

Calgranulin B siRNA (h): sc-43344

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 , Calgranulin A (also designated MRP8), Calgranulin B (also designated MRP14) and Calgranulin C (S-100 like protein), 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 parvalbumins have all been detected in leydig cells and testis. These proteins are thought to play a role in hormone production and spermatogenesis. Calgranulin is expressed in macrophages and epithelial cells.

REFERENCES

1. van Heyningen, V., et al. 1985. Tissue localization and chromosomal assignment of a serum protein that tracks the cystic fibrosis gene. *Nature* 315: 513-515.
2. Hayward, C., et al. 1986. Monoclonal antibodies to cystic fibrosis antigen. *J. Immunol. Methods* 91: 117-122.
3. 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.

CHROMOSOMAL LOCATION

Genetic locus: S100A9 (human) mapping to 1q21.3.

PRODUCT

Calgranulin B 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 B shRNA Plasmid (h): sc-43344-SH and Calgranulin B shRNA (h) Lentiviral Particles: sc-43344-V as alternate gene silencing products.

For independent verification of Calgranulin B (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-43344A, sc-43344B and sc-43344C.

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 B siRNA (h) is recommended for the inhibition of Calgranulin B 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 B (B-5): sc-376772 is recommended as a control antibody for monitoring of Calgranulin B 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 λ BP-HRP: sc-516132 or m-IgG λ BP-HRP (Cruz Marker): sc-516132-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 λ BP-FITC: sc-516185 or m-IgG λ BP-PE: sc-516186 (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 B gene expression knockdown using RT-PCR Primer: Calgranulin B (h)-PR: sc-43344-PR (20 μl , 419 bp). Annealing temperature for the primers should be $55-60^{\circ}\text{C}$ and the extension temperature should be $68-72^{\circ}\text{C}$.

SELECT PRODUCT CITATIONS

1. Lee, E.O., et al. 2013. Amyloid- β peptide-induced extracellular S100A9 depletion is associated with decrease of antimicrobial peptide activity in human THP-1 monocytes. *J. Neuroinflammation* 10: 68.
2. Yagnik, G., et al. 2019. Stratifying nonfunctional pituitary adenomas into two groups distinguished by macrophage subtypes. *Oncotarget* 10: 2212-2223.
3. Peng, L., et al. 2020. Memantine displays antimicrobial activity by enhancing *Escherichia coli* pathogen-induced formation of neutrophil extracellular traps. *Front. Cell. Infect. Microbiol.* 10: 47.

RESEARCH USE

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