

CaM (G-3): sc-137079



The Power to Question

BACKGROUND

The level of intracellular calcium is tightly regulated in all eukaryotic cells. A modest increase in this level can result in a myriad of physiological responses, most of which are mediated by calmodulin (CaM), the universal calcium sensor. CaM directly modulates the activity of protein kinases and phosphatases, ion channels and nitric oxide synthetases. It is generally involved in such diverse processes as cell proliferation, endocytosis, cellular adhesion, protein turn over and smooth muscle contraction. CaM (calmodulin) is an acidic protein, 148 amino acids in length, with four helix-loop-helix calcium binding domains. In humans, three distinct genes have been identified (CALM1, CALM2 and CALM3); each encoding the identical protein. CALML3 (calmodulin-like 3, or calmodulin-related protein NB-1) shares significant sequence identity with CaM and it is suggested that it may competitively bind CaM substrates. Interestingly, CaM has been shown to associate with the carboxy terminus of the dystrophin gene product, implying that it may regulate its activity.

SOURCE

CaM (G-3) is a mouse monoclonal antibody raised against amino acids 1-149 representing full length CaM I of human origin.

PRODUCT

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

CaM (G-3) is available conjugated to agarose (sc-137079 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-137079 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-137079 PE), fluorescein (sc-137079 FITC), Alexa Fluor® 488 (sc-137079 AF488), Alexa Fluor® 546 (sc-137079 AF546), Alexa Fluor® 594 (sc-137079 AF594) or Alexa Fluor® 647 (sc-137079 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-137079 AF680) or Alexa Fluor® 790 (sc-137079 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

CaM (G-3) is recommended for detection of calmodulin and CALML3 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).

CaM (G-3) is also recommended for detection of calmodulin and CALML3 in additional species, including equine, canine, bovine, porcine and avian.

Molecular Weight of CaM: 17 kDa.

Positive Controls: CALML3 (h): 293T Lysate: sc-113991, rat brain extract: sc-2392 or rat liver extract: sc-2395.

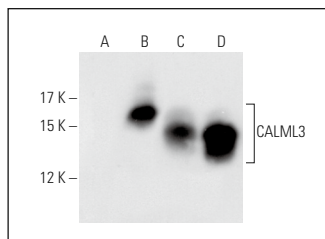
STORAGE

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

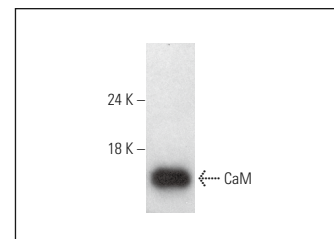
RESEARCH USE

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

DATA



CaM (G-3): sc-137079. Western blot analysis of CALML3 expression in non-transfected: sc-117752 (A) and human CALML3 transfected: sc-113991 (B) 293T whole cell lysates and rat brain (C) and rat liver (D) tissue extracts.



CaM (G-3) HRP: sc-137079 HRP. Direct western blot analysis of CaM expression in rat liver tissue extract.

SELECT PRODUCT CITATIONS

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- Clement, C.C., et al. 2013. Protein expression profiles of human lymph and plasma mapped by 2D-DIGE and 1D SDS-PAGE coupled with nanoLC-ESI-MS/MS bottom-up proteomics. *J. Proteomics* 78: 172-187.
- Cavaretta, J.P., et al. 2014. Polarized axonal surface expression of neuronal KCNQ potassium channels is regulated by calmodulin interaction with KCNQ2 subunit. *PLoS ONE* 9: e103655.
- Haering, C., et al. 2015. Ion transporter NKCC1, modulator of neurogenesis in murine olfactory neurons. *J. Biol. Chem.* 290: 9767-9779.
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- Soni, S., et al. 2018. Biophysical characterization of SG2NA variants and their interaction with DJ-1 and calmodulin *in vitro*. *Cell Biochem. Biophys.* 76: 451-461.
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PROTOCOLS

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