

CaMKIIN1 (D-14): sc-161427

BACKGROUND

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. CaMKIIN1 (calcium/calmodulin-dependent protein kinase II inhibitor 1), also known as PRO1489, is a 78 amino acid protein that localizes to the cell junction and the synapse. Functioning as a potent and specific inhibitor of CaMKII, CaMKIIN1 interacts with CaMKII β and, via this interaction, plays an important role in cell cycle regulation and transcription control. The gene encoding CaMKIIN1 maps to human chromosome 1, which houses over 1,100 genes, including a chemokine receptor (CKR) gene cluster and a variety of human cancer-related gene loci.

REFERENCES

1. Nairn, A.C. and Picciotto, M.R. 1994. Calcium/calmodulin-dependent protein kinases. *Semin. Cancer Biol.* 5: 295-303.
2. Chang, B.H., et al. 1998. Characterization of a calmodulin kinase II inhibitor protein in brain. *Proc. Natl. Acad. Sci. USA* 95: 10890-10895.
3. Zhang, J., et al. 2001. Molecular cloning and characterization of a novel calcium/calmodulin-dependent protein kinase II inhibitor from human dendritic cells. *Biochem. Biophys. Res. Commun.* 285: 229-234.
4. Chang, B.H., et al. 2001. Calcium/calmodulin-dependent protein kinase II inhibitor protein: localization of isoforms in rat brain. *Neuroscience* 102: 767-777.
5. Meng, F., et al. 2003. Autophosphorylated calcium/calmodulin-dependent protein kinase II α (CaMKII α) reversibly targets to and phosphorylates N-methyl-D-aspartate receptor subunit 2B (NR2B) in cerebral ischemia and reperfusion in hippocampus of rats. *Brain Res.* 967: 161-169.
6. Shimazaki, A., et al. 2006. Calcium/calmodulin-dependent protein kinase II in human articular chondrocytes. *Biorheology* 43: 223-233.
7. Wang, C., et al. 2008. A novel endogenous human CaMKII inhibitory protein suppresses tumor growth by inducing cell cycle arrest via p27 stabilization. *J. Biol. Chem.* 283: 11565-11574.
8. Loweth, J.A., et al. 2008. Inhibition of CaMKII in the nucleus accumbens shell decreases enhanced amphetamine intake in sensitized rats. *Neurosci. Lett.* 444: 157-160.

CHROMOSOMAL LOCATION

Genetic locus: CAMK2N1 (human) mapping to 1p36.12; Camk2n1 (mouse) mapping to 4 D3.

SOURCE

CaMKIIN1 (D-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of CaMKIIN1 of human origin.

STORAGE

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

PRODUCT

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

Blocking peptide available for competition studies, sc-161427 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CaMKIIN1 (D-14) is recommended for detection of CaMKIIN1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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); non cross-reactive with CaMKIIN2.

CaMKIIN1 (D-14) is also recommended for detection of CaMKIIN1 in additional species, including bovine and porcine.

Suitable for use as control antibody for CaMKIIN1 siRNA (h): sc-78843, CaMKIIN1 siRNA (m): sc-141992, CaMKIIN1 shRNA Plasmid (h): sc-78843-SH, CaMKIIN1 shRNA Plasmid (m): sc-141992-SH, CaMKIIN1 shRNA (h) Lentiviral Particles: sc-78843-V and CaMKIIN1 shRNA (m) Lentiviral Particles: sc-141992-V.

Molecular Weight of CaMKIIN1: 9 kDa.

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) 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.

SELECT PRODUCT CITATIONS

1. Häfner, N., et al. 2015. RUNX3 and CAMK2N1 hypermethylation as prognostic marker for epithelial ovarian cancer. *International journal of cancer.* *Int. J. Cancer.* E-published.

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.