SANTA CRUZ BIOTECHNOLOGY, INC.

Caldesmon (h): 293T Lysate: sc-113847

BACKGROUND

Caldesmon, Filamin 1, Nebulin and Villin are differentially-expressed and -regulated Actin binding proteins. Both muscular and non-muscular forms of Caldesmon have been identified and each has been shown to bind to Actin as well as to calmodulin and Myosin. Alternative splicing of the gene encoding Caldesmon results in five isoforms. Muscular Caldesmon (isoform 1), also designated high molecular weight Caldesmon or H-Caldesmon (H-CAD), is expressed predominantly on thin filaments in smooth muscle. Non-muscular Caldesmon (isoforms 2-5), also designated low molecular weight Caldesmon or L-Caldesmon (L-CAD), 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.

REFERENCES

1. Weihing, R.R. 1988. Actin-binding and dimerization domains of HeLa cell Filamin. Biochemistry 27: 1865-1869.
2. Marston, S., Pinter, K. and Bennett, P. 1992. Caldesmon binds to smooth muscle Myosin and Myosin rod and crosslinks thick filaments to Actin filaments. J. Muscle Res. Cell Motil. 13: 206-218.
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. 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.
6. 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.

CHROMOSOMAL LOCATION

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

PRODUCT

Caldesmon (h): 293T Lysate represents a lysate of human Caldesmon transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

RESEARCH USE

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

APPLICATIONS

Caldesmon (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive Caldesmon antibodies. Recommended use: 10-20 µl per lane.

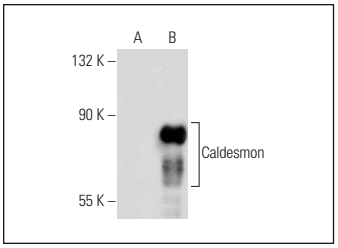
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-tranfected 293T cells.

L-Caldesmon (F-10): sc-25339 is recommended as a positive control antibody for Western Blot analysis of enhanced human Caldesmon expression in Caldesmon transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

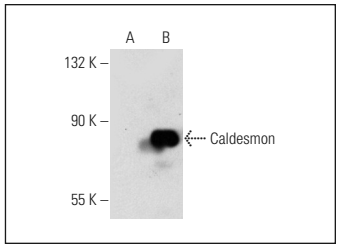
RECOMMENDED SUPPORT REAGENTS

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.

DATA



L-Caldesmon (F-10): sc-25339. Western blot analysis of Caldesmon expression in non-transfected: sc-117752 (**A**) and human Caldesmon transfected: sc-113847 (**B**) 293T whole cell lysates.



Caldesmon (C21): sc-58700. Western blot analysis of Caldesmon expression in non-transfected: sc-117752 (**A**) and human Caldesmon transfected: sc-113847 (**B**) 293T whole cell lysates.

PROTOCOLS

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