SANTA CRUZ BIOTECHNOLOGY, INC.

cGKIα/β (E-1): sc-271765

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.
4. Orstavik, S., et al. 1997. Characterization of the human gene encoding the type I α and type I β cGMP-dependent protein kinase (PRKG1). Genomics 42: 311-318.
5. Surks, H.K., et al. 1999. Regulation of myosin phosphatase by a specific interaction with cGMP-dependent protein kinase Iα. Science 286: 1583-1587.
6. Francis, S.H., et al. 1999. Cyclic nucleotide-dependent protein kinases: intracellular receptors for cAMP and cGMP action. Crit. Rev. Clin. Lab. Sci. 36: 275-328.
7. Ruth, P. 1999. Cyclic GMP-dependent protein kinases: understanding *in vivo* functions by gene targeting. Pharmacol. Ther. 82: 355-372.

CHROMOSOMAL LOCATION

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

SOURCE

cGKIα/β (E-1) 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_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

cGKIα/β (E-1) 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 shRNA Plasmid (h): sc-35059-SH, cGKIα/β shRNA Plasmid (m): sc-35060-SH, cGKIα/β shRNA (h) Lentiviral Particles: sc-35059-V and cGKIα/β shRNA (m) Lentiviral Particles: sc-35060-V.

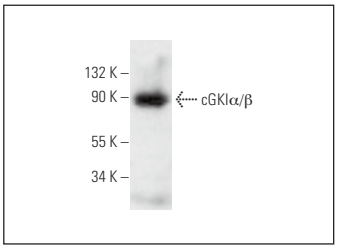
Molecular Weight of cGKIα/β: 75 kDa.

Positive Controls: HISM cell lysate: sc-2229, mouse brain extract: sc-2253 or NIH/3T3 whole cell lysate: sc-2210.

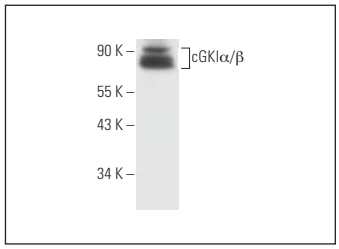
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



cGKIα/β (E-1): sc-271765. Western blot analysis of cGKIα/β expression in HISM whole cell lysate.



cGKIα/β (E-1): sc-271765. Western blot analysis of cGKIα/β expression in mouse brain tissue extract.

SELECT PRODUCT CITATIONS

1. Gong, Y., et al. 2014. Inhibition of phosphodiesterase 5 reduces bone mass by suppression of canonical Wnt signaling. Cell Death Dis. 5: e1544.

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.