PKD2 Human Protein

PRODUCT OVERVIEW

Product Name	PKD2, Protein
Full Product Name	Human PKD2 full length protein-synthetic nanodisc
Product Gene Name	PKD2 protein
Product Synonym Names	APKD2; PC2; PKD4; Pc-2; TRPP2
Host	HEK293
Form/Format	Lyophilized from nanodisc solubilization buffer (20 mM Tris-HCl, 150 mM NaCl, pH 8.0). Normally 5%-8% trehalose is added as protectants before lyophilization. Please see Certificate of Analysis for specific instructions. Do not use solvents with pH lower
Preparation and Storage	Store at -20 degree C to -80 degree C for 12 months in lyophilized form. After reconstitution, if not intended for use within a month, aliquot and store at -80 degree C (Avoid repeated freezing and thawing). Lyophilized proteins are shipped at ambient temperature.
Molecular Weight	968
OMIM	gene 613095
3D Structure	ModBase 3D Structure for Q13563
Tag	C-DYKDDDDK
Product Categories/Family for PKD2 protein	Full Length Transmembrane Proteins; Ion Channels: Transient receptor potential
Related Product Information for PKD2 protein	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]
Other Notes	Small volumes of PKD2 protein vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for PKD2 purchase	MBS1883111 is a protein targeting PKD2. Also known as Human PKD2 full length protein-synthetic nanodisc. Host: HEK293.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for PKD2. It may not necessarily be applicable to this product.

NCBI GI #	116242717
NCBI GeneID	5311
NCBI Accession #	Q13563.3
UniProt Primary Accession #	Q13563
UniProt Secondary Accession #	O60441; Q15764; Q2M1Q3; Q2M1Q5
UniProt Related Accession #	Q13563
NCBI Official Full Name	Polycystin-2

NCBI Official Synonym Full Names	polycystic kidney disease 2 (autosomal dominant)
NCBI Official Symbol	PKD2
NCBI Official Synonym Symbols	PC2; PKD4; Pc-2; APKD2; TRPP2
UniProt Protein Name	Polycystin-2
UniProt Synonym Protein Names	Autosomal dominant polycystic kidney disease type II protein; Polycystic kidney disease 2 protein; Polycystwin; R48321
Protein Family	Polycystin
UniProt Gene Name	PKD2
UniProt Entry Name	PKD2_HUMAN
NCBI Protein Information	polycystin-2; R48321; polycystwin; autosomal dominant polycystic kidney disease type II protein; transient receptor potential cation channel, subfamily P, member 2
UniProt Comments for PKD2	PKD2: Involved in fluid-flow mechanosensation by the primary cilium in renal epithelium. PKD1 and PKD2 may function through a common signaling pathway that is necessary for normal tubulogenesis. Acts as a regulator of cilium length, together with PKD1. The dynamic control of cilium length is essential in the regulation of mechanotransductive signaling. The cilium length response creates a negative feedback loop whereby fluid shear-mediated deflection of the primary cilium, which decreases intracellular cAMP, leads to cilium shortening and thus decreases flow-induced signaling. Functions as a calcium permeable cation channel. Defects in PKD2 are the cause of polycystic kidney disease autosomal dominant type 2 (ADPKD2). ADPKD2 is 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. ADPKD2 is clinically milder than ADPKD1 but it has a deleterious impact on overall life expectancy. Belongs to the polycystin family. 5 isoforms of the human protein are produced by alternative splicing. Protein type: Membrane protein, integral; Channel, cation; Membrane protein, multi-pass Chromosomal Location of Human Ortholog: 4q22.1 Cellular Component: filamentous actin; endoplasmic reticulum membrane; nonmotile primary cilium; endoplasmic reticulum; integral to plasma membrane; lamellipodium; cytoplasm; basal plasma membrane; plasma membrane; motile primary cilium; intercellular junction; basal cortex; cilium Molecular Function: voltage-gated cation channel activity; actinin binding; identical protein binding; protein homodimerization activity; phosphoprotein binding; voltage-gated ion channel activity; calcium ion binding; muscle alpha-actinin binding; ATPase binding; calcium-induced calcium release activity; voltage-gated calcium channel activity; protein binding; potassium channel activity; voltage-gated sodium channel activity; cytoskeletal protein binding; HLH domain binding; receptor binding Biological Process: neural tube development; positive regulation of inositol-1,4,5-triphosphate receptor activity; embryonic placenta development; cytoplasmic sequestering of transcription factor; positive regulation of nitric oxide biosynthetic process; regulation of cAMP metabolic process; heart development; detection of mechanical stimulus; JAK-STAT cascade; liver development; G1/S-specific positive regulation of cyclin-dependent protein kinase activity; regulation of cell proliferation; negative regulation of cell proliferation; ureteric bud branching; spinal cord development; release of sequestered calcium ion into cytosol; calcium ion transport; positive regulation of transcription from RNA polymerase II promoter; heart looping; cell cycle arrest; determination of left/right symmetry; centrosome duplication Disease: Polycystic Kidney Disease 2
Research Articles on PKD2	**1.** PKD1 and PKD2 mutations disrupt the function of these proteins on the primary cilium, forming fluid filled cysts in the kidney.
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