SANTA CRUZ BIOTECHNOLOGY, INC.

CaMKIIβ (K-19): sc-100366

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The Ca^{2+}/calmodulin-dependent protein kinases (CaM kinases) comprise a structurally related subfamily of serine/threonine kinases which include CaMKI, CaMKII and CaMKIV. CaMKII is an ubiquitously expressed serine/threonine protein kinase that is activated by Ca^{2+} and calmodulin (CaM) and has been implicated in regulation of the cell cycle and transcription. There are four CaMKII isozymes designated α, β, γ and δ, which may or may not be co-expressed in the same tissue type. CaMKIV is stimulated by Ca^{2+} and CaM but phosphorylation by a CaMK is also required for full activation. Stimulation of the T cell receptor CD3 signaling complex with an anti-CD3 monoclonal antibody leads to a 10-40 fold increase in CaMKIV activity. An additional kinase, CaMKK, functions to activate CaMKI through the specific phosphorylation of the regulatory threonine residue at position 177.

CHROMOSOMAL LOCATION

Genetic locus: CAMK2B (human) mapping to 7p13; Camk2b (mouse) mapping to 11 A1.

SOURCE

CaMKIIβ (K-19) is a mouse monoclonal antibody raised against recombinant CaMKIIβ of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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.

APPLICATIONS

CaMKIIβ (K-19) is recommended for detection of CaMKIIβ of mouse, rat and human 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), 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 CaMKIIβ siRNA (h): sc-38951, CaMKIIβ siRNA (m): sc-38952, CaMKIIβ shRNA Plasmid (h): sc-38951-SH, CaMKIIβ shRNA Plasmid (m): sc-38952-SH, CaMKIIβ shRNA (h) Lentiviral Particles: sc-38951-V and CaMKIIβ shRNA (m) Lentiviral Particles: sc-38952-V.

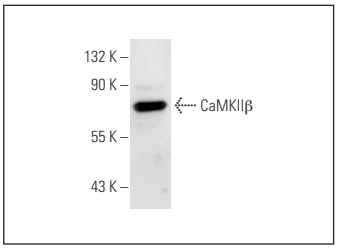
Molecular Weight of CaMKIIβ: 58-64 kDa.

Positive Controls: HeLa nuclear extract: sc-2120 or HeLa whole cell lysate: sc-2200.

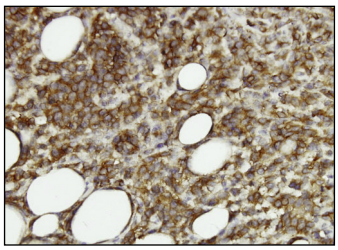
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



CaMKIIβ (K-19): sc-100366. Western blot analysis of CaMKIIβ expression in HeLa whole cell lysate.



CaMKIIβ (K-19): sc-100366. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human malignant lymphoma, diffuse large B-cell tissue showing membrane and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Ferreira, J.S., et al. 2015. GluN2B-containing NMDA receptors regulate AMPA receptor traffic through anchoring of the synaptic proteasome. J. Neurosci. 35: 8462-8479.

RESEARCH USE

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

CONJUGATES

See **CaMKII (G-1): sc-5306** for CaMKII antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.