




## Product datasheet

# Anti-cGKI antibody ab110124

[2 References](#) [4 Images](#)

### Overview

<b>Product name</b>	Anti-cGKI antibody
<b>Description</b>	Rabbit polyclonal to cGKI
<b>Host species</b>	Rabbit
<b>Tested applications</b>	<b>Suitable for:</b> WB, IHC-P
<b>Species reactivity</b>	<b>Reacts with:</b> Mouse, Rat, Human <b>Predicted to work with:</b> Pig 
<b>Immunogen</b>	Synthetic peptide corresponding to Human cGKI aa 650-750 conjugated to keyhole limpet haemocyanin. Database link: <a href="#">Q13976</a> <div>  <a href="#">Run BLAST with</a>  <a href="#">Run BLAST with</a> </div>
<b>Positive control</b>	IHC-P: Human small intestine, prostate and testis tissues WB: Mouse brain tissue extract, rat brain tissue extract, EKS4 cell lysate and H S67 cell lysate
<b>General notes</b>	<p>The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing.</p> <p>If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&amp;As</p>

### Properties

<b>Form</b>	Liquid
<b>Storage instructions</b>	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term.
<b>Storage buffer</b>	pH: 7.20 Preservative: 0.09% Sodium azide Constituents: PBS, 50% Glycerol
<b>Purity</b>	Protein A purified
<b>Clonality</b>	Polyclonal
<b>Isotype</b>	IgG

## Applications

### The Abpromise guarantee

Our **Abpromise guarantee** covers the use of ab110124 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
WB		1/1000. Predicted molecular weight: 87 kDa.
IHC-P		Use a concentration of 10 µg/ml. ab110124 was validated for use in Immunohistochemistry on a panel of 21 formalin fixed, paraffin embedded Human tissues after heat induced antigen retrieval in pH 6.0 citrate buffer. After incubation with the primary antibody, slides were incubated with biotinylated secondary antibody, followed by alkaline phosphatase-streptavidin and chromogen. The stained slides were evaluated by a pathologist to confirm

## Target

### Function

Serine/threonine protein kinase that acts as key mediator of the nitric oxide (NO)/cGMP signaling pathway. GMP binding activates PRKG1, which phosphorylates serines and threonines on many cellular proteins. Numerous protein targets for PRKG1 phosphorylation are implicated in modulating cellular calcium, but the contribution of each of these targets may vary substantially among cell types. Proteins that are phosphorylated by PRKG1 regulate platelet activation and adhesion, smooth muscle contraction, cardiac function, gene expression, feedback of the NO-signaling pathway, and other processes involved in several aspects of the CNS like axon guidance, hippocampal and cerebellar learning, circadian rhythm and nociception. Smooth muscle relaxation is mediated through lowering of intracellular free calcium, by desensitization of contractile proteins to calcium, and by decrease in the contractile state of smooth muscle or in platelet activation. Regulates intracellular calcium levels via several pathways: phosphorylates MRV1/IRAG and inhibits IP3-induced Ca(2+) release from intracellular stores, phosphorylation of KCNMA1 (BKCa) channels decreases intracellular Ca(2+) levels, which leads to increased opening of this channel. PRKG1 phosphorylates the canonical transient receptor potential channel (TRPC) family which inactivates the associated inward calcium current. Another mode of action of NO/cGMP/PKG1 signaling involves PKG1-mediated inactivation of the Ras homolog gene family member A (RhoA). Phosphorylation of RHOA by PRKG1 blocks the action of this protein in myriad processes: regulation of RHOA translocation; decreasing contraction; controlling vesicle trafficking, reduction of myosin light chain phosphorylation resulting in vasorelaxation. Activation of PRKG1 by NO signaling alters also gene expression in a number of tissues. In smooth muscle cells, increased cGMP and PRKG1 activity influence expression of smooth muscle-specific contractile proteins, levels of proteins in the NO/cGMP signaling pathway, down-regulation of the matrix proteins osteopontin and thrombospondin-1 to limit smooth muscle cell migration and phenotype. Regulates vasodilator-stimulated phosphoprotein (VASP) functions in platelets and smooth muscle.

