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Polycystin 2 Rabbit pAb

Catalog # AP99600

Product Information

Application	IHC-P, IHC-F, IF
Primary Accession	Q13563
Other Accession	Q13563
Reactivity	Human, Mouse
Predicted	Rat, Chicken, Dog
Host	Rabbit
Clonality	Polyclonal
Calculated MW	109691
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human Polycystin 2
Epitope Specificity	651-750/968
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the polycystin family. Contains 1 EF-hand domain.
SUBUNIT	Forms homooligomers. Isoform 1 interacts with PKD1 while isoform 3 does not. PKD1 requires the presence of PKD2 for stable expression. Interacts with CD2AP. Interacts with HAX1. Interacts with NEK8. Part of a complex containing AKAP5, ADCY5, ADCY6 and PDE4C.
DISEASE	Polycystic kidney disease 2 (PKD2) [MIM:613095]: A disorder characterized by progressive formation and enlargement of cysts in both kidneys, typically leading to end-stage renal disease in adult life. Cysts also occurs in the liver and other organs. It represents approximately 15% of the cases of autosomal dominant polycystic kidney disease. PKD2 is clinically milder than PKD1 but it has a deleterious impact on overall life expectancy. Note=The disease is caused by mutations affecting the gene represented in this entry.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	This gene encodes a member of the polycystin protein family. The encoded protein is a multi-pass membrane protein that functions as a calcium permeable cation channel, and is involved in calcium transport and calcium signaling in renal epithelial cells. This protein interacts with polycystin 1, and they may be partners in a common signaling cascade involved in tubular morphogenesis. Mutations in this gene are associated with autosomal dominant polycystic kidney disease type 2. [provided by RefSeq, Mar 2011].

Additional Information

Gene ID	5311
Other Names	APKD2; PC2; PKD4; Pc-2; TRPP2; PKD2_HUMAN; PKD2; Autosomal dominant polycystic kidney disease type II protein; Polycystic kidney disease 2 protein; Polycystwin; R48321; Transient receptor potential cation channel subfamily P

	member 2; TRPP1; PKD2_MOUSE; Polycystic kidney disease 2 protein homolog; polycystin 2, transient receptor potential cation channel; polycystic kidney disease 2 (autosomal dominant); transient receptor potential cation channel, subfamily P, member 2
Dilution	IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	PKD2 (HGNC:9009)
Function	Forms a nonselective cation channel (PubMed: 11854751, PubMed:11991947, PubMed:15692563, PubMed:26269590, PubMed:27071085, PubMed:31441214, PubMed:39009345). Can function as a homotetrameric ion channel or can form heteromer with PKD1 (PubMed:31441214, PubMed:33164752). Displays distinct function depending on its subcellular localization and regulation by its binding partners (PubMed:11854751, PubMed:11991947, PubMed:27214281, PubMed:29899465). In primary cilium functions as a cation channel, with a preference for monovalent cations over divalent cations that allows K(+), Na(+) and Ca(2+) influx, with low selectivity for Ca(2+) (PubMed:27071085). Involved in fluid-flow mechanosensation by the primary cilium in renal epithelium (By similarity). In the endoplasmic reticulum, likely functions as a K(+) channel to facilitate Ca(2+) release (By similarity). The heterotetrameric PKD1/PKD2 channel has higher Ca(2+) permeability than homomeric PKD2 channel and acts as a primarily Ca(2+)-permeable channel (PubMed:31441214). Interacts with and acts as a regulator of a number of other channels, such as TRPV4, TRPC1, IP3R, RYR2, ultimately further affecting intracellular signaling, to modulate intracellular Ca(2+) signaling (PubMed:11854751, PubMed:11991947, PubMed:27214281, PubMed:29899465). Together with TRPV4, forms mechano- and thermosensitive channels in cilium (PubMed:18695040). In cardiomyocytes, PKD2 modulates Ca(2+) release from stimulated RYR2 receptors through direct association (By similarity). Also involved in left-right axis specification via its role in sensing nodal flow; forms a complex with PKD1L1 in cilia to facilitate flow detection in left- right patterning (By similarity). Acts as a regulator of cilium length together with PKD1 (By similarity). Mediates systemic blood pressure and contributes to the myogenic response in cerebral arteries though vasoconstriction (By similarity).
Cellular Location	Cell projection, cilium membrane; Multi-pass membrane protein. Endoplasmic reticulum membrane; Multi-pass membrane protein. Cell membrane; Multi-pass membrane protein. Basolateral cell membrane. Cytoplasmic vesicle membrane. Golgi apparatus {ECO:0000250|UniProtKB:O35245}. Vesicle Secreted, extracellular exosome Note=PKD2 localization to the plasma and ciliary membranes requires PKD1. PKD1:PKD2 interaction is required to reach the Golgi apparatus form endoplasmic reticulum and then traffic to the cilia (By similarity). Retained in the endoplasmic reticulum by interaction with PACS1 and PACS2 (PubMed:15692563). Detected on kidney tubule basolateral membranes and basal cytoplasmic vesicles (PubMed:10770959) Cell surface and cilium localization requires GANAB (PubMed:27259053) Detected on migrasomes and on extracellular exosomes in urine (PubMed:21406692). Preferentially localized to the dorsal side of immotile cilia (By similarity). {ECO:0000250|UniProtKB:O35245, ECO:0000269|PubMed:15692563,

ECO:0000269|PubMed:21406692, ECO:0000269|PubMed:27259053}

Tissue Location	Detected in fetal and adult kidney (PubMed:10770959). Detected at the thick ascending limb of the loop of Henle, at distal tubules, including the distal convoluted tubule and cortical collecting tubules, with weak staining of the collecting duct (PubMed:10770959). Detected on placenta syncytiotrophoblasts (at protein level) (PubMed:26269590). Strongly expressed in ovary, fetal and adult kidney, testis, and small intestine. Not detected in peripheral leukocytes.

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