SANTA CRUZ BIOTECHNOLOGY, INC.

GPR103 siRNA (h): sc-60729

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. GPR103 is a 455-amino acid protein with highest expression in the brain, retina, trigeminal ganglion, hypothalamus and vestibular nucleus. In peripheral tissues, GPR103 is expressed only in the heart, kidney and testis. GPR103 may regulate adrenal function. A hypothalamic neuropeptide of the RFamide family (26RFa) acts as an endogenous ligand for GPR103.

REFERENCES

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4. Thuau, R., Guilhaudis, L., Ségalas-Milazzo, I., Chartrel, N., Oulyadi, H., Boivin, S., Fournier, A., Leprince, J., Davoust, D. and Vaudry, H. 2005. Structural studies on 26RFa, a novel human RFamide-related peptide with orexigenic activity. Peptides 26: 779-789.
5. Takayasu, S., Sakurai, T., Iwasaki, S., Teranishi, H., Yamanaka, A., Williams, S.C., Iguchi, H., Kawasawa, Y.I., Ikeda, Y., Sakakibara, I., Ohno, K., Ioka, R.X., Murakami, S., Dohmae, N., Xie, J., Suda, T., et al. 2006. A neuropeptide ligand of the G protein-coupled receptor GPR103 regulates feeding, behavioral arousal, and blood pressure in mice. Proc. Natl. Acad. Sci. USA 103: 7438-7443.

CHROMOSOMAL LOCATION

Genetic locus: QRFPR (human) mapping to 4q27.

PRODUCT

GPR103 siRNA (h) 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 GPR103 shRNA Plasmid (h): sc-60729-SH and GPR103 shRNA (h) Lentiviral Particles: sc-60729-V as alternate gene silencing products.

For independent verification of GPR103 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-60729A, sc-60729B and sc-60729C.

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

GPR103 siRNA (h) is recommended for the inhibition of GPR103 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 GPR103 gene expression knockdown using RT-PCR Primer: GPR103 (h)-PR: sc-60729-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Ramanjaneya, M., Karteris, E., Chen, J., Rucinski, M., Ziolkowska, A., Ahmed, N., Kagerer, S., Jöhren, O., Lehnert, H., Malendowicz, L.K. and Randeva, H.S. 2013. QRFP induces aldosterone production via PKC and T-type calcium channel-mediated pathways in human adrenocortical cells: evidence for a novel role of GPR103. Am. J. Physiol. Endocrinol. Metab. 305: E1049-E1058.

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.