

Polycystin-1 (P-15): sc-10370

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. The integral membrane protein, Polycystin-1 (PKD1) is mutated in a majority of patients with ADPKD. Polycystin-1 is expressed in renal tubular epithelial cells and colocalizes with cell and focal adhesion proteins, including E-cadherin, catenins, vinculin, and paxillin, to focal areas in order to form a larger multiprotein complex. Polycystin-1 is posttranslationally modified by tyrosine phosphorylation and associates with Polycystin-2 (PKD2) to mediate AP-1 expression, which suggests that Polycystin-1 is involved in cell-cell and cell-matrix interactions to control cell proliferation and polarity.

REFERENCES

1. Arnould, T., et al. 1998. The polycystic kidney disease 1 gene product mediates protein kinase C a-dependent and c-Jun N-terminal kinase-dependent activation of the transcription factor AP-1. *J. Biol. Chem.* 273: 6013-6018.
2. Ong, A.C., et al. 1999. Polycystin-1 expression in PKD1, early-onset PKD1, and TSC2/PKD1 cystic tissue. *Kidney Int.* 56: 1324-1333.
3. 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.
4. 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.
5. Wilson, P.D., et al. 1999. The PKD1 gene product, "polycystin-1," is a tyrosine-phosphorylated protein that colocalizes with $\alpha 2\beta 1$ -integrin in focal clusters in adherent renal epithelia. *Lab. Invest.* 79: 1311-1323.
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: PKD1 (human) mapping to 16p13.3; Pkd1 (mouse) mapping to 17 A3.3.

SOURCE

Polycystin-1 (P-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Polycystin-1 of human origin.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

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-10370 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Polycystin-1 (P-15) is recommended for detection of polycystin-1 of mouse, rat and human origin by 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-1 (P-15) is also recommended for detection of polycystin-1 in additional species, including canine and porcine.

Suitable for use as control antibody for Polycystin-1 siRNA (h): sc-40861, Polycystin-1 siRNA (m): sc-40862, Polycystin-1 shRNA Plasmid (h): sc-40861-SH, Polycystin-1 shRNA Plasmid (m): sc-40862-SH, Polycystin-1 shRNA (h) Lentiviral Particles: sc-40861-V and Polycystin-1 shRNA (m) Lentiviral Particles: sc-40862-V.

Molecular Weight of Polycystin-1: 485 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) 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. Strachan, L.R., et al. 2004. Cranial neural crest recycle surface integrins in a substratum-dependent manner to promote rapid motility. *J. Cell Biol.* 167: 545-554.
2. Karcher, C., et al. 2005. Lack of a laterality phenotype in PKD1 knock-out embryos correlates with absence of Polycystin-1 in nodal cilia. *Differentiation* 73: 425-432.
3. Nauli, S.M., et al. 2008. Endothelial cilia are fluid shear sensors that regulate calcium signaling and nitric oxide production through Polycystin-1. *Circulation* 117: 1161-1171.

RESEARCH USE

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



Try **Polycystin-1 (7E12): sc-130554**, our highly recommended monoclonal alternative to Polycystin-1 (P-15). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **Polycystin-1 (7E12): sc-130554**.