SANTA CRUZ BIOTECHNOLOGY, INC.

Polycystin-1 (7E12): sc-130554

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.

CHROMOSOMAL LOCATION

Genetic locus: PKD1 (human) mapping to 16p13.3; Pkd1 (mouse) mapping to 17 A3.3.

SOURCE

Polycystin-1 (7E12) is a mouse monoclonal antibody raised against amino acids 24-180 corresponding to the N-terminal leucine rich domain of Polycystin-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Polycystin-1 (7E12) is available conjugated to agarose (sc-130554 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to either phycoerythrin (sc-130554 PE), fluorescein (sc-130554 FITC), Alexa Fluor® 488 (sc-130554 AF488), Alexa Fluor® 546 (sc-130554 AF546), Alexa Fluor® 594 (sc-130554 AF594) or Alexa Fluor® 647 (sc-130554 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-130554 AF680) or Alexa Fluor® 790 (sc-130554 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Polycystin-1 (7E12) is recommended for detection of Polycystin-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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).

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.

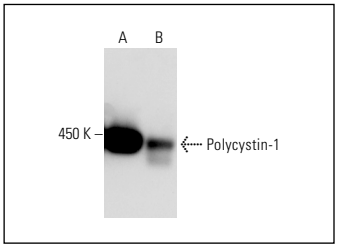
Molecular Weight of Polycystin-1: 485 kDa.

Positive Controls: WI-38 whole cell lysate: sc-364260.

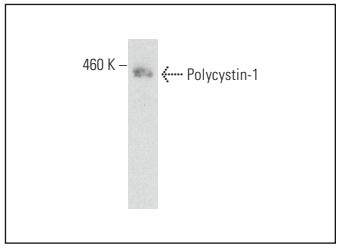
STORAGE

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

DATA



Polycystin-1 (7E12): sc-130554. Western blot analysis of Polycystin-1 expression in purified human urinary exosomes (**A**) and purified MDCK membrane (**B**).



Polycystin-1 (7E12): sc-130554. Western blot analysis of Polycystin-1 expression in WI-38 whole cell lysate.

SELECT PRODUCT CITATIONS

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2. Yu, W., et al. 2011. Identification of polycystin-1 and $G_{\alpha\ 12}$ binding regions necessary for regulation of apoptosis. Cell. Signal. 23: 213-221.
3. Subramanian, B., et al. 2012. The regulation of cystogenesis in a tissue engineered kidney disease system by abnormal matrix interactions. Biomaterials 33: 8383-8394.
4. Castelli, M., et al. 2013. Polycystin-1 binds Par3/aPKC and controls convergent extension during renal tubular morphogenesis. Nat. Commun. 4: 2658.
5. Jerman, S., et al. 2014. OFD1 and flotillins are integral components of a ciliary signaling protein complex organized by polycystins in renal epithelia and odontoblasts. PLoS ONE 9: e106330.
6. Castelli, M., et al. 2015. Regulation of the microtubular cytoskeleton by Polycystin-1 favors focal adhesions turnover to modulate cell adhesion and migration. BMC Cell Biol. 16: 15.
7. Dalagiorgou, G., et al. 2016. Mechanosensor Polycystin-1 potentiates differentiation of human osteoblastic cells by upregulating Runx2 expression via induction of JAK2/STAT3 signaling axis. Cell. Mol. Life Sci. 74: 921-936.
8. Cruz, N.M., et al. 2017. Organoid cystogenesis reveals a critical role of microenvironment in human polycystic kidney disease. Nat. Mater. 16: 1112-1119.
9. Viau, A., et al. 2018. Cilia-localized LKB1 regulates chemokine signaling, macrophage recruitment, and tissue homeostasis in the kidney. EMBO J. 37: e98615.
10. Prasad, H., et al. 2019. NHA2 promotes cyst development in an *in vitro* model of polycystic kidney disease. J. Physiol. 597: 499-519.

RESEARCH USE

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