SANTA CRUZ BIOTECHNOLOGY, INC.

CaMKKβ (L-19): sc-9629

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The Ca^{2+}/calmodulin-dependent protein kinases (CaM kinases) are a structurally related subfamily of serine/threonine kinases that includes CaMKI, CaMKII and CaMKIV. CaMKI and CaMKIV are stimulated by Ca^{2+} and CaM, but phosphorylation by a CaMK is also required for full activation. CaMKKα and CAMKKβ function to activate CaMKI through the specific phosphorylation of the regulatory threonine residue at position 177. CAMKKβ is also capable of phosphorylating CAMKIV on threonine residue 200.

REFERENCES

1. Kitani, T., et al. 1994. cDNA cloning and expression of human calmodulin-dependent protein kinase IV. J. Biochem. 115: 637-640.
2. Haribabu, B., et al. 1995. Human calcium-calmodulin dependent protein kinase I: cDNA cloning, domain structure and activation by phosphorylation at threonine-177 by calcium-calmodulin dependent protein kinase I kinase. EMBO J. 14: 3679-3686.

CHROMOSOMAL LOCATION

Genetic locus: CAMKK2 (human) mapping to 12q24.31; Camkk2 (mouse) mapping to 5 F.

SOURCE

CaMKKβ (L-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of CaMKKβ of rat origin.

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-9629 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CaMKKβ (L-19) is recommended for detection of CaMKKβ 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).

CaMKKβ (L-19) is also recommended for detection of CaMKKβ in additional species, including bovine and porcine.

Suitable for use as control antibody for CaMKKβ siRNA (h): sc-38955, CaMKKβ siRNA (m): sc-38956, CaMKKβ shRNA Plasmid (h): sc-38955-SH, CaMKKβ shRNA Plasmid (m): sc-38956-SH, CaMKKβ shRNA (h) Lentiviral Particles: sc-38955-V and CaMKKβ shRNA (m) Lentiviral Particles: sc-38956-V.

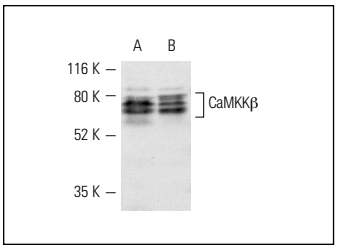
Molecular Weight of CaMKKβ: 66 kDa.

Positive Controls: rat cerebellum extract: sc-2398, mouse brain extract: sc-2253 or IMR-32 cell lysate: sc-2409.

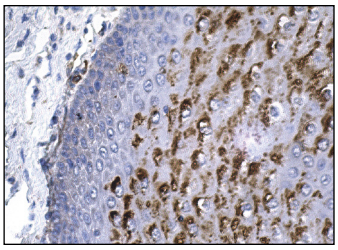
STORAGE

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

DATA



CaMKKβ (L-19): sc-9629. Western blot analysis of CaMKKβ expression in rat cerebellum (**A**) and mouse brain (**B**) tissue extracts.



CaMKKβ (L-19): sc-9629. Immunoperoxidase staining of formalin fixed, paraffin-embedded human esophagus tissue showing cytoplasmic staining of squamous epithelial cells.

SELECT PRODUCT CITATIONS

1. Hawley, S.A., et al. 2005. Calmodulin-dependent protein kinase kinase β is an alternative upstream kinase for AMP-activated protein kinase. Cell Metab. 2: 9-19.
2. Woods, A., et al. 2005. Ca^{2+}/calmodulin-dependent protein kinase kinase-β acts upstream of AMP-activated protein kinase in mammalian cells. Cell Metab. 2: 21-33.
3. Jensen, T.E., et al. 2007. Possible CaMKK-dependent regulation of AMPK phosphorylation and glucose uptake at the onset of mild tetanic skeletal muscle contraction. Am. J. Physiol. Endocrinol. Metab. 292: E1308-E1317.
4. Anderson, K.A., et al. 2008. Hypothalamic CaMKK2 contributes to the regulation of energy balance. Cell Metab. 7: 377-388.
5. Goravanahally, M.P., et al. 2009. Differential gene expression in the bovine corpus luteum during transition from early phase to midphase and its potential role in acquisition of luteolytic sensitivity to prostaglandin F2 α. Biol. Reprod. 80: 980-988.
6. Olianas, M.C., et al. 2012. δ-Opioid receptors stimulate the metabolic sensor AMP-activated protein kinase through coincident signaling with $G_{q/11}$-coupled receptors. Mol. Pharmacol. 81: 154-165.

RESEARCH USE

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