SANTA CRUZ BIOTECHNOLOGY, INC.

cGKIα/β (G-3): sc-271766

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

cGKI (cGMP-dependent protein kinase type I), also known as PRKG1, lowers the intracellular level of calcium and is important for the relaxation of vascular smooth muscle. cGKI exists as two alternatively spliced isoforms, designated α and β, which differ only in their N-terminal sequence and function to catalyze the phosphorylation of target proteins. The cGKIα/β precursor contains one protein kinase domain, one AGC-kinase C-terminal domain and two cyclic nucleotide-binding domains. cGKII (cGMP-dependent protein kinase type II), a protein that is related to cGKI, is a major receptor of intracellular cGMP that mediates a plethora of physiological responses. cGKII contains a conserved leucine zipper motif at the amino terminus and is expressed in small intestine, colon, prostate and human brain tissue. cGKII has been shown to regulate the ion transport system in the intestine. Myristoylation of the penultimate glycine in cGKII appears to be essential for directing cGKII to the membrane, since cGKII is devoid of any hydrophobic transmembrane domains.

REFERENCES

1. Gamm, D.M., et al. 1995. The type II isoform of cGMP-dependent protein kinase is dimeric and possesses regulatory and catalytic properties distinct from the type I isoforms. J. Biol. Chem. 270: 27380-27388.
2. Tamura, N., et al. 1996. cDNA cloning and gene expression of human type Iα cGMP-dependent protein kinase. Hypertension 27: 552-557.
3. Vaandrager, A.B., et al. 1996. Signalling by cGMP-dependent protein kinases. Mol. Cell. Biochem. 157: 23-30.

CHROMOSOMAL LOCATION

Genetic locus: PRKG1 (human) mapping to 10q11.23; Prkg1 (mouse) mapping to 19 C1.

SOURCE

cGKIα/β (G-3) is a mouse monoclonal antibody raised against amino acids 191-290 mapping within an internal region of cGKIα/β of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

cGKIα/β (G-3) is available conjugated to agarose (sc-271766 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-271766 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271766 PE), fluorescein (sc-271766 FITC), Alexa Fluor® 488 (sc-271766 AF488), Alexa Fluor® 546 (sc-271766 AF546), Alexa Fluor® 594 (sc-271766 AF594) or Alexa Fluor® 647 (sc-271766 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271766 AF680) or Alexa Fluor® 790 (sc-271766 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

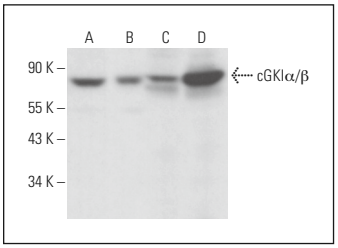
cGKIα/β (G-3) is recommended for detection of cGKIα/β of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 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 cGKIα/β siRNA (h): sc-35059, cGKIα/β siRNA (m): sc-35060, cGKIα/β siRNA (r): sc-270330, cGKIα/β shRNA Plasmid (h): sc-35059-SH, cGKIα/β shRNA Plasmid (m): sc-35060-SH, cGKIα/β shRNA Plasmid (r): sc-270330-SH, cGKIα/β shRNA (h) Lentiviral Particles: sc-35059-V, cGKIα/β shRNA (m) Lentiviral Particles: sc-35060-V and cGKIα/β shRNA (r) Lentiviral Particles: sc-270330-V.

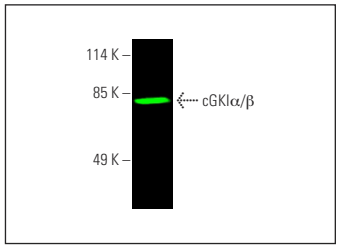
Molecular Weight of cGKIα/β: 75 kDa.

Positive Controls: rat cerebellum extract: sc-2398, mouse brain extract: sc-2253 or Sol8 cell lysate: sc-2249.

DATA



cGKIα/β (G-3): sc-271766. Western blot analysis of cGKIα/β expression in Sol8 (**A**) and C6 (**B**) whole cell lysates and mouse brain (**C**) and rat cerebellum (**D**) tissue extracts.



cGKIα/β (G-3): sc-271766. Near-infrared western blot analysis of cGKIα/β expression in rat cerebellum tissue extract. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.

SELECT PRODUCT CITATIONS

1. Aires, R.S., et al. 2020. NO mediates the effect of the synthetic natriuretic peptide NPCdc on kidney and aorta in nephrectomised rats. Eur. J. Pharmacol. 866: 172780.
2. Hankey, W., et al. 2020. Prostate cancer cell phenotypes remain stable following PDE5 inhibition in the clinically relevant range. Transl. Oncol. 13: 100797.
3. Koehler, K., et al. 2020. Homozygous mutation in murine retrovirus integration site 1 gene associated with a non-syndromic form of isolated familial achalasia. Neurogastroenterol. Motil. 32: e13923.
4. Das, S., et al. 2020. Depletion of cyclic-GMP levels and inhibition of cGMP-dependent protein kinase activate $p21^{Cip1}$/$p27^{Kip1}$ pathways and lead to renal fibrosis and dysfunction. FASEB J. 34: 11925-11943.
5. Xie, S., et al. 2021. miR-1307 promotes hepatocarcinogenesis by CALR-OSTC-endoplasmic reticulum protein folding pathway. iScience 24: 103271.

RESEARCH USE

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