SANTA CRUZ BIOTECHNOLOGY, INC.

GPR30 siRNA (m): sc-60744

BACKGROUND

G protein-coupled receptors (GPCRs), also designated seven transmembrane (7TM) receptors and heptahelical receptors, are a protein family which interact with G proteins (heterotrimeric GTPases) to synthesize intracellular second messengers such as diacylglycerol, cyclic AMP, inositol phosphates, and calcium ions. Their diverse biological functions range from vision and olfaction to neuronal and endocrine signaling and are involved in many pathological conditions. G protein receptor 30 (GPR30), also designated chemokine receptor-like 2 (CMKRL2), is a 375-amino acid protein orphan GCPR. GRP30 is an intracellular transmembrane estrogen receptor localized to the endoplasmic reticulum which binds estrogen and estrogen derivatives.

CHROMOSOMAL LOCATION

Genetic locus: Gpr30 (mouse) mapping to 5 G2.

PRODUCT

GPR30 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 GPR30 shRNA Plasmid (m): sc-60744-SH and GPR30 shRNA (m) Lentiviral Particles: sc-60744-V as alternate gene silencing products.

For independent verification of GPR30 (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-60744A, sc-60744B and sc-60744C.

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

GPR30 siRNA (m) is recommended for the inhibition of GPR30 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 GPR30 gene expression knockdown using RT-PCR Primer: GPR30 (m)-PR: sc-60744-PR (20 µl, 573 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Kajta, M., et al. 2013. The key involvement of estrogen receptor β and G protein-coupled receptor 30 in the neuroprotective action of daidzein. Neuroscience 238: 345-360.
2. Kajta, M., et al. 2014. Isomer-nonspecific action of dichlorodiphenyltrichloroethane on aryl hydrocarbon receptor and G protein-coupled receptor 30 intracellular signaling in apoptotic neuronal cells. Mol. Cell. Endocrinol. 392: 90-105.
3. Rzemieniec, J., et al. 2015. Neuroprotective action of raloxifene against hypoxia-induced damage in mouse hippocampal cells depends on ERα but not ERβ or GPR30 signalling. J. Steroid Biochem. Mol. Biol. 146: 26-37.
4. Ali, I., et al. 2015. Cadmium at nanomolar concentrations activates Raf-MEK-ERK1/2 MAPKs signaling via EGFR in human cancer cell lines. Chem. Biol. Interact. 231: 44-52.
5. Wei, J., et al. 2017. MiR-338 controls BPA-triggered pancreatic islet Insulin secretory dysfunction from compensation to decompensation by targeting Pdx-1. FASEB J. 31: 5184-5195.
6. Wnuk, A., et al. 2018. Apoptosis induced by the UV filter benzophenone-3 in mouse neuronal cells is mediated via attenuation of ERα/PPARγ and stimulation of ERβ/GPR30 signaling. Mol. Neurobiol. 55: 2362-2383.
7. Qiao, C., et al. 2018. Icariin modulates mitochondrial function and apoptosis in high glucose-induced glomerular podocytes through G protein-coupled estrogen receptors. Mol. Cell. Endocrinol. 473: 146-155.
8. Zhong, J., et al. 2019. G protein-coupled estrogen receptor 1 negatively regulates the proliferation of mouse-derived neural stem/progenitor cells via extracellular signal-regulated kinase pathway. Brain Res. 1714: 158-165.
9. Kajta, M., et al. 2020. Triclocarban impairs autophagy in neuronal cells and disrupts estrogen receptor signaling via hypermethylation of specific genes. Sci. Total Environ. 701: 134818.
10. Chuang, S.C., et al. 2020. G protein-coupled estrogen receptor mediates cell proliferation through the cAMP/PKA/CREB pathway in murine bone marrow mesenchymal stem cells. Int. J. Mol. Sci. 21: 6490.

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.