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KD-Validated Anti-GRK2 Rabbit Monoclonal Antibody

Rabbit monoclonal antibody
Catalog # AGI1966

Product Information

Application	WB, FC, ICC
Primary Accession	P25098
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Isotype	Rabbit IgG
Clone Names	23GB1515
Calculated MW	79574
Gene Name	GRK2
Aliases	GRK2; G Protein-Coupled Receptor Kinase 2; BARK1; ADRBK1; Beta-Adrenergic Receptor Kinase 1; EC 2.7.11.15; Beta-ARK-1; Adrenergic, Beta, Receptor Kinase 1; G-Protein Coupled Receptor Kinase; Adrenergic Beta Receptor Kinase 1; BETA-ARK1; EC 2.7.11; BARK
Immunogen	A synthesized peptide derived from human GRK2

Additional Information

Gene ID	156
Other Names	Beta-adrenergic receptor kinase 1, Beta-ARK-1, 2.7.11.15, G-protein coupled receptor kinase 2 {ECO:0000312|HGNC:HGNC:289}, GRK2 (HGNC:289), ADRBK1, BARK, BARK1

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.

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