SANTA CRUZ BIOTECHNOLOGY, INC.

Podocin (G-5): sc-518088

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 1q25.2 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.

CHROMOSOMAL LOCATION

Genetic locus: Nphs2 (mouse) mapping to 1 G3.

SOURCE

Podocin (G-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 34-55 within an N-terminal cytoplasmic domain of Podocin of mouse origin.

PRODUCT

Each vial contains 200 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Podocin (G-5) is available conjugated to agarose (sc-518088 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-518088 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-518088 PE), fluorescein (sc-518088 FITC), Alexa Fluor® 488 (sc-518088 AF488), Alexa Fluor® 546 (sc-518088 AF546), Alexa Fluor® 594 (sc-518088 AF594) or Alexa Fluor® 647 (sc-518088 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-518088 AF680) or Alexa Fluor® 790 (sc-518088 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Podocin (G-5) is recommended for detection of Podocin of mouse and rat 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 Podocin siRNA (m): sc-40860, Podocin shRNA Plasmid (m): sc-40860-SH and Podocin shRNA (m) Lentiviral Particles: sc-40860-V.

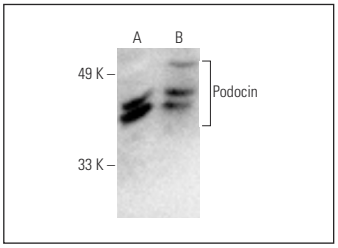
Molecular Weight of Podocin: 42 kDa.

Positive Controls: NRK whole cell lysate: sc-364197 or mouse cerebellum extract: sc-2403.

STORAGE

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

DATA



Podocin (G-5): sc-518088. Western blot analysis of Podocin expression in NRK whole cell lysate (**A**) and mouse cerebellum tissue extract (**B**). Detection reagent used: m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM.

SELECT PRODUCT CITATIONS

1. de Melo Junior, A.F., et al. 2020. Involvement of sex hormones, oxidative stress, ACE and ACE2 activity in the impairment of renal function and remodelling in SHR. Life Sci. 257: 118138.
2. Luo, R., et al. 2020. (Pro)renin receptor decoy peptide PRO20 protects against adriamycin-induced nephropathy by targeting the intrarenal renin-angiotensin system. Am. J. Physiol. Renal Physiol. 319: F930-F940.
3. Chen, L., et al. 2021. Yiqi Huoxue recipe regulates autophagy through degradation of advanced glycation end products via mTOR/S6K1/LC3 pathway in diabetic nephropathy. Evid. Based Complement. Alternat. Med. 2021: 9942678.
4. Ma, Y., et al. 2022. Podocyte protection by Angptl3 knockout via inhibiting ROS/GRP78 pathway in LPS-induced acute kidney injury. Int. Immunopharmacol. 105: 108549.
5. Kulkarni, K., et al. 2023. Angiotensin II type 2 receptor activation preserves megalin in the kidney and prevents proteinuria in high salt diet fed rats. Sci. Rep. 13: 4277.
6. Zhang, X., et al. 2023. HMGB 1 acetylation mediates trichloroethylene-induced immune kidney injury by facilitating endothelial cell-podocyte communication. Ecotoxicol. Environ. Saf. 259: 115042.
7. Wang, L., et al. 2023. Sanqi Qushi granule alleviates proteinuria and podocyte damage in NS rat: a network pharmacology study and *in vivo* experimental validation. Drug Des. Devel. Ther. 17: 1847-1861.
8. Fang, H., et al. 2023. Therapeutic potential of *Ganoderma lucidum* polysaccharide peptide in Doxorubicin-induced nephropathy: modulation of renin-angiotensin system and proteinuria. Front. Pharmacol. 14: 1287908.

RESEARCH USE

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