SANTA CRUZ BIOTECHNOLOGY, INC.

CaMKIδ (C-9): sc-374028

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The Ca^{2+}/calmodulin-dependent protein kinases (CaMKs) comprise a structurally related subfamily of serine/threonine kinases. CaMKIδ (Calcium/calmodulin-dependent protein kinase type 1δ), also known as CKLiK or CaMK1, is a 385 amino acid protein that localizes to both the nucleus and the cytoplasm and contains one protein kinase domain. Expressed in a variety of tissues with higher expression in polymorphonuclear leukocytes, CaMKIδ functions to catalyze the ATP-dependent phosphorylation of target proteins and is thought to regulate calcium-mediated granulocyte function via a calcium-triggered signaling cascade. CaMKIδ is activated by CaM, which binds to and induces a conformational change in CaMKIδ, thereby allowing CaMKKα and CaMKKβ to phosphorylate and, subsequently activate CaMKIδ. Nucleotide polymorphisms in the gene encoding CaMKIδ may increase susceptibility to type 2 diabetes. Two isoforms of CaMK1δ exist due to alternative splicing events.

REFERENCES

1. Verploegen, S., et al. 2000. Identification and characterization of CKLiK, a novel granulocyte Ca^{2+}/calmodulin-dependent kinase. Blood 96: 3215-3223.
2. Hook, S.S., et al. 2001. Ca^{2+}/CaM-dependent kinases: from activation to function. Annu. Rev. Pharmacol. Toxicol. 41: 471-505.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607957. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Ishikawa, Y., et al. 2003. Identification and characterization of novel components of a Ca^{2+}/calmodulin-dependent protein kinase cascade in HeLa cells. FEBS Lett. 550: 57-63.
5. Verploegen, S., et al. 2005. Characterization of the role of CaMKI-like kinase (CKLiK) in human granulocyte function. Blood 106: 1076-1083.

CHROMOSOMAL LOCATION

Genetic locus: CAMK1D (human) mapping to 10p13; Camk1d (mouse) mapping to 2 A1.

SOURCE

CaMKIδ (C-9) is a mouse monoclonal antibody raised against amino acids 319-385 mapping at the C-terminus of CaMKIδ 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.

CaMKIδ (C-9) is available conjugated to agarose (sc-374028 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-374028 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374028 PE), fluorescein (sc-374028 FITC), Alexa Fluor® 488 (sc-374028 AF488), Alexa Fluor® 546 (sc-374028 AF546), Alexa Fluor® 594 (sc-374028 AF594) or Alexa Fluor® 647 (sc-374028 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374028 AF680) or Alexa Fluor® 790 (sc-374028 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

CaMKIδ (C-9) is recommended for detection of CaMKIδ 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).

Suitable for use as control antibody for CaMKIδ siRNA (h): sc-90716, CaMKIδ siRNA (m): sc-141991, CaMKIδ shRNA Plasmid (h): sc-90716-SH, CaMKIδ shRNA Plasmid (m): sc-141991-SH, CaMKIδ shRNA (h) Lentiviral Particles: sc-90716-V and CaMKIδ shRNA (m) Lentiviral Particles: sc-141991-V.

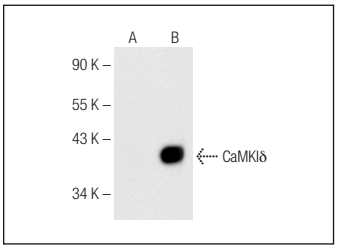
Molecular Weight of CaMKIδ: 40 kDa.

Positive Controls: Daudi cell lysate: sc-2415, C6 whole cell lysate: sc-364373 or CaMKIδ (h3): 293T Lysate: sc-115424.

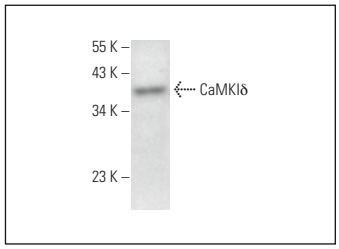
RECOMMENDED SUPPORT REAGENTS

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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



CaMKIδ (C-9): sc-374028. Western blot analysis of CaMKIδ expression in non-transfected: sc-117752 (**A**) and human CaMKIδ transfected: sc-115424 (**B**) 293T whole cell lysates.



CaMKIδ (C-9): sc-374028. Western blot analysis of CaMKIδ expression in C6 whole cell lysate.

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.