

Polycystin-2 (G-20): sc-10376

BACKGROUND

Autosomal dominant polycystic kidney disease (ADPKD) is characterized by the formation of cysts in kidney tubules as well as in liver and pancreas tissues. Cells within these cysts display abnormalities in proliferation and polarity. Polycystin-2 (PKD2), an integral membrane glycoprotein, is mutated in approximately 15% of patients with ADPKD. Polycystin-2 is expressed in medullary collecting ducts, cortical collecting ducts and distal convoluted tubules of kidney. It associates with Hax-1 and may be involved in cell-matrix interactions. Polycystin-1 and Polycystin-2 display significant homology within their transmembrane region and are thought to interact in order to enhance AP-1 expression, which regulates cell proliferation, differentiation and apoptosis. These findings suggest that mutations in Polycystin-2 may facilitate the development of renal tubular cysts.

REFERENCES

1. Arnould, T., et al. 1998. The polycystic kidney disease 1 gene product mediates protein kinase C α -dependent and c-Jun N-terminal kinase-dependent activation of the transcription factor AP-1. *J. Biol. Chem.* 273: 6013-6018.
2. Huan, Y., et al. 1999. Polycystin-1, the PKD1 gene product, is in a complex containing E-cadherin and the catenins. *J. Clin. Invest.* 104: 1459-1468.
3. Ong, A.C., et al. 1999. Coordinate expression of the autosomal dominant polycystic kidney disease proteins, polycystin-2 and polycystin-1, in normal and cystic tissue. *Am. J. Pathol.* 154: 1721-1729.
4. Obermuller, N., et al. 1999. The rat PKD2 protein assumes distinct subcellular distributions in different organs. *Am. J. Physiol.* 277: F914-F925.
5. Cai, Y., et al. 1999. Identification and characterization of polycystin-2, the PKD2 gene product. *J. Biol. Chem.* 274: 28557-28565.
6. Arnould, T., et al. 1999. Cellular activation triggered by the autosomal dominant polycystic kidney disease gene product PKD2. *Mol. Cell. Biol.* 19: 3423-3434.

CHROMOSOMAL LOCATION

Genetic locus: PKD2 (human) mapping to 4q22.1; Pkd2 (mouse) mapping to 5 E5.

SOURCE

Polycystin-2 (G-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Polycystin-2 of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-10376 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

Polycystin-2 (G-20) is recommended for detection of Polycystin-2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Polycystin-2 (G-20) is also recommended for detection of polycystin-2 in additional species, including canine, bovine, porcine and avian.

Suitable for use as control antibody for Polycystin-2 siRNA (h): sc-40863, Polycystin-2 siRNA (m): sc-40864, Polycystin-2 shRNA Plasmid (h): sc-40863-SH, Polycystin-2 shRNAPlasmid (m): sc-40864-SH, Polycystin-2 shRNA (h) Lentiviral Particles: sc-40863-V and Polycystin-2 shRNA(m) Lentiviral Particles: sc-40864-V.

Molecular Weight of Polycystin-2: 130 kDa.

Positive Controls: MIA PaCa-2 cell lysate: sc-2285, Caki-1 cell lysate: sc-2224 or KNRK whole cell lysate: sc-2214.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker[™] compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker[™] Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz[™] Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Bai, C.X., et al. 2008. Activation of TRPP2 through mDia1-dependent voltage gating. *EMBO J.* 27: 1345-1356.
2. Feng, S., et al. 2011. A single amino acid residue constitutes the third dimerization domain essential for the assembly and function of the tetrameric polycystin-2 (TRPP2) channel. *J. Biol. Chem.* 286: 18994-19000.
3. Du, J., et al. 2012. Protein kinase G inhibits flow-induced Ca²⁺ entry into collecting duct cells. *J. Am. Soc. Nephrol.* 23: 1172-1180.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.



Try **Polycystin-2 (YCE2): sc-47734** or **Polycystin-2 (D-3): sc-28331**, our highly recommended monoclonal alternatives to Polycystin-2 (G-20). Also, for AC, HRP, FITC, PE, Alexa Fluor[®] 488 and Alexa Fluor[®] 647 conjugates, see **Polycystin-2 (YCE2): sc-47734**.