SANTA CRUZ BIOTECHNOLOGY, INC.

CapG siRNA (m): sc-44921

BACKGROUND

Caldesmon, Filamin 1, Nebulin, Plastin, ADF, Gelsolin, CapG, Dematin and Cofilin are differentially expressed Actin binding proteins. Both muscular (CDh) and non-muscular (CDl) forms of Caldesmon bind to Actin as well as to Calmodulin and Myosin. CDh is expressed predominantly on thin filaments in smooth muscle, whereas CDl is widely expressed in non-muscle tissues and cells. CapG, a macrophage-specific protein also designated Actin-regulatory protein, reversibly blocks the barbed ends of Actin filaments but does not sever preformed ones. The interactions of CapG with Actin may be important in the regulation of nuclear and cytoplasmic structures. CapG is a calcium-sensitive DNA-binding protein that plays a role in macrophage function. It is expressed in macrophages and macrophage-like cells and can localize both to the nucleus and the cytoplasm.

REFERENCES

1. Dabiri, G.A., et al. 1992. Molecular cloning of human macrophage capping protein cDNA. A unique member of the Gelsolin/Villin family expressed primarily in macrophages. J. Biol. Chem. 267: 16545-16552.
2. Mishra, V.S., et al. 1994. The human Actin-regulatory protein CapG: gene structure and chromosome location. Genomics 23: 560-565.
3. Southwick, F.S., et al. 1995. Gain-of-function mutations conferring Actin-severing activity to human macrophage CapG. J. Biol. Chem. 270: 45-48.
4. Pellieux, C., et al. 2003. CapG, a Gelsolin family protein modulating protective effects of unidirectional shear stress. J. Biol. Chem. 278: 29136-29144.
5. De Corte, V., et al. 2004. Increased importin-β-dependent nuclear import of the actin modulating protein CapG promotes cell invasion. J. Cell Sci. 117: 5283-5292.
6. Watari, A., et al. 2006. Suppression of tumorigenicity, but not anchorage independence, of human cancer cells by new candidate tumor suppressor gene CapG. Oncogene 25: 7373-7380.

CHROMOSOMAL LOCATION

Genetic locus: Capg (mouse) mapping to 6 C1.

PRODUCT

CapG siRNA (m) 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 CapG shRNA Plasmid (m): sc-44921-SH and CapG shRNA (m) Lentiviral Particles: sc-44921-V as alternate gene silencing products.

For independent verification of CapG (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-44921A, sc-44921B and sc-44921C.

PROTOCOLS

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

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

CapG siRNA (m) is recommended for the inhibition of CapG 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 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

CapG (H-9): sc-166428 is recommended as a control antibody for monitoring of CapG 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 CapG gene expression knockdown using RT-PCR Primer: CapG (m)-PR: sc-44921-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.