SANTA CRUZ BIOTECHNOLOGY, INC.

H-Caldesmon siRNA (h): sc-43202

BACKGROUND

H-Caldesmon (H-CAD), also designated high molecular weight Caldesmon, Caldesmon isoform 1 and muscular Caldesmon, is found in both smooth and non-smooth muscle cells. Expressed predominantly on thin filaments in smooth muscle, H-Caldesmon is an Actin-interacting and calmodulin-binding protein that regulates cellular contraction, exocytosis, endocytosis, cell movement and cell shape change. Although H-Caldesmon is expressed in smooth muscle tumors of the soft tissue, it is not expressed in myofibroblasts. H-Caldesmon is also useful in differentiating not only smooth muscle tumors from bone tumors with myoid differentiation, but also epithelioid mesothelioma versus lung adenocarcinoma.

REFERENCES

1. Frid, M.G., et al. 1992. Phenotypic changes of human smooth muscle cells during development: late expression of heavy Caldesmon and Calponin. Dev. Biol. 153: 185-193.
2. Watanabe, K., et al. 2000. H-Caldesmon as a specific marker for smooth muscle tumors. Comparison with other smooth muscle markers in bone tumors. Am. J. Clin. Pathol. 113: 663-668.
3. D'Addario, S.F., et al. 2002. H-Caldesmon as a specific marker of smooth muscle cell differentiation in some soft tissue tumors of the skin. J. Cutan. Pathol. 29: 426-429.
4. Koganehira, Y., et al. 2003. Reduced expression of Actin-binding proteins, H-Caldesmon and Calponin h1, in the vascular smooth muscle inside melanoma lesions: an adverse prognostic factor for malignant melanoma. Br. J. Dermatol. 148: 971-980.
5. Magro, G., et al. 2003. H-Caldesmon expression in myofibroblastoma of the breast: evidence supporting the distinction from leiomyoma. Histopathology 42: 233-238.
6. Kalekou, H., et al. 2005. Comparative study of CD34, α-SMA and H-Caldesmon expression in the stroma of gynaecomastia and male breast carcinoma. Histopathology 47: 74-81.

CHROMOSOMAL LOCATION

Genetic locus: CALD1 (human) mapping to 7q33.

PRODUCT

H-Caldesmon 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 H-Caldesmon shRNA Plasmid (h): sc-43202-SH and H-Caldesmon shRNA (h) Lentiviral Particles: sc-43202-V as alternate gene silencing products.

For independent verification of H-Caldesmon (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-43202A, sc-43202B and sc-43202C.

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

H-Caldesmon siRNA (h) is recommended for the inhibition of H-Caldesmon 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

Caldesmon (C21): sc-58700 is recommended as a control antibody for monitoring of H-Caldesmon 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 H-Caldesmon gene expression knockdown using RT-PCR Primer: H-Caldesmon (h)-PR: sc-43202-PR (20 µl, 569 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.