SANTA CRUZ BIOTECHNOLOGY, INC.

Polycystin-2 (D-3): sc-28331

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.

CHROMOSOMAL LOCATION

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

SOURCE

Polycystin-2 (D-3) is a mouse monoclonal antibody raised against amino acids 689-968 of Polycystin-2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Polycystin-2 (D-3) is available conjugated to agarose (sc-28331 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-28331 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-28331 PE), fluorescein (sc-28331 FITC), Alexa Fluor® 488 (sc-28331 AF488), Alexa Fluor® 546 (sc-28331 AF546), Alexa Fluor® 594 (sc-28331 AF594) or Alexa Fluor® 647 (sc-28331 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-28331 AF680) or Alexa Fluor® 790 (sc-28331 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Polycystin-2 (D-3) is recommended for detection of Polycystin-2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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), immunohistochemistry (including paraffin-embedded sections) (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-2 siRNA (h): sc-40863, Polycystin-2 siRNA (m): sc-40864, Polycystin-2 shRNA Plasmid (h): sc-40863-SH, Polycystin-2 shRNA Plasmid (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 (predicted) of Polycystin-2: 110 kDa.

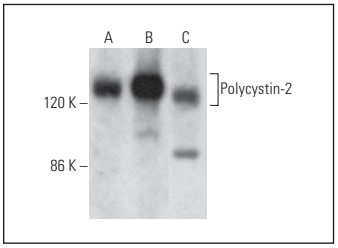
Molecular Weight (observed) of Polycystin-2: 130 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210.

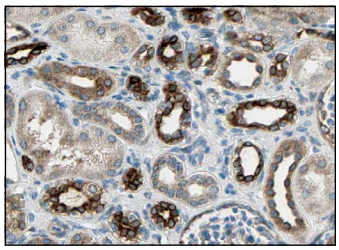
STORAGE

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

DATA



Polycystin-2 (D-3): sc-28331. Western blot analysis of Polycystin-2 expression in NIH/3T3 (**A**), 3T3-L1 (**B**) and RAT2 (**C**) whole cell lysates.



Polycystin-2 (D-3): sc-28331. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic and membrane staining of cells in tubuli. Kindly provided by The Swedish Human Protein Atlas (HPA) program.

SELECT PRODUCT CITATIONS

1. Wodarczyk, C., et al. 2009. A novel mouse model reveals that Polycystin-1 deficiency in ependyma and choroid plexus results in dysfunctional cilia and hydrocephalus. PLoS ONE 4: e7137.
2. Sammels, E., et al. 2010. Polycystin-2 activation by inositol 1,4,5-trisphosphate-induced Ca^{2+} release requires its direct association with the inositol 1,4,5-trisphosphate receptor in a signaling microdomain. J. Biol. Chem. 285: 18794-18805.
3. Fogelgren, B., et al. 2011. The exocyst protein Sec10 interacts with Polycystin-2 and knockdown causes PKD-phenotypes. PLoS Genet. 7: e1001361.
4. Dalagiorgou, G., et al. 2013. Mechanical stimulation of Polycystin-1 induces human osteoblastic gene expression via potentiation of the calcineurin/NFAT signaling axis. Cell. Mol. Life Sci. 70: 167-180.
5. Pema, M., et al. 2016. MTORC1-mediated inhibition of Polycystin-1 expression drives renal cyst formation in tuberous sclerosis complex. Nat. Commun. 7: 10786.
6. Yanda, M.K., et al. 2018. A potential strategy for reducing cysts in autosomal dominant polycystic kidney disease with a CFTR corrector. J. Biol. Chem. 293: 11513-11526.
7. Lee, E.C., et al. 2019. Discovery and preclinical evaluation of anti-miR-17 oligonucleotide RGLS4326 for the treatment of polycystic kidney disease. Nat. Commun. 10: 4148.
8. Wu, S., et al. 2020. A novel micropeptide encoded by Y-linked LINC00278 links cigarette smoking and AR signaling in male esophageal squamous cell carcinoma. Cancer Res. 80: 2790-2803.

RESEARCH USE

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