SANTA CRUZ BIOTECHNOLOGY, INC.

GCM2 siRNA (h): sc-75119

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The Power to Question

BACKGROUND

Glial cells missing homolog 2 (GCM2), also known as Chorion-specific transcription factor GCMb, is a 506 amino acid nuclear protein. GCM2 is a transcription factor that acts as an essential regulator of parathyroid development. GCM2 is also thought to mediate the effect of calcium on parathyroid hormone expression and secretion in parathyroid cells. GCM2 contains one N-terminal GCM domain, which has DNA binding activity. Mutations of the gene that encodes GCM2 are associated with hypoparathyroidism, an autosomal recessive condition characterized by hypocalcemia and hyperphosphatemia.

REFERENCES

1. Kebebew, E., et al. 2004. GCMB gene, a master regulator of parathyroid gland development, expression, and regulation in hyperparathyroidism. Surgery 136: 1261-1266.
2. Thomee, C., et al. 2005. GCMB mutation in familial isolated hypoparathyroidism with residual secretion of parathyroid hormone. J. Clin. Endocrinol. Metab. 90: 2487-2492.
3. Baumber, L., et al. 2005. Identification of a novel mutation disrupting the DNA binding activity of GCM2 in autosomal recessive familial isolated hypoparathyroidism. J. Med. Genet. 42: 443-448.
4. Liu, Z., et al. 2007. Gcm2 is required for the differentiation and survival of parathyroid precursor cells in the parathyroid/thymus primordia. Dev. Biol. 305: 333-346.
5. Soustelle, L. and Giangrande, A. 2007. Novel gcm-dependent lineages in the postembryonic nervous system of *Drosophila melanogaster*. Dev. Dyn. 236: 2101-2108.
6. Maret, A., et al. 2008. Analysis of the GCM2 gene in isolated hypoparathyroidism: a molecular and biochemical study. J. Clin. Endocrinol. Metab. 93: 1426-1432.
7. Mannstadt, M., et al. 2008. Dominant-negative GCMB mutations cause an autosomal dominant form of hypoparathyroidism. J. Clin. Endocrinol. Metab. 93: 3568-3576.

CHROMOSOMAL LOCATION

Genetic locus: GCM2 (human) mapping to 6p24.2.

PRODUCT

GCM2 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 GCM2 shRNA Plasmid (h): sc-75119-SH and GCM2 shRNA (h) Lentiviral Particles: sc-75119-V as alternate gene silencing products.

For independent verification of GCM2 (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-75119A, sc-75119B and sc-75119C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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

GCM2 siRNA (h) is recommended for the inhibition of GCM2 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.

GENE EXPRESSION MONITORING

GCM2 (C-5): sc-390603 is recommended as a control antibody for monitoring of GCM2 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 GCM2 gene expression knockdown using RT-PCR Primer: GCM^2 (h)-PR: sc-75119-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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