



Rabbit Anti-Phospho-PKC gamma

SL3729R-FITC

Product Name:	Anti-Phospho-PKC gamma (Thr514)/FITC
Chinese Name:	FITC标记的磷酸化蛋白激酶C亚型G抗体
Alias:	PKC gamma (phospho T514); p-PKC gamma (phospho T514); PKC gamma (Phospho Thr514); PKC gamma (Phospho T514); p-PKC gamma (Thr514); p-PKC gamma (Thr514); PKCC; PKCG; PRKCG; Protein kinase C gamma; Protein kinase C gamma polypeptide; Protein kinase C gamma type; SCA 14; SCA14; KPCG_HUMAN.
Organism Species:	Rabbit
Clonality:	Polyclonal
React Species:	Human,Mouse,Rat,Chicken,Pig,Cow,Horse,Rabbit,
Applications:	IF=1:50-200 not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Molecular weight:	78kDa
Cellular localization:	The cell membrane
Form:	Lyophilized or Liquid
Concentration:	1mg/ml
immunogen:	KLH conjugated Synthesised phosphopeptide derived from human PKC gamma around the phosphorylation site of Thr514
Lsotype:	IgG
Purification:	affinity purified by Protein A
Storage Buffer:	0.01M TBS(pH7.4) with 1% BSA, 0.03% Proclin300 and 50% Glycerol.
Storage:	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. The lyophilized antibody is stable at room temperature for at least one month and for greater than a year when kept at -20°C. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.
Product Detail:	background: Protein kinase C (PKC) is a family of serine- and threonine-specific protein kinases that can be activated by calcium and second messenger diacylglycerol. PKC family members phosphorylate a wide variety of protein targets and are known to be involved

in diverse cellular signaling pathways. PKC also serve as major receptors for phorbol esters, a class of tumor promoters. Each member of the PKC family has a specific expression profile and is believed to play distinct roles in cells. The protein encoded by this gene is one of the PKC family members. There have been at least 12 different PKC isoforms identified in humans to date including alpha, beta I, beta II, gamma, delta, epsilon, zeta, eta, theta, iota, lambda, and mu. PKC gamma is expressed solely in the brain and spinal cord and its localization is restricted to neurons. It has been demonstrated that several neuronal functions, including long term potentiation (LTP) and long term depression (LTD), specifically require this kinase. Knockout studies in mice also suggest that this kinase may be involved in neuropathic pain development. Defects in this protein have been associated with neurodegenerative disorder spinocerebellar ataxia-14 (SCA14).

Function:

Calcium-activated, phospholipid- and diacylglycerol (DAG)-dependent serine/threonine-protein kinase that plays diverse roles in neuronal cells and eye tissues, such as regulation of the neuronal receptors GRIA4/GLUR4 and GRIN1/NMDAR1, modulation of receptors and neuronal functions related to sensitivity to opiates, pain and alcohol, mediation of synaptic function and cell survival after ischemia, and inhibition of gap junction activity after oxidative stress. Binds and phosphorylates GRIA4/GLUR4 glutamate receptor and regulates its function by increasing plasma membrane-associated GRIA4 expression. In primary cerebellar neurons treated with the agonist 3,5-dihydroxyphenylglycine, functions downstream of the metabotropic glutamate receptor GRM5/MGLUR5 and phosphorylates GRIN1/NMDAR1 receptor which plays a key role in synaptic plasticity, synaptogenesis, excitotoxicity, memory acquisition and learning. May be involved in the regulation of hippocampal long-term potentiation (LTP), but may be not necessary for the process of synaptic plasticity. May be involved in desensitization of mu-type opioid receptor-mediated G-protein activation in the spinal cord, and may be critical for the development and/or maintenance of morphine-induced reinforcing effects in the limbic forebrain. May modulate the functionality of mu-type-opioid receptors by participating in a signaling pathway which leads to the phosphorylation and degradation of opioid receptors. May also contributes to chronic morphine-induced changes in nociceptive processing. Plays a role in neuropathic pain mechanisms and contributes to the maintenance of the allodynia pain produced by peripheral inflammation. Plays an important role in initial sensitivity and tolerance to ethanol, by mediating the behavioral effects of ethanol as well as the effects of this drug on the GABA(A) receptors. During and after cerebral ischemia modulate neurotransmission and cell survival in synaptic membranes, and is involved in insulin-induced inhibition of necrosis, an important mechanism for minimizing ischemic injury. Required for the elimination of multiple climbing fibers during innervation of Purkinje cells in developing cerebellum. Is activated in lens epithelial cells upon hydrogen peroxide treatment, and phosphorylates connexin-43 (GJA1/CX43), resulting in disassembly of GJA1 gap junction plaques and inhibition of gap junction activity which could provide a protective effect against oxidative stress (By similarity). Phosphorylates p53/TP53 and promotes p53/TP53-dependent apoptosis in response to DNA damage.

Subunit:

Interacts with GRIA4. Interacts with CDCP1. Interacts with TP53INP1 and p53/TP53.

Subcellular Location:

Cytoplasm. Cytoplasm, perinuclear region. Cell membrane; Peripheral membrane protein. Cell junction, synapse, synaptosome. Cell projection, dendrite.

Note=Translocates to synaptic membranes on stimulation.

Tissue Specificity:

Expressed in Purkinje cells of the cerebellar cortex.

Post-translational modifications:

Autophosphorylation on Thr-674 appears to regulate motor functions of junctophilins, JPH3 and JPH4.

DISEASE:

Defects in PRKCG are the cause of spinocerebellar ataxia type 14 (SCA14) [MIM:605361]. Spinocerebellar ataxia is a clinically and genetically heterogeneous group of cerebellar disorders. Patients show progressive incoordination of gait and often poor coordination of hands, speech and eye movements, due to degeneration of the cerebellum with variable involvement of the brainstem and spinal cord. SCA14 is an autosomal dominant cerebellar ataxia (ADCA).

Similarity:

Belongs to the protein kinase superfamily. AGC Ser/Thr protein kinase family. PKC subfamily.

Contains 1 AGC-kinase C-terminal domain.

Contains 1 C2 domain.

Contains 2 phorbol-ester/DAG-type zinc fingers.

Contains 1 protein kinase domain.

Database links:

[Entrez Gene: 5582](#)Human

[Entrez Gene: 18752](#)Mouse

[Entrez Gene: 24681](#)Rat

[Omim: 176980](#)Human

[SwissProt: P05129](#)Human

[SwissProt: P63318](#)Mouse

[SwissProt: P63319](#)Rat

[Unigene: 631564](#)Human

[Unigene: 7980](#)Mouse

[Unigene: 9747](#)Rat

Important Note:

This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.

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