNA (m) is a target-specific 19-25 nt siRNA 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 GPR80 shRNA Plasmid (m): sc-145739-SH and GPR80 shRNA (m) Lentiviral Particles: sc-145739-V as alternate gene silencing products.

For independent verification of GPR80 (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-145739A, sc-145739B and sc-145739C.

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

GPR80 siRNA (m) is recommended for the inhibition of GPR80 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 GPR80 gene expression knockdown using RT-PCR Primer: GPR80 (m)-PR: sc-145739-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.