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Anti-PKC Gamma Antibody

Catalog # ABO10611

Product Information

Application	WB
Primary Accession	P05129
Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized
Description	Rabbit IgG polyclonal antibody for Protein kinase C gamma type(PRKCG) detection. Tested with WB in Human;Mouse;Rat.
Reconstitution	Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Additional Information

Gene ID	5582
Other Names	Protein kinase C gamma type, PKC-gamma, 2.7.11.13, PRKCG, PKCG
Calculated MW	78448
Application Details	Western blot, 0.1-0.5 □g/ml, Rat, Human, Mouse
Subcellular Localization	Cytoplasm . Cytoplasm, perinuclear region . Cell membrane ; Peripheral membrane protein . Cell junction, synapse, synaptosome . Cell projection, dendrite . Translocates to synaptic membranes on stimulation. .
Tissue Specificity	Expressed in Purkinje cells of the cerebellar cortex. .
Source	Eukaryota
Protein Name	Protein kinase C gamma type(PKC-gamma)
Contents	Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg Thimerosal, 0.05mg NaN3.
Immunogen	A synthetic peptide corresponding to a sequence at the C-terminus of human PKC gamma(665-685aa IDQADFQGFTYVNPDFVHPDA), identical to the related rat and mouse sequences.
Purification	Immunogen affinity purified.
Cross Reactivity	No cross reactivity with other proteins
Storage	At -20˚C for one year. After r˚Constitution, at 4˚C for one month. It˚Can also

	be aliquotted and stored frozen at -20˚C for a longer time.Avoid repeated freezing and thawing.
Sequence Similarities	Belongs to the protein kinase superfamily. AGC Ser/Thr protein kinase family. PKC subfamily.

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.

Background

The gamma isotype of protein kinase C(PKC gamma) is a member of the classical PKC(cPKC) subfamily which is activated by Ca(2+) and diacylglycerol in the presence of phosphatidylserine. Physiologically, PKC gamma is activated by a mechanism coupled with receptor-mediated breakdown of inositol phospholipid as other cPKC isotypes such as PKC alpha and PKC beta. PKC gamma is expressed solely in the brain and spinal cord and its localization is restricted to neurons, while PKC alpha and PKC beta are expressed in many tissues in addition to the brain. Within the brain, PKC gamma is the most abundant in the cerebellum, hippocampus and cerebral cortex, where the existence of neuronal plasticity has been demonstrated. PKC gamma gene is mutated in spinocerebellar ataxia type 14(SCA14). Verbeek et al.(2005) point out the specific alterations in mutant PKC gamma function that could lead to the selective neuronal degeneration of SCA14.

Images



Anti-PKC gamma antibody, ABO10611, Western blottingLane 1: Rat Brain Tissue LysateLane 2: Rat Brain Tissue Lysate

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