

# Podocin (G-20): sc-22298

## 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 glomerulosclerosis. 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<sup>™</sup>. 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 (mouse) mapping to 1 G3.

## SOURCE

Podocin (G-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Podocin of mouse 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-22298 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## APPLICATIONS

Podocin (G-20) is recommended for detection of Podocin of mouse 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 (m): sc-40860, Podocin shRNA Plasmid (m): sc-40860-SH and Podocin shRNA (m) Lentiviral Particles: sc-40860-V.

Molecular Weight of Podocin: 42 kDa.

Positive Controls: mouse cerebellum extract: sc-2403 or mouse kidney extract: sc-2255.

## 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<sup>™</sup> compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> 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<sup>™</sup> Mounting Medium: sc-24941.

## SELECT PRODUCT CITATIONS

1. Meyer, T.N., et al. 2007. A new mouse model of immune-mediated podocyte injury. *Kidney Int.* 72: 841-852.
2. Li, Y., et al. 2009. Inhibition of integrin-linked kinase attenuates renal interstitial fibrosis. *J. Am. Soc. Nephrol.* 20: 1907-1918.
3. Wang, X.X., et al. 2009. The farnesoid X receptor modulates renal lipid metabolism and diet-induced renal inflammation, fibrosis, and proteinuria. *Am. J. Physiol. Renal Physiol.* 297: F1587-F1596.
4. Wang, X.X., et al. 2011. Vitamin D receptor agonist doxercalciferol modulates dietary fat-induced renal disease and renal lipid metabolism. *Am. J. Physiol. Renal Physiol.* 300: F801-F810.
5. Henique, C., et al. 2015. Nuclear factor erythroid 2-related factor 2 drives podocyte-specific expression of peroxisome proliferator-activated receptor  $\gamma$  essential for resistance to crescentic GN. *J. Am. Soc. Nephrol.* E-published.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.