

CaMKI (M-20): sc-1544

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 a 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 coexpressed in the same tissue type. CaMKIV is stimulated by Ca^{2+} and CaM but also requires phosphorylation by a CaMK 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.

REFERENCES

1. Tombes, R.M., et al. 1995. G_1 cell cycle arrest apoptosis are induced in NIH 3T3 cells by KN-93, an inhibitor of CaMK-II (the multifunctional Ca^{2+} /CaM kinase). *Cell Growth Differ.* 6: 1063-1070.
2. Baltas, L.G., et al. 1995. The cardiac sarcoplasmic reticulum phospholamban kinase is a distinct d-CaM kinase isozyme. *FEBS Lett.* 373: 71-75.

CHROMOSOMAL LOCATION

Genetic locus: CAMK1 (human) mapping to 3p25.3; Camk1 (mouse) mapping to 6 E3.

SOURCE

CaMKI (M-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of CaMKI of mouse origin.

PRODUCT

Each vial contains 100 μg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-1544 P, (100 μg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CaMKI (M-20) is recommended for detection of CaMKI of mouse, rat and, to a lesser extent, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for CaMKI siRNA (h): sc-38947, CaMKI siRNA (m): sc-38948, CaMKI shRNA Plasmid (h): sc-38947-SH, CaMKI shRNA Plasmid (m): sc-38948-SH, CaMKI shRNA (h) Lentiviral Particles: sc-38947-V and CaMKI shRNA (m) Lentiviral Particles: sc-38948-V.

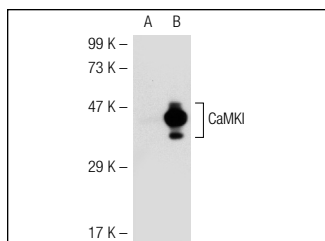
Molecular Weight of CaMKI: 41 kDa.

Positive Controls: CaMKI (m): 293T Lysate: sc-118979 or mouse brain extract: sc-2253.

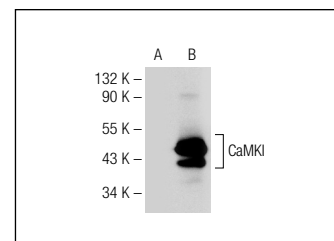
RECOMMENDED SECONDARY REAGENTS

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



CaMKI (M-20): sc-1544. Western blot analysis of CaMKI expression in non-transfected: sc-117752 (A) and mouse CaMKI transfected: sc-118979 (B) 293T whole cell lysates.



CaMKI (M-20): sc-1544. Western blot analysis of CaMKI expression in non-transfected: sc-117752 (A) and human CaMKI transfected: sc-177014 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Francis, H., et al. 2008. Small mouse cholangiocytes proliferate in response to H1 histamine receptor stimulation by activation of the IP3/CaMK I/CREB pathway. *Am. J. Physiol., Cell Physiol.* 295: C499-C513.
2. Kapeta, S., et al. 2010. Nuclear erythroid factor 2-mediated proteasome activation delays senescence in human fibroblasts. *J. Biol. Chem.* 285: 8171-8184.

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.

PROTOCOLS

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

MONOS
Satisfaction
Guaranteed

Try **CaMKI (H-8): sc-137225** or **CaMKI (D-9): sc-377418**, our highly recommended monoclonal alternatives to CaMKI (M-20).