SANTA CRUZ BIOTECHNOLOGY, INC.

L-Caldesmon (F-10): sc-25339

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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., et al. 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., et al. 1992. Developmental regulation of Villin gene expression in the epithelial cell lineages of mouse digestive and urogenital tracts. Development 115: 717-728.

CHROMOSOMAL LOCATION

Genetic locus: CALD1 (human) mapping to 7q33; Cald1 (mouse) mapping to 6 B1.

SOURCE

L-Caldesmon (F-10) is a mouse monoclonal antibody raised against amino acids 494-793 of L-Caldesmon of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

L-Caldesmon (F-10) is available conjugated to agarose (sc-25339 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-25339 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-25339 PE), fluorescein (sc-25339 FITC), Alexa Fluor® 488 (sc-25339 AF488), Alexa Fluor® 546 (sc-25339 AF546), Alexa Fluor® 594 (sc-25339 AF594) or Alexa Fluor® 647 (sc-25339 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-25339 AF680) or Alexa Fluor® 790 (sc-25339 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

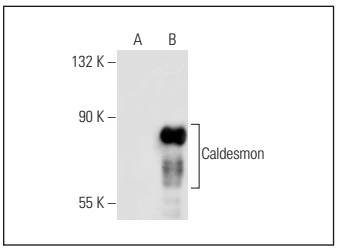
L-Caldesmon (F-10) is recommended for detection of L-Caldesmon of human origin and Caldesmon of mouse and rat origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:500), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for L-Caldesmon siRNA (h): sc-35768, Caldesmon siRNA (m): sc-29881, L-Caldesmon shRNA Plasmid (h): sc-35768-SH, Caldesmon shRNA Plasmid (m): sc-29881-SH, L-Caldesmon shRNA (h) Lentiviral Particles: sc-35768-V and Caldesmon shRNA (m) Lentiviral Particles: sc-29881-V.

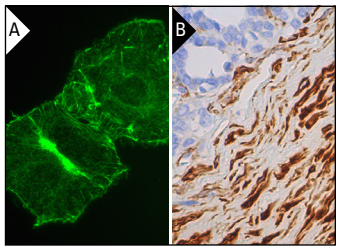
Molecular Weight of L-Caldesmon: 60-80 kDa.

Positive Controls: Caldesmon (h): 293T Lysate: sc-113847, HeLa whole cell lysate: sc-2200 or JAR cell lysate: sc-2276.

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.



L-Caldesmon (F-10): sc-25339. Immunofluorescence staining of formalin-fixed Hep G2 cells showing cytoskeletal localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human seminal vesicle tissue showing cytoplasmic staining of smooth muscle cells (**B**).

SELECT PRODUCT CITATIONS

1. Piccaluga, P.P., et al. 2007. Gene expression analysis of peripheral T cell lymphoma, unspecified, reveals distinct profiles and new potential therapeutic targets. J. Clin. Invest. 117: 823-834.
2. Labriola, L., et al. 2007. Prolactin-induced changes in protein expression in human pancreatic islets. Mol. Cell. Endocrinol. 264: 16-27.
3. Terra, L.F., et al. 2013. Proteins differentially expressed in human β-cells-enriched pancreatic islet cultures and human Insulinomas. Mol. Cell. Endocrinol. 381: 16-25.
4. Elcin, A.E., et al. 2017. Differential gene expression profiling of human adipose stem cells differentiating into smooth muscle-like cells by TGFβ1/BMP4. Exp. Cell Res. 352: 207-217.

STORAGE

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