SANTA CRUZ BIOTECHNOLOGY, INC.

GPR30 siRNA (h2): sc-270207

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.

REFERENCES

1. Filardo, E.J., et al. 2002. Estrogen action via the G protein-coupled receptor, GPR30: stimulation of adenylyl cyclase and cAMP-mediated attenuation of the epidermal growth factor receptor-to-MAPK signaling axis. Mol. Endocrinol. 16: 70-84.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 601805. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Visser, J.E., et al. 2004. The motor disorder of classic Lesch-Nyhan disease. Nucleosides Nucleotides Nucleic Acids 23: 1161-1164.
4. Hasbi, A., et al. 2005. A G protein-coupled receptor for estrogen: the end of the search? Mol. Interv. 5: 158-161.
5. Kakinuma, N., et al. 2005. Cloning of novel LERGU mRNAs in GPR30 3' untranslated region and detection of 2 bp-deletion polymorphism in gastric cancer. Cancer Sci. 96: 191-196.
6. Thomas, P., et al. 2005. Identity of an estrogen membrane receptor coupled to a G protein in human breast cancer cells. Endocrinology 146: 624-632.
7. Revankar, C.M., et al. 2005. A transmembrane intracellular estrogen receptor mediates rapid cell signaling. Science 307: 1625-1630.

CHROMOSOMAL LOCATION

Genetic locus: GPER (human) mapping to 7p22.3.

PRODUCT

GPR30 siRNA (h2) is a pool of 2 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 (h2): sc-270207-SH and GPR30 shRNA (h2) Lentiviral Particles: sc-270207-V as alternate gene silencing products.

For independent verification of GPR30 (h2) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-270207A and sc-270207B.

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

GPR30 siRNA (h2) is recommended for the inhibition of GPR30 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 GPR30 gene expression knockdown using RT-PCR Primer: GPR30 (h2)-PR: sc-270207-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.