

CapG (H-9): sc-166428

BACKGROUND

Caldesmon, Filamin 1, Nebulin, Plastin, ADF, Gelsolin, CapG, Dematin and Cofilin are differentially expressed Actin-binding proteins. Both muscular (CDh) and non-muscular (CD1) forms of Caldesmon bind to Actin as well as to calmodulin and myosin. CDh is expressed predominantly on thin filaments in smooth muscle, whereas CD1 is widely expressed in non-muscle tissues and cells. CapG, also designated Actin-regulatory protein and macrophage-capping protein, is a macrophage-specific protein that reversibly blocks the barbed ends of Actin filaments, but does not sever preformed ones. The interactions of CapG with Actin may be important in the regulation of nuclear and cytoplasmic structures. CapG is a calcium-sensitive DNA-binding protein that plays a role in macrophage function. It is expressed in macrophages and macrophage-like cells and can localize both to the nucleus and the cytoplasm.

REFERENCES

1. Dabiri, G.A., et al. 1992. Molecular cloning of human macrophage-capping protein cDNA. A unique member of the Gelsolin/Villin family expressed primarily in macrophages. *J. Biol. Chem.* 267: 16545-16552.
2. Mishra, V.S., et al. 1994. The human Actin-regulatory protein CapG: gene structure and chromosome location. *Genomics* 23: 560-565.
3. Southwick, F.S., et al. 1995. Gain-of-function mutations conferring Actin severing activity to human macrophage CapG. *J. Biol. Chem.* 270: 45-48.

CHROMOSOMAL LOCATION

Genetic locus: CAPG (human) mapping to 2p11.2; Capg (mouse) mapping to 6 C1.

SOURCE

CapG (H-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 308-337 at the C-terminus of CapG of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CapG (H-9) is available conjugated to agarose (sc-166428 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166428 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166428 PE), fluorescein (sc-166428 FITC), Alexa Fluor® 488 (sc-166428 AF488), Alexa Fluor® 546 (sc-166428 AF546), Alexa Fluor® 594 (sc-166428 AF594) or Alexa Fluor® 647 (sc-166428 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166428 AF680) or Alexa Fluor® 790 (sc-166428 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-166428 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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RESEARCH USE

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

APPLICATIONS

CapG (H-9) is recommended for detection of CapG of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

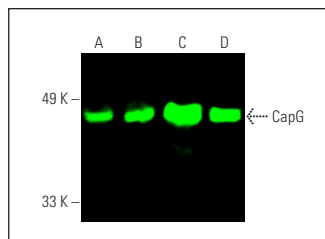
CapG (H-9) is also recommended for detection of CapG in additional species, including equine and porcine.

Suitable for use as control antibody for CapG siRNA (h): sc-44920, CapG siRNA (m): sc-44921, CapG shRNA Plasmid (h): sc-44920-SH, CapG shRNA Plasmid (m): sc-44921-SH, CapG shRNA (h) Lentiviral Particles: sc-44920-V and CapG shRNA (m) Lentiviral Particles: sc-44921-V.

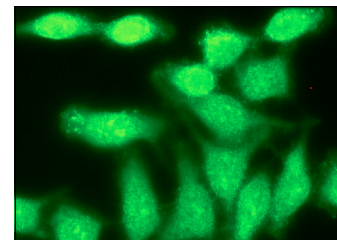
Molecular Weight of CapG: 39 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209, HeLa whole cell lysate: sc-2200 or U-937 cell lysate: sc-2239.

DATA



CapG (H-9): sc-166428. Near-infrared western blot analysis of CapG expression in HL-60 (A), HeLa (B), U-937 (C) and THP-1 (D) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.



CapG (H-9): sc-166428 Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and nuclear localization.

SELECT PRODUCT CITATIONS

1. Huang, S., et al. 2018. CapG enhances breast cancer metastasis by competing with PRMT5 to modulate STC-1 transcription. *Theranostics* 8: 2549-2564.
2. Zhao, Y., et al. 2023. CAPG interference induces apoptosis and ferroptosis in colorectal cancer cells through the P53 pathway. *Mol. Cell. Probes* 71: 101919.
3. Ohkawa, Y., et al. 2023. Involvement of langerin in the protective function of a keratan sulfate-based disaccharide in an emphysema mouse model. *J. Biol. Chem.* 299: 105052.

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.