

CaMKK β (C-11): sc-271674

BACKGROUND

The Ca²⁺/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 Ca²⁺ and CaM, but phosphorylation by a CaMK is also required for full activation. CaMKK α and CaMKK β function to activate CaMKI through the specific phosphorylation of the regulatory threonine residue at position 177. CaMKK β 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. Tombes, R.M., et al. 1995. G₁ cell cycle arrest apoptosis are induced in NIH/3T3 cells by KN-93, an inhibitor of CaMKII (the multifunctional Ca²⁺/CaM kinase). *Cell Growth Differ.* 6: 1063-1070.

CHROMOSOMAL LOCATION

Genetic locus: CAMKK2 (human) mapping to 12q24.31.

SOURCE

CaMKK β (C-11) is a mouse monoclonal antibody raised against amino acids 1-95 mapping at the N-terminus of CaMKK β of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CaMKK β (C-11) is available conjugated to agarose (sc-271674 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271674 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271674 PE), fluorescein (sc-271674 FITC), Alexa Fluor[®] 488 (sc-271674 AF488), Alexa Fluor[®] 546 (sc-271674 AF546), Alexa Fluor[®] 594 (sc-271674 AF594) or Alexa Fluor[®] 647 (sc-271674 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-271674 AF680) or Alexa Fluor[®] 790 (sc-271674 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

CaMKK β (C-11) is recommended for detection of CaMKK β of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 CaMKK β siRNA (h): sc-38955, CaMKK β shRNA Plasmid (h): sc-38955-SH and CaMKK β shRNA (h) Lentiviral Particles: sc-38955-V.

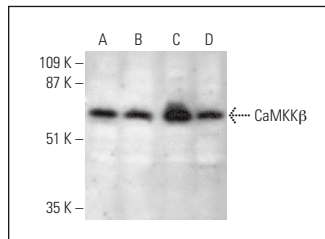
Molecular Weight of CaMKK β : 66 kDa.

Positive Controls: IMR-32 cell lysate: sc-2409, T98G cell lysate: sc-2294 or U-87 MG cell lysate: sc-2411.

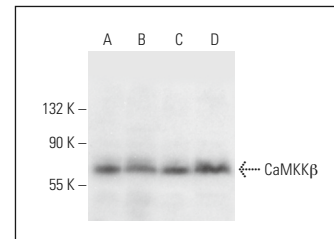
STORAGE

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

DATA



CaMKK β (C-11) HRP: sc-271674 HRP. Direct western blot analysis of CaMKK β expression in SK-N-SH (A), T98G (B), IMR-32 (C) and THP-1 (D) whole cell lysates.



CaMKK β (C-11): sc-271674. Western blot analysis of CaMKK β expression in H4 (A), SK-N-SH (B), T98G (C) and U-87 MG (D) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Pang, J., et al. 2019. Mitochondrial ALDH2 protects against lipopolysaccharide-induced myocardial contractile dysfunction by suppression of ER stress and autophagy. *Biochim. Biophys. Acta Mol. Basis Dis.* 1865: 1627-1641.
2. Li, S., et al. 2019. Ca²⁺-stimulated AMPK-dependent phosphorylation of Exo1 protects stressed replication forks from aberrant resection. *Mol. Cell* 74: 1123-1137.e6.
3. Zhao, Y., et al. 2019. Brosimone I, an isoprenoid-substituted flavonoid, induces cell cycle G₁ phase arrest and apoptosis through Ros-dependent endoplasmic reticulum stress in HCT116 human colon cancer cells. *Food Funct.* 10: 2729-2738.
4. Cairns, J., et al. 2020. CDC25B partners with PP2A to induce AMPK activation and tumor suppression in triple negative breast cancer. *NAR Cancer* 2: zcaa039.
5. Han, J.H., et al. 2022. Snail acetylation by autophagy-derived acetyl-coenzyme A promotes invasion and metastasis of KRAS-LKB1 co-mutated lung cancer cells. *Cancer Commun.* 42: 716-749.
6. Zheng, Y.D., et al. 2023. Bufalin induces apoptosis and autophagy via the Ca²⁺/CaMKK β /AMPK/Beclin1 signaling pathway in osteosarcoma cells. *Cell Biol. Int.* 47: 1344-1353.
7. Li, J., et al. 2023. Temperature elevation during semen delivery deteriorates boar sperm quality by promoting apoptosis. *Animals* 13: 3203.

RESEARCH USE

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

PROTOCOLS

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