

CaMKK β (ZZ9): sc-100364

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.

CHROMOSOMAL LOCATION

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

SOURCE

CaMKK β (ZZ9) is a mouse monoclonal antibody raised against recombinant CaMKK β of human origin.

PRODUCT

Each vial contains 100 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

CaMKK β (ZZ9) is recommended for detection of CaMKK β of human and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)] 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 whole cell lysate: sc-2409, rat cerebellum extract: sc-2398 or CaMKK β (h2): 293T Lysate: sc-170459.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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).

STORAGE

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

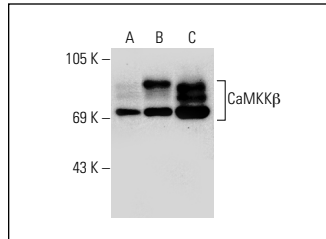
PROTOCOLS

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

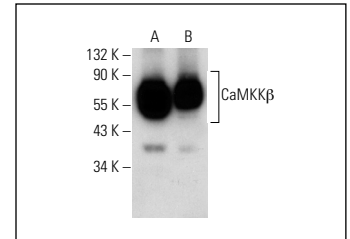
RESEARCH USE

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

DATA



CaMKK β (ZZ9): sc-100364. Western blot analysis of CaMKK β expression in non-transfected 293T: sc-117752 (A), human CaMKK β transfected 293T: sc-170459 (B) and IMR-32 (C) whole cell lysates.



CaMKK β (ZZ9): sc-100364. Western blot analysis of CaMKK β expression in IMR-32 whole cell lysate (A) and rat cerebellum tissue extract (B).

SELECT PRODUCT CITATIONS

- Cao, W., et al. 2011. Differential effects of PKA-controlled CaMKK2 variants on neuronal differentiation. *RNA Biol.* 8: 1061-1072.
- Li, D.D., et al. 2012. The inhibition of autophagy sensitises colon cancer cells with wild-type p53 but not mutant p53 to topotecan treatment. *PLoS ONE* 7: e45058.
- Hurtado-Carneiro, V., et al. 2013. PAS kinase as a nutrient sensor in neuroblastoma and hypothalamic cells required for the normal expression and activity of other cellular nutrient and energy sensors. *Mol. Neurobiol.* 48: 904-920.
- Zhang, L., et al. 2015. Novel role for TRPC4 in regulation of macroautophagy by a small molecule in vascular endothelial cells. *Biochim. Biophys. Acta* 1853: 377-387.
- Liu, L., et al. 2016. Suppression of calcium-sensing receptor ameliorates cardiac hypertrophy through inhibition of autophagy. *Mol. Med. Rep.* 14: 111-120.
- Han, F., et al. 2018. The critical role of AMPK in driving Akt activation under stress, tumorigenesis and drug resistance. *Nat. Commun.* 9: 4728.
- Zhang, Z., et al. 2019. TLR4 counteracts BVRA signaling in human leukocytes via differential regulation of AMPK, mTORC1 and mTORC2. *Sci. Rep.* 9: 7020.
- Sabbir, M.G. 2020. CAMKK2-CAMK4 signaling regulates transferrin trafficking, turnover, and iron homeostasis. *Cell Commun. Signal.* 18: 80.
- Sabbir, M.G., et al. 2021. CAMKK2 regulates mitochondrial function by controlling succinate dehydrogenase expression, post-translational modification, megacomplex assembly, and activity in a cell-type-specific manner. *Cell Commun. Signal.* 19: 98.

CONJUGATES

See **CaMKK β (C-11): sc-271674** for CaMKK β antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.