

CaMKII γ siRNA (r): sc-270386

BACKGROUND

Ca²⁺/calmodulin-dependent protein kinase II (CaMKII) is a Ca²⁺-signaling intermediate that contains α , β , γ and δ subunits. Calcium oscillations, autophosphorylation and subunit composition of CaMKII influences the level of regulation of cellular events, including cell cycle and transcription. Several CaMKII protein isoforms are present in biliary epithelium.

REFERENCES

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2. Kwiatkowski, A.P., et al. 2000. Alternative splice variant of γ -calmodulin-dependent protein kinase II alters activation by calmodulin. *Arch. Biochem. Biophys.* 378: 377-383.
3. Bui, J.D., et al. 2000. A role for CaMKII in T cell memory. *Cell* 100: 457-467.
4. Lorenz, J.M., et al. 2002. Differential autophosphorylation of CaMKII from phasic and tonic smooth muscle tissues. *Am. J. Physiol., Cell Physiol.* 283: 1399-1413.
5. Gloyn, A.L., et al. 2002. Human calcium/calmodulin-dependent protein kinase II γ gene (CAMK2G): cloning, genomic structure and detection of variants in subjects with type II diabetes. *Diabetologia* 45: 580-583.
6. Gaertner, T.R., et al. 2004. Comparative analyses of the three-dimensional structures and enzymatic properties of α , β , γ and δ isoforms of Ca²⁺-calmodulin-dependent protein kinase II. *J. Biol. Chem.* 279: 12484-12494.
7. LocusLink Report (LocusID: 818). <http://www.ncbi.nlm.nih.gov/LocusLink/>

CHROMOSOMAL LOCATION

Genetic locus: Camk2g (rat) mapping to 15p16.

PRODUCT

CaMKII γ siRNA (r) 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see CaMKII γ shRNA Plasmid (r): sc-270386-SH and CaMKII γ shRNA (r) Lentiviral Particles: sc-270386-V as alternate gene silencing products.

For independent verification of CaMKII γ (r) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-270386A, sc-270386B and sc-270386C.

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

CaMKII γ siRNA (r) is recommended for the inhibition of CaMKII γ expression in rat 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

p-CaMKII (22B1): sc-32289 is recommended as a control antibody for monitoring of CaMKII γ 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, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Lambda Phosphatase: sc-200312A 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 CaMKII γ gene expression knockdown using RT-PCR Primer: CaMKII γ (r)-PR: sc-270386-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.