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KD-Validated Anti-Phospho-PKC gamma (Thr514) Rabbit Monoclonal Antibody

Rabbit monoclonal antibody
Catalog # AGI1824

Product Information

Application	WB, FC
Primary Accession	P05129
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Isotype	Rabbit IgG
Clone Names	24GB4490
Calculated MW	78448
Gene Name	PRKCG
Aliases	PRKCG; Protein Kinase C Gamma; PKC-Gamma; PKCC; PKCG; Protein Kinase C Gamma Type; EC 2.7.11.13; MGC57564;SCA14; Protein Kinase C, Gamma; EC 2.7.11; PKCgamma; PKCI(3); PKCγ
Immunogen	A synthesized peptide derived from human Phospho-PKC gamma (Thr514)

Additional Information

Gene ID	5582
Other Names	Protein kinase C gamma type, PKC-gamma, 2.7.11.13, PRKCG, PKCG

Protein Information

Name	PRKCG
Synonyms	PKCG
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-dihyidroxyphenylglycine, 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. Involved in the phase resetting of the cerebral cortex circadian clock during temporally restricted feeding. Stabilizes the core clock component BMAL1 by interfering with its ubiquitination, thus suppressing its degradation, resulting in phase resetting of the cerebral cortex clock (By similarity). Phosphorylates and activates LRRK1, which phosphorylates RAB proteins involved in intracellular trafficking (PubMed:36040231). Acts as a regulator of dopamine signaling by mediating constitutive phosphorylation of dopamine receptor DRD1, inhibiting G protein-coupled receptor signaling (PubMed:20969574).

Cellular Location

Cytoplasm {ECO:0000250|UniProtKB:P63318}. Cytoplasm, perinuclear region. Cell membrane; Peripheral membrane protein. Synapse, synaptosome {ECO:0000250|UniProtKB:P63318} Cell projection, dendrite {ECO:0000250|UniProtKB:P63319} Note=Translocates to synaptic membranes on stimulation {ECO:0000250|UniProtKB:P63318}

Tissue Location

Expressed in Purkinje cells of the cerebellar cortex.

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