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CGRP2 siRNA (m): sc-155874

BACKGROUND

Calcitonin is a 32-amino acid hormone that preserves skeletal integrity by inhibiting osteoclast formation and bone resorption. The secretion of Calcitonin from the thyroid is regulated in part by estrogen, which increases Calcitonin mRNA levels. CGRP2 (Calcitonin-related polypeptide, β), also known as CALC2 or CALCB, is a 130 amino acid secreted protein and a member of the Calcitonin family. CGRP2 is expressed in nerve cells of cerebrum, hippocampus and pons/midbrain in newborns, and only in nerve cells of pons/midbrain in adult. CGRP2 may play a role in vasodilation and in maintaining normal placental function. The gene encoding CGRP2 is thought to be derived from a gene duplication event and is not subject to alternative splicing. Mature CGRP1 and CGRP2 share significant sequence identity at the protein level differing by only 1-3 amino acid residues, depending on the species.

REFERENCES

1. Le Moullec, J.M., et al. 1984. The complete sequence of human preprocalcitonin. *FEBS Lett.* 167: 93-97.
2. Höppener, J.W., et al. 1985. The second human Calcitonin/CGRP gene is located on chromosome 11. *Hum. Genet.* 70: 259-263.
3. Amara, S.G., et al. 1985. Expression in brain of a messenger RNA encoding a novel neuropeptide homologous to Calcitonin gene-related peptide. *Science* 229: 1094-1097.
4. Hoovers, J.M., et al. 1993. High-resolution chromosomal localization of the human Calcitonin/CGRP/IAPP gene family members. *Genomics* 15: 525-529.
5. Silver, J. and Naveh-Many, T. 1993. Calcitonin gene regulation *in vivo*. *Horm. Metab. Res.* 25: 470-472.
6. Lou, H. and Gagel, R.F. 1998. Alternative RNA processing—its role in regulating expression of Calcitonin/Calcitonin gene-related peptide. *J. Endocrinol.* 156: 401-405.
7. Saetre, P., et al. 2004. From wild wolf to domestic dog: gene expression changes in the brain. *Brain Res. Mol. Brain Res.* 126: 198-206.
8. Rezaeian, A.H., et al. 2008. Genomic organization, expression and evolution of porcine CRSP1, 2, and 3. *Cytogenet. Genome Res.* 121: 41-49.

CHROMOSOMAL LOCATION

Genetic locus: *Calcb* (mouse) mapping to 7 F1.

PRODUCT

CGRP2 siRNA (m) 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see CGRP2 shRNA Plasmid (m): sc-155874-SH and CGRP2 shRNA (m) Lentiviral Particles: sc-155874-V as alternate gene silencing products.

For independent verification of CGRP2 (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-155874A and sc-155874B.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

CGRP2 siRNA (m) is recommended for the inhibition of CGRP2 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 μ M in 66 μ l. 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.

GENE EXPRESSION MONITORING

CGRP (4901): sc-57053 is recommended as a control antibody for monitoring of CGRP2 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor CGRP2 gene expression knockdown using RT-PCR Primer: CGRP2 (m)-PR: sc-155874-PR (20 μ l). 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.