

cGKI α (F-5): sc-393987

The Power to Question

BACKGROUND

cGKII (cGMP-dependent protein kinase type II) is a major receptor of intracellular cGMP, and mediates a plethora of physiological responses. cGKII contains a conserved leucine zipper motif at the amino-terminus. It is expressed in small intestine, colon, prostate, and human brain tissues, and the cGKII gene maps to chromosome 4q21.1. 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. The translocation of cGKII from the cytosol to the membrane allows it to function properly in regulating intestinal ion transport. cGMP-dependent protein kinase 1 (cGKI) lowers the intracellular level of calcium and is therefore considered important for the relaxation of vascular smooth muscle. There are two isoforms of cGKI, α and β , which differ only in their N-terminal sequence.

REFERENCES

- 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.
- Tamura, N., et al. 1996. cDNA cloning and gene expression of human type I α cGMP-dependent protein kinase. *Hypertension* 27: 552-557.
- Vaandrager, A.B., et al. 1996. Signalling by cGMP-dependent protein kinases. *Mol. Cell. Biochem.* 157: 23-30.
- 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.
- 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.

CHROMOSOMAL LOCATION

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

SOURCE

cGKI α (F-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 62-89 within an internal region of cGKI α of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-393987 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

cGKI α (F-5) is recommended for detection of cGKI α of mouse, rat and 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).

cGKI α (F-5) is also recommended for detection of cGKI α in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for cGKI α / β siRNA (h): sc-35059, GRF-1 siRNA (m): sc-41706, cGKI α / β shRNA Plasmid (h): sc-35059-SH, GRF-1 shRNA Plasmid (m): sc-41706-SH, cGKI α / β shRNA (h) Lentiviral Particles: sc-35059-V and GRF-1 shRNA (m) Lentiviral Particles: sc-41706-V.

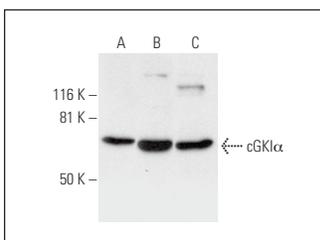
Molecular Weight of cGKI α : 75 kDa.

Positive Controls: SK-N-MC cell lysate: sc-2237, U-251-MG whole cell lysates: sc-364176 or HISM cell lysate: sc-2229.

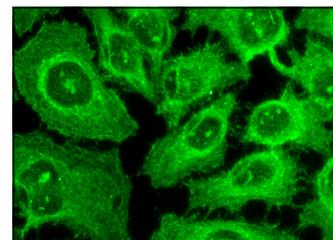
RECOMMENDED SUPPORT REAGENTS

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 L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ 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



cGKI α (F-5): sc-393987. Western blot analysis of cGKI α expression in HISM (A), SK-N-MC (B) and U-251-MG (C) whole cell lysates.



cGKI α (F-5): sc-393987. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic, membrane and nuclear localization.

SELECT PRODUCT CITATIONS

- Qin, L., et al. 2021. Chlorogenic acid alleviates hyperglycemia-induced cardiac fibrosis through activation of the NO/cGMP/PKG pathway in cardiac fibroblasts. *Mol. Nutr. Food Res.* 65: e2000810.

RESEARCH USE

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