### Tissue specificity

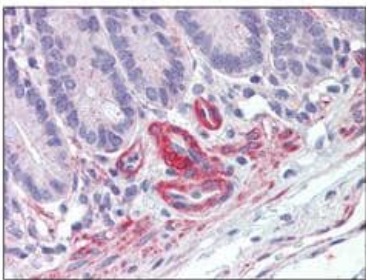
Primarily expressed in lung and placenta.

### Sequence similarities

Belongs to the protein kinase superfamily. AGC Ser/Thr protein kinase family. cGMP subfamily. Contains 1 AGC-kinase C-terminal domain. Contains 2 cyclic nucleotide-binding domains.

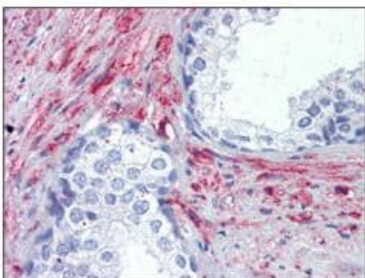
	Contains 1 protein kinase domain.
<b>Domain</b>	<p>Composed of an N-terminal leucine-zipper domain followed by an autoinhibitory domain, which mediate homodimer formation and inhibit kinase activity, respectively. Next, two cGMP-binding domains are followed by the catalytic domain at the C-terminus. Binding of cGMP to cGMP-binding domains results in a conformational change that activates kinase activity by removing the autoinhibitory domain from the catalytic cleft leaving the catalytic domain free to phosphorylate downstream substrates. Isoforms alpha and beta have identical cGMP-binding and catalytic domains but differ in their leucine zipper and autoinhibitory sequences and therefore differ in their dimerization substrates and kinase enzyme activity.</p> <p>Heterotetramerization is mediated by the interaction between a coiled-coil of PRKG1 and the leucine/isoleucine zipper of PPP1R12A/MBS, the myosin-binding subunit of the myosin phosphatase.</p>
<b>Post-translational modifications</b>	<p>Autophosphorylation increases kinase activity.</p> <p>65 kDa monomer is produced by proteolytic cleavage.</p>
<b>Cellular localization</b>	Cytoplasm. Colocalized with TRPC7 in the plasma membrane.

## Images



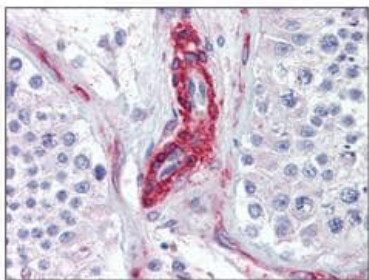
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-cGKI antibody (ab110124)

Immunohistochemical analysis of cGKI expression in formalin fixed, paraffin embedded human small intestine section, using ab110124 at 10 µg/ml.



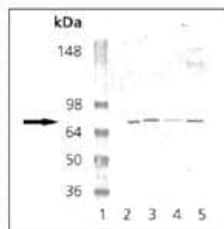
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-cGKI antibody (ab110124)

Immunohistochemical analysis of cGKI expression in formalin fixed, paraffin embedded human prostate section, using ab110124 at 10 µg/ml.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-cGKI antibody (ab110124)

Immunohistochemical analysis of cGKI expression in formalin fixed, paraffin embedded human testis section, using ab110124 at 10 µg/ml.



Western blot - Anti-cGKI antibody (ab110124)

**All lanes :** Anti-cGKI antibody (ab110124)

**Lane 1 :** Molecular weight marker

**Lane 2 :** Mouse brain tissue extract

**Lane 3 :** Rat brain tissue extract

**Lane 4 :** EKS4 cell lysate

**Lane 5 :** H S67 cell lysate

**Predicted band size:** 87 kDa

**Please note:** All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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