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GRK2 Rabbit mAb

Catalog # AP76516

Product Information

Application	WB, IP
Primary Accession	P25098
Reactivity	Human
Host	Rabbit
Clonality	Monoclonal Antibody
Isotype	IgG
Conjugate	Unconjugated
Purification	Affinity Purified
Calculated MW	79574

Additional Information

Gene ID	156
Other Names	GRK2
Dilution	WB~~1:1000 IP~~N/A
Format	Liquid in 50mM Tris-Glycine(pH 7.4), 0.15M NaCl, 40%Glycerol, 0.01% sodium azide and 0.05% BSA.
Storage	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.

Protein Information

Name	GRK2 {ECO:0000303|PubMed:40384633, ECO:0000312|HGNC:HGNC:289}
Function	Specifically phosphorylates the activated forms of G protein- coupled receptors (PubMed:14976224, PubMed:16179383, PubMed:19306925, PubMed:19715378, PubMed:21799898, PubMed:23077507, PubMed:30284927, PubMed:33859231, PubMed:39138140, PubMed:40384633). Such receptor phosphorylation initiates beta-arrestin-mediated receptor internalization, and signaling events leading to their desensitization (PubMed:14976224, PubMed:16179383, PubMed:19306925, PubMed:19715378, PubMed:21799898, PubMed:23077507, PubMed:30284927, PubMed:33859231, PubMed:39138140, PubMed:40384633). Phosphorylates the agonist-occupied form of the beta-adrenergic and closely related receptors, probably inducing a desensitization of them (PubMed:19715378). Phosphorylates catecholamine-activated ADRB2 to regulate physiological cardiomyocyte contraction rate responses (By similarity). Also phosphorylates ligand- bound C3a and C5a anaphylatoxin receptors (C3AR1 and C5AR1, respectively),

	leading to receptor desensitization (PubMed:21799898, PubMed:23077507). Positively regulates ciliary smoothened (SMO) signaling pathway by mediating phosphorylation of SMO, facilitating SMO trafficking into the cilium and the stimulation of SMO activity (PubMed:39138140). Also positively regulates SMO signaling by mediating phosphorylation of GPR161, a key inhibitor SMO signaling, promoting ciliary export of GPR161 (PubMed:40384633). Key regulator of LPAR1 signaling (PubMed:19306925). Competes with RALA for binding to LPAR1 thus affecting the signaling properties of the receptor (PubMed:19306925). Desensitizes LPAR1 and LPAR2 in a phosphorylation-independent manner (PubMed:19306925). Inhibits relaxation of airway smooth muscle in response to blue light (PubMed:30284927). Also able to mediate phosphorylation-independent desensitization of dopamine receptor DRD2 (By similarity).
Cellular Location	Cytoplasm {ECO:0000250|UniProtKB:P26817}. Cell membrane {ECO:0000250|UniProtKB:P21146}. Cell projection, cilium membrane. Postsynapse {ECO:0000250|UniProtKB:P26817}. Presynapse {ECO:0000250|UniProtKB:P26817}
Tissue Location	Expressed in peripheral blood leukocytes.

Background

GRK2 kinase activity and cellular localization are tightly regulated by interactions with activated receptors, G-beta and G-gamma subunits, adaptor proteins, phospholipids, caveolin and calmodulin, as well as by phosphorylation. PKC phosphorylation enhances GRK2 activity by promoting its membrane localization and by abolishing the inhibitory association of calmodulin.

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