SANTA CRUZ BIOTECHNOLOGY, INC.

plakophilin 2 (C-1): sc-393711

BACKGROUND

Plakophilins 1, 2, 3 and 4 (PKP1-4) influence development and participate in linking cadherins to cytoskeletal intermediate filaments. Plakophilins 1-4 contain arm-repeat (armadillo) domains, and localize to nuclei and cell desmosomes (cell-cell junctions found in suprabasal layers of stratifying epithelia that undergo mechanical stress). Plakophilin-1 mediates increases in desmosomal protein content, desmosome assembly, and regulation of cell migration. Plakophilin-2 is important for desmosome assembly and is an essential morphogenic factor and architectural component of the heart. Plakophilin-3 plays a role in both desmosome-dependent adhesion and signaling pathways. Plakophilin-4 is a component of desmosomal adhesion plaques that regulates junctional plaque organization and cadherin function.

CHROMOSOMAL LOCATION

Genetic locus: PKP2 (human) mapping to 12p11.21; Pkp2 (mouse) mapping to 16 A2.

SOURCE

plakophilin 2 (C-1) is a mouse monoclonal antibody raised against amino acids 757-881 mapping at the C-terminus of plakophilin 2 of human origin.

PRODUCT

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

plakophilin 2 (C-1) is available conjugated to agarose (sc-393711 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393711 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393711 PE), fluorescein (sc-393711 FITC), Alexa Fluor® 488 (sc-393711 AF488), Alexa Fluor® 546 (sc-393711 AF546), Alexa Fluor® 594 (sc-393711 AF594) or Alexa Fluor® 647 (sc-393711 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393711 AF680) or Alexa Fluor® 790 (sc-393711 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

plakophilin 2 (C-1) is recommended for detection of plakophilin 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for plakophilin 2 siRNA (h): sc-43182, plakophilin 2 siRNA (m): sc-43183, plakophilin 2 shRNA Plasmid (h): sc-43182-SH, plakophilin 2 shRNA Plasmid (m): sc-43183-SH, plakophilin 2 shRNA (h) Lentiviral Particles: sc-43182-V and plakophilin 2 shRNA (m) Lentiviral Particles: sc-43183-V.

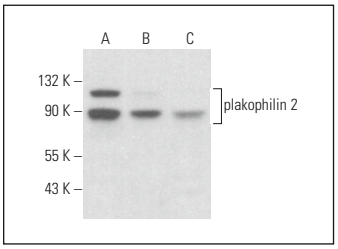
Molecular Weight of plakophilin 2: 100 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, U-87 MG cell lysate: sc-2411 or Caco-2 cell lysate: sc-2262.

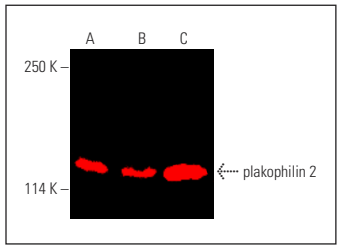
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



plakophilin 2 (C-1): sc-393711. Western blot analysis of plakophilin 2 expression in Caco-2 (**A**), Hep G2 (**B**) and NCI-H929 (**C**) whole cell lysates.



plakophilin 2 (C-1): sc-393711. Near-Infrared western blot analysis of plakophilin 2 expression in Hep G2 (**A**), Caco-2 (**B**) and U-87 MG (**C**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgG_{2a} BP-CFL 790: sc-542740.

SELECT PRODUCT CITATIONS

1. Hao, X.L., et al. 2019. plakophilin 2 accelerates cell proliferation and migration through activating EGFR signaling in lung adenocarcinoma. Pathol. Res. Pract. 215: 152438.
2. Yu, N., et al. 2021. Impaired function of epithelial plakophilin 2 is associated with periodontal disease. J. Periodontal Res. 56: 1046-1057.
3. Xie, W., et al. 2022. CYLD deubiquitinates plakoglobin to promote Cx43 membrane targeting and gap junction assembly in the heart. Cell Rep. 41: 111864.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

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