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cGKII Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP8001a

Product Information

Application	WB, IHC-P, E
Primary Accession	Q13237
Reactivity	Human, Rat, Mouse
Predicted	Bovine, Canine, Rabbit
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	87432
Antigen Region	714-744

Additional Information

Gene ID	5593
Other Names	cGMP-dependent protein kinase 2, cGK 2, cGK2, cGMP-dependent protein kinase II, cGKII, PRKG2, PRKGR2
Target/Specificity	This cGKII antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 714-744 amino acids from the C-terminal region of human cGKII.
Dilution	WB~~1:1000 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.05% (V/V) Proclin 300. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	cGKII Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PRKG2
Synonyms	PRKGR2
Function	Crucial regulator of intestinal secretion and bone growth. Phosphorylates and activates CFTR on the plasma membrane. Plays a key role in intestinal

secretion by regulating cGMP-dependent translocation of CFTR in jejunum (PubMed:33106379). Acts downstream of NMDAR to activate the plasma membrane accumulation of GRIA1/GLUR1 in synapse and increase synaptic plasticity. Phosphorylates GRIA1/GLUR1 at Ser-863 (By similarity). Acts as a regulator of gene expression and activator of the extracellular signal-regulated kinases MAPK3/ERK1 and MAPK1/ERK2 in mechanically stimulated osteoblasts. Under fluid shear stress, mediates ERK activation and subsequent induction of FOS, FOSL1/FRA1, FOSL2/FRA2 and FOSB that play a key role in the osteoblast anabolic response to mechanical stimulation (By similarity).

Cellular Location Apical cell membrane; Lipid-anchor

Tissue Location Highly concentrated in brain, lung and intestinal mucosa

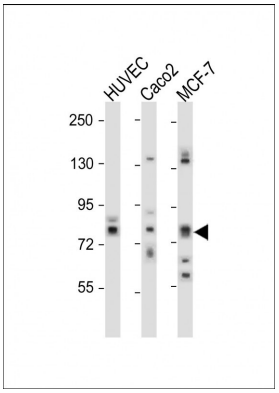
Background

cGKII is thought to play a key role in a diverse set of physiological pathway. cGKII may mediate intestinal secretion of water and electrolytes induced by the E. coli toxin STa and the intestinal peptide guanylin. Edentification of the pathway that mediates intestinal fluid secretion by E. coli STa has potential medical implications because STa causes traveler's diarrhea and about 50% of infant mortality in developing countries. Transfection experiments in human cells disclose that cGKII phosphorylates SOX9 and attenuates SOX9 function by inhibiting its nuclear entry. Impaired differentiation of cultured KMI chondrocytes can be restored by silencing Sox9 by RNA interference. cGKII is postulated to be a molecular switch that couples the cessation of proliferation and the start of hypertrophic chondrocyte differentiation through attenuating SOX9 function.

References

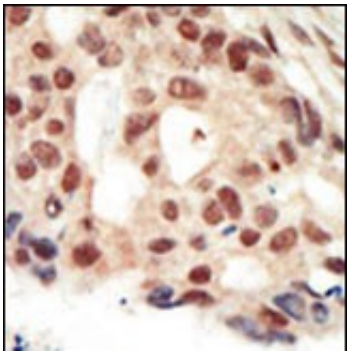
Vaandrager, A.B., et al., J. Biol. Chem. 278(31):28651-28658 (2003).
Gambaryan, S., et al., Biochem. Biophys. Res. Commun. 293(5):1438-1444 (2002).
Orstavik, S., et al., Biochem. Biophys. Res. Commun. 220(3):759-765 (1996).
Fujii, M., et al., FEBS Lett. 375(3):263-267 (1995).

Images



All lanes : Anti-cGKII Antibody (C-term) at 1:1000 dilution Lane 1: HUVEC whole cell lysate Lane 2: Caco2 whole cell lysate Lane 3: MCF-7 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 87 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by AEC staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.



Citations

- Type II cGMP-dependent protein kinase mediates osteoblast mechanotransduction.
- Nitric oxide/cyclic guanosine monophosphate inducers sodium nitroprusside and L-arginine inhibit the proliferation of gastric cancer cells via the activation of type II cyclic guanosine monophosphate-dependent protein kinase.
- Type II cyclic guanosine monophosphate-dependent protein kinase inhibits epidermal growth factor receptor activation in different cancer cell lines.
- Type II cGMP-dependent protein kinase directly inhibits HER2 activation of gastric cancer cells.
- PKG II effectively reversed EGF-induced protein expression alterations in human gastric cancer cell lines.
- The constitutively active PKG II mutant effectively inhibits gastric cancer development a blockade of EGF/EGFR-associated signalling cascades.
- Protein Kinases Type II (PKG II) Combined with L-Arginine Significantly Ameliorated Xenograft Tumor Development: Is L-Arginine a Potential Alternative in PKG II Activation?
- PKG II inhibits PDGF-BB triggered biological activities by phosphorylating PDGFRβ in gastric cancer cells.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.