

plakophilin 4 (N-15): sc-26097

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.

REFERENCES

- Mertens, C., Kuhn, C., Moll, R., Schwetlick, I. and Franke, W.W. 1999. Desmosomal plakophilin 2 as a differentiation marker in normal and malignant tissues. *Differentiation* 64: 277-290.
- Bonne, S., van Hengel, J., Nollet, F., Kools, P. and van Roy, F. 1999. Plakophilin 3, a novel armadillo-like protein present in nuclei and desmosomes of epithelial cells. *J. Cell Sci.* 112: 2265-2276.
- Hatzfeld, M., Haffner, C., Schulze, K. and Vinzens, U. 2000. The function of plakophilin 1 in desmosome assembly and Actin filament organization. *J. Cell Biol.* 149: 209-222.
- Bornslaeger, E.A., Godsel, L.M., Corcoran, C.M., Park, J.K., Hatzfeld, M., Kowalczyk, A.P. and Green, K.J. 2001. Plakophilin 1 interferes with plakoglobin binding to desmoplakin, yet together with plakoglobin promotes clustering of desmosomal plaque complexes at cell-cell borders. *J. Cell Sci.* 114: 727-738.
- Mertens, C., Hofmann, I., Wang, Z., Teichmann, M., Sepehri Chong, S., Schnolzer, M. and Franke, W.W. 2001. Nuclear particles containing RNA polymerase III complexes associated with the junctional plaque protein plakophilin 2. *Proc. Natl. Acad. Sci. USA* 98: 7795-7800.
- Chen, X., Bonne, S., Hatzfeld, M., van Roy, F. and Green, K.J. 2002. Protein binding and functional characterization of plakophilin 2. Evidence for its diverse roles in desmosomes and β -catenin signaling. *J. Biol. Chem.* 277: 10512-10522.

CHROMOSOMAL LOCATION

Genetic locus: PKP4 (human) mapping to 2q24.1.

SOURCE

plakophilin 4 (N-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of plakophilin 4 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.

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-26097 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

plakophilin 4 (N-15) is recommended for detection of plakophilin 4 of 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).

plakophilin 4 (N-15) is also recommended for detection of plakophilin 4 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for plakophilin 4 siRNA (h): sc-43184, plakophilin 4 shRNA Plasmid (h): sc-43184-SH and plakophilin 4 shRNA (h) Lentiviral Particles: sc-43184-V.

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.

RESEARCH USE

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

PROTOCOLS

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