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SANTA CRUZ BIOTECHNOLOGY, INC.

Calgranulin A siRNA (h): sc-43342

BACKGROUND

The family of EF-hand type Ca^{2+}-binding proteins includes Calbindin (previously designated vitamin D-dependent Ca^{2+}-binding protein), S-100 α and β, Calgranulins A (also designated MRP8), B (also designated MRP14) and C (S-100 like proteins) and the parvalbumin family members, including parvalbumin α and parvalbumin β (also designated oncomodulin). Calbindin, S-100 proteins and parvalbumin proteins are each expressed in neural tissues. In addition, S-100 α and β are present in a variety of other tissues and Calbindin is present in intestine and kidney. Parvalbumin α is also found in fast-contracting/relaxing skeletal muscle fibers and parvalbumin β is found in many tumor tissues as well as in the organ of Corti. Calbindin, S-100 proteins and parvalbulmins have all been detected in Leydig cells and the testis. These proteins are thought to play a role in hormone production and spermatogenesis. Calgranulin is expressed in macrophages and epithelial cells.

REFERENCES

1. Pfyffer, G.E., et al. 1987. Developmental and functional studies of parvalbumin and calbindin D28K in hypothalamic neurons grown in serum-free medium. J. Neurochem. 49: 442-451.
2. Heizmann, C.W. 1988. Calcium-binding proteins of the EF-type. J. Cardiovasc. Pharmacol. 5: S30-S37.
3. Kagi, U., et al. 1988. Developmental appearance of the Ca^{2+}-binding proteins parvalbumin, calbindin D-28K, S-100 proteins and calmodulin during testicular development in the rat. Cell Tissue Res. 252: 359-365.
4. Zimmer, D.B., et al. 1991. Isolation of a rat S100 α cDNA and distribution of its mRNA in rat tissues. Brain Res. Bull. 27: 157-162.
5. Rickmann, M., et al. 1995. S100 protein expression in subpopulations of neurons of rat brain. Neuroscience 67: 977-991.
6. Muntener, M., et al. 1995. Increase of skeletal muscle relaxation speed by direct injection of parvalbumin cDNA. Proc. Natl. Acad. Sci. USA 92: 6504-6508.
7. Hitomi, J., et al. 1996. A novel calcium-binding protein in amniotic fluid. CAAF1: its molecular cloning and tissue distribution. J. Cell Sci. 109: 805-815.

CHROMOSOMAL LOCATION

Genetic locus: S100A8 (human) mapping to 1q21.3.

PRODUCT

Calgranulin A 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 Calgranulin A shRNA Plasmid (h): sc-43342-SH and Calgranulin A shRNA (h) Lentiviral Particles: sc-43342-V as alternate gene silencing products.

For independent verification of Calgranulin A (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-43342A, sc-43342B and sc-43342C.

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

Calgranulin A siRNA (h) is recommended for the inhibition of Calgranulin A 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

Calgranulin A (C-10): sc-48352 is recommended as a control antibody for monitoring of Calgranulin A 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 Calgranulin A gene expression knockdown using RT-PCR Primer: Calgranulin A (h)-PR: sc-43342-PR (20 µl, 302 bp). 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.