10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

GRK2 Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO1550a

Product Information

Application	WB, IHC, ICC, E
Primary Accession	P25098
Reactivity	Human, Mouse, Rat, Monkey
Host	Mouse
Clonality	Monoclonal
Clone Names	3F8
Isotype	IgG1
Calculated MW	79574
Description	The product of this gene phosphorylates the beta-2-adrenergic receptor and appears to mediate agonist-specific desensitization observed at high agonist concentrations. This protein is an ubiquitous cytosolic enzyme that specifically phosphorylates the activated form of the beta-adrenergic and related G-protein-coupled receptors. Abnormal coupling of beta-adrenergic receptor to G protein is involved in the pathogenesis of the failing heart. (provided by RefSeq)Tissue specificity: Expressed in peripheral blood leukocytes
Immunogen	Purified recombinant fragment of human GRK2 expressed in E. Coli.
Formulation	Ascitic fluid containing 0.03% sodium azide.

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, ADRBK1, BARK, BARK1, GRK2
Dilution	WB~~1/500 - 1/2000 IHC~~1/500 - 1/2000 ICC~~N/A E~~1/10000
Storage	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	GRK2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

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.

References

1. Mol Biol Cell. 2008 Jul;19(7):2973-83. 2. Biochemistry. 2009 May 26;48(20):4285-93.

Images

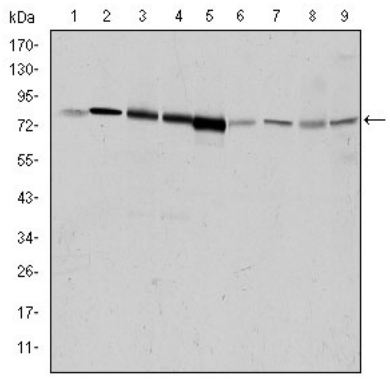


Figure 1: Western blot analysis using GRK2 mouse mAb against Hela (1), Jurkat (2), MOLT4 (3), RAJI (4), THP-1 (5), L1210 (6), Cos7 (7), PC-12 (8), and NIH/3T3 (9) cell lysate.

Figure 2: Immunohistochemical analysis of paraffin-embedded endometrial cancer tissues (left) and cervical cancer tissues (right) using GRK2 mouse mAb with DAB staining.

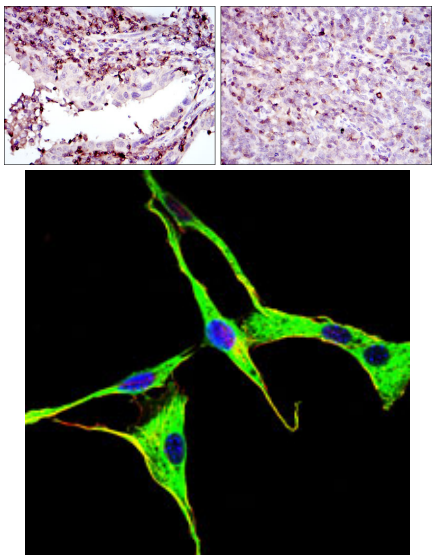


Figure 3: Immunofluorescence analysis of NIH/3T3 cells using GRK2 mouse mAb (green). Blue: DRAQ5 fluorescent DNA dye.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.