SANTA CRUZ BIOTECHNOLOGY, INC.

Podocin (N-21): sc-22294

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The onset of autosomal recessive steroid-resistant nephrotic syndrome (SRN1) in humans occurs by early childhood. Characteristics of SRN1 include proteinuria, rapid progression to end-stage renal disease, and focal segmental glomerulo-sclerosis. The pathological conditions of SRN1 correlate well with mutations at the NPHS2 gene, where expression of a protein known as Podocin occurs. Abnormal or inefficient signaling through Podocin protein-dependent networks contributes to the development of podocyte dysfunction and proteinuria. The human NPHS2 gene maps to chromosome 1q25-q31 and encodes a 383 amino acid protein. Podocin is an integral membrane protein that appears to fold into a hairpin-like structure with intracellular amino- and carboxy-termini. Transmembrane and cytoplasmic portions of Podocin share homology to the corresponding regions of the stomatin family proteins. Expression of high-order oligomers of Podocin in glomerular podocytes may reflect a scaffolding function that influences proper function of the glomerular filtration barrier, which is necessary for renal stability.

REFERENCES

1. Boute, N., et al. 2000. NPHS2, encoding the glomerular protein Podocin, is mutated in autosomal recessive steroid-resistant nephrotic syndrome. Nat. Genet. 24: 349-354.
2. Online Mendelian Inheritance in Man, OMIM™. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 604766. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Huber, T.B., et al. 2001. Interaction with Podocin facilitates nephrin signaling. J. Biol. Chem. 276: 41543-41546.
4. Caridi, G., et al. 2001. Prevalence, genetics, and clinical features of patients carrying Podocin mutations in steroid-resistant nonfamilial focal segmental glomerulosclerosis. J. Am. Soc. Nephrol. 12: 2742-2746.
5. Schwarz, K., et al. 2001. Podocin, a raft-associated component of the glomerular slit diaphragm, interacts with CD2AP and nephrin. J. Clin. Invest. 108: 1621-1629.

CHROMOSOMAL LOCATION

Genetic locus: NPHS2 (human) mapping to 1q25.2.

SOURCE

Podocin (N-21) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Podocin of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-515648 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

Podocin (N-21) is recommended for detection of Podocin 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).

Suitable for use as control antibody for Podocin siRNA (h): sc-40859, Podocin shRNA Plasmid (h): sc-40859-SH and Podocin shRNA (h) Lentiviral Particles: sc-40859-V.

Molecular Weight of Podocin: 42 kDa.

Positive Controls: TE671 cell lysate: sc-2416 or Caki-1 cell lysate: sc-2224.

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.

SELECT PRODUCT CITATIONS

1. Weber, S., et al. 2004. NPHS2 mutation analysis shows genetic heterogeneity of steroid-resistant nephrotic syndrome and low post-transplant recurrence. Kidney Int. 66: 571-579.
2. Becker-Cohen, R., et al. 2007. Recurrent nephrotic syndrome in homozygous truncating NPHS2 mutation is not due to anti-Podocin antibodies. Am. J. Transplant. 7: 256-260.
3. Kapodistria, K., et al. 2015. Nephrin, a transmembrane protein, is involved in pancreatic β-cell survival signaling. Mol. Cell. Endocrinol. 400: 112-228.
4. Suvanto, M., et al. 2015. Podocyte proteins in congenital and minimal change nephrotic syndrome. Clin. Exp. Nephrol. 19: 481-488.

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.