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SANTA CRUZ BIOTECHNOLOGY, INC.

VILL siRNA (m): sc-155108

BACKGROUND

Caldesmon, Filamin 1, Nebulin and Villin are differentially expressed and regulated Actin binding proteins. Both muscular (CDh) and non-muscular (CDl) forms of Caldesmon have been identified and each has been shown to 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. Filamin 1, which is ubiquitously expressed and exists as a homodimer, functions to crosslink Actin to filaments. Nebulin is a large filamentous protein specific to muscle tissue that may function as a ruler for filament length. Several isoforms of Nebulin are produced by alternative exon usage. Villin is Ca^{2+}-regulated and is the major structural component of the brush border of absorptive cells. The Villin-like protein (VILL) contains 1 HP (headpiece) domain and 6 gelsolin-like repeats. It is ubiquitously expressed and may function as a tumor suppressor.

REFERENCES

1. Weihing, R.R. 1988. Actin-binding and dimerization domains of HeLa cell Filamin. Biochemistry 27: 1865-1869.
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3. Maunoury, R., Robine, S., Pringault, E., Leonard, N., Gaillard, J.A. and Louvard, D. 1992. Developmental regulation of Villin gene expression in the epithelial cell lineages of mouse digestive and urogenital tracts. Development 115: 717-728.
4. Labeit, S. and Kolmerer, B. 1995. The complete primary structure of human Nebulin and its correlation to muscle structure. J. Mol. Biol. 248: 308-315.
5. Huber, P.A., El-Mezgueldi, M., Grabarek, Z., Slatter, D.A., Levine, B.A. and Marston, S.B. 1996. Multiple-sited interaction of caldesmon with Ca^{2+}-Calmodulin. Biochem. J. 316: 413-420.
6. Zhang, J.Q., Luo, G., Herrera, A.H., Paterson, B. and Horowits, R. 1996. cDNA cloning of mouse Nebulin. Evidence that the Nebulin-coding sequence is highly conserved among vertebrates. Eur. J. Biochem. 239: 835-841.

CHROMOSOMAL LOCATION

Genetic locus: Vill (mouse) mapping to 9 F3.

PRODUCT

VILL siRNA (m) is a pool of 2 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 VILL shRNA Plasmid (m): sc-155108-SH and VILL shRNA (m) Lentiviral Particles: sc-155108-V as alternate gene silencing products.

For independent verification of VILL (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-155108A and sc-155108B.

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

VILL siRNA (m) is recommended for the inhibition of VILL 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor VILL gene expression knockdown using RT-PCR Primer: VILL (m)-PR: sc-155108-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.

PROTOCOLS

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