SANTA CRUZ BIOTECHNOLOGY, INC.

nephrin (G-20): sc-32530

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Nephrin is a member of the immunoglobulin family of cell adhesion molecules that localizes to opposing sites of the secondary foot processes formed by podocytes, a specialized epithelial cell that ensures size- and charge-selective ultrafiltration. The human nephrin gene maps to chromosome 19q13.12 and encodes a 1,241 amino acid protein that contains a transmembrane domain, 8 Ig-like modules and one fibronectin III-like module. Nephrin is expressed in embryonic and adult kidneys and localizes to glomerular podocytes and the glomerular slit diaphragm. Nephrin stimulates mitogen-activated protein kinases and is enhanced by podocin, which binds to the cytoplasmic tail of nephrin. A293 cells treated with Phorbol-12-myristate-13-acetate can up-regulate nephrin, suggesting that protein kinase C is part of an intracellular signalling system, which regulates nephrin.

REFERENCES

1. Holzman, L.B., et al. 1999. Nephrin localizes to the slit pore of the glomerular epithelