

Caldesmon (8): sc-135965

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 Ca²⁺-regulated and is the major structural component of the brush border of absorptive cells.

REFERENCES

- Weihing, R.R. 1988. Actin-binding and dimerization domains of HeLa cell Filamin. *Biochemistry* 27: 1865-1869.
- Marston, S., Pinter, K. and Bennett, P. 1992. Caldesmon binds to smooth muscle Myosin and Myosin ROD and crosslink thick filaments to Actin filaments. *J. Muscle Res. Cell Motil.* 13: 206-218.
- 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.
- 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.
- Zhang, J.Q., Luo, G., Herrera, A.H., Paterson, B. and Horowitz, 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: CALD1 (human) mapping to 7q33; Cald1 (mouse) mapping to 6 B1.

SOURCE

Caldesmon (8) is a mouse monoclonal antibody raised against amino acids 251-395 of L-Caldesmon of human origin.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

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

PRODUCT

Each vial contains 50 µg IgG₁ in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Caldesmon (8) is recommended for detection of H-Caldesmon and L-Caldesmon of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500); not recommended for immunoprecipitation.

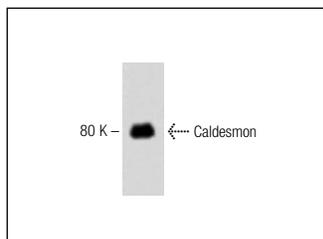
Suitable for use as control antibody for Caldesmon siRNA (h): sc-29880, Caldesmon siRNA (m): sc-29881, Caldesmon shRNA Plasmid (h): sc-29880-SH, Caldesmon shRNA Plasmid (m): sc-29881-SH, Caldesmon shRNA (h) Lentiviral Particles: sc-29880-V and Caldesmon shRNA (m) Lentiviral Particles: sc-29881-V.

Molecular Weight of H-Caldesmon: 90-150 kDa.

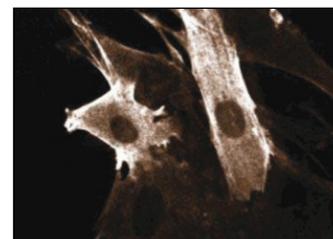
Molecular Weight of L-Caldesmon: 60-80 kDa.

Positive Controls: Caki-1 cell lysate: sc-2224, SK-MEL-28 cell lysate: sc-2236 or HeLa whole cell lysate: sc-2200.

DATA



Caldesmon (8): sc-135965. Western blot analysis of L-Caldesmon expression in Hs68 tissue extract.



Caldesmon (8): sc-135965. Immunofluorescence staining of WI-38 cells showing cytoplasmic and membrane localization.

RESEARCH USE

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