SANTA CRUZ BIOTECHNOLOGY, INC.

GALR2 siRNA (h): sc-40008

BACKGROUND

The 387 amino acid protein galanin receptor-2 (GALR2) protein belongs to a family of G protein-coupled receptors that specifically bind galanin, a neuropeptide distributed throughout the central and peripheral nervous system, the pituitary gland, the gastrointestinal tract and in the endocrine and exocrine pancreas. GALR2 mRNA is abundant in parvocellular paraventricular nuclei, but in contrast to GALR1, is not expressed in magnocellular neurons or in supraoptic nuclei. Like GALR1 mRNA, GALR2 mRNA is expressed in the POMC neurons, dorsomedial nucleus, arcuate nucleus and in restricted peripheral tissue, with highest mRNA levels in human small intestine. Galanin-like peptide (GALP) is a putative endogenous ligand for GALR2. Binding of GALP to GALR2 results in increased GTPγS binding to the membrane-bound GALR2. GALR2 is therefore a receptor that mediates important functions of galanin in the hypothalamic-pituitary axis, plays a role in hippocampal and cerebellar function and mediates jejunal contraction.

REFERENCES

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2. Wang, S., et al. 1998. The GALR2 galanin receptor mediates galanin-induced jejunal contraction, but not feeding behavior, in the rat: differentiation of central and peripheral effects of receptor subtype activation. FEBS Lett. 434: 277-282.
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4. Zdrojewicz, Z. and Sowinska E. 2000. The significance of galanin in physiologic and pathologic processes in humans. Postepy Hig. Med. Dosw. 54: 819-833.
5. Bouret, S., et al. 2000. Expression of GALR1 and GALR2 galanin receptro messenger ribonucleic acid in proopiomelanocortin neurons of the rat arcuate nucleus: effect of testosterone. Endocrinology 141: 1780-1794.
6. Kerr, N.C., et al. 2000. Galanin-like peptide (GALP) is expressed in rat hypothalamus and ituitary, but not in DRG. Neuroreport 11: 3909-3913.
7. Zachariou, V., et al. 2001. Galanin receptor 1 gene expression is regulated by cyclic AMP through a CREB-dependent mechanism. J. Neurochem. 76: 191-200.
8. Gundlach, A.L., et al. 2001. Distribution, regulation and role of hypothalamic galanin systems: renewed interest in a pleiotropic peptide family. Clin. Exp. Pharmacol. Physiol. 28: 100-105.

CHROMOSOMAL LOCATION

Genetic locus: GALR2 (human) mapping to 17q25.1.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

PRODUCT

GALR2 siRNA (h) 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 GALR2 shRNA Plasmid (h): sc-40008-SH and GALR2 shRNA (h) Lentiviral Particles: sc-40008-V as alternate gene silencing products.

For independent verification of GALR2 (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-40008A and sc-40008B.

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

GALR2 siRNA (h) is recommended for the inhibition of GALR2 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 GALR2 gene expression knockdown using RT-PCR Primer: GALR2 (h)-PR: sc-40008-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.