SANTA CRUZ BIOTECHNOLOGY, INC.

# CaMKIβ (M-14): sc-131452

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. CaMKIβ ($Ca^{2+}$/calmodulin-dependent protein kinase type 1B), also known as PNCK (pregnancy up-regulated non-ubiquitously expressed CaM kinase) or BSTK3, is a 343 amino acid protein that localizes to both the nucleus and the cytoplasm and contains one protein kinase domain. Existing as multiple alternatively spliced isoforms, CaMKIβ functions to catalyze the ATP-dependent phosphorylation of CaMKI, an event that activates CaMKI activity and may be important for $Ca^{2+}$-triggered signaling cascades within the cell. The gene encoding CaMKIβ maps to human chromosome X, which contains nearly 153 million base pairs and houses over 1,000 genes.

## REFERENCES


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2. Gardner, H.P., Ha, S.I., Reynolds, C. and Chodosh, L.A. 2000. The CaM kinase, Pnck, is spatially and temporally regulated during murine mammary gland development and may identify an epithelial cell subtype involved in breast cancer. Cancer Res. 60: 5571-5577.
3. Gardner, H.P., Rajan, J.V., Ha, S.I., Copeland, N.G., Gilbert, D.J., Jenkins, N.A., Marquis, S.T. and Chodosh, L.A. 2000. Cloning, characterization, and chromosomal localization of Pnck, a $Ca^{2+}$/calmodulin-dependent protein kinase. Genomics 63: 279-288.
4. Hook, S.S. and Means, A.R. 2001. $Ca^{2+}$/CaM-dependent kinases: from activation to function. Annu. Rev. Pharmacol. Toxicol. 41: 471-505.
5. Uboha, N.V., Flajolet, M., Nairn, A.C. and Picciotto, M.R. 2007. A calcium- and calmodulin-dependent kinase Iα/microtubule affinity regulating kinase 2 signaling cascade mediates calcium-dependent neurite outgrowth. J. Neurosci. 27: 4413-4423.
6. Takemoto-Kimura, S., Ageta-Ishihara, N., Nonaka, M., Adachi-Morishima, A., Mano, T., Okamura, M., Fujii, H., Fuse, T., Hoshino, M., Suzuki, S., Kojima, M., Mishina, M., Okuno, H. and Bito, H. 2007. Regulation of dendritogenesis via a lipid-raft-associated $Ca^{2+}$/calmodulin-dependent protein kinase CLICK-III/CaMKIγ. Neuron 54: 755-770.
7. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 300680. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/


## CHROMOSOMAL LOCATION

Genetic locus: Pnck (mouse) mapping to X A7.3.

## SOURCE

CaMKIβ (M-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of CaMKIβ of mouse origin.

## STORAGE

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

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-131452 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

CaMKIβ (M-14) is recommended for detection of CaMKIβ of mouse and rat origin by Western Blotting (starting dilution 1:200, 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); non cross-reactive with other CaMK family members.

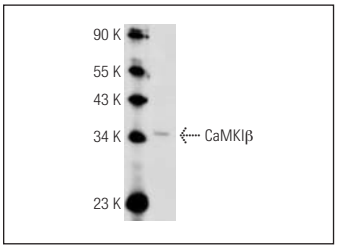
Suitable for use as control antibody for CaMKIβ siRNA (m): sc-141994, CaMKIβ shRNA Plasmid (m): sc-141994-SH and CaMKIβ shRNA (m) Lentiviral Particles: sc-141994-V.

Molecular Weight of CaMKIβ: 38 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA




CaMKIβ (M-14): sc-131452. Western blot analysis of CaMKIβ expression in 293T whole cell lysate.

## RESEARCH USE

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

## PROTOCOLS

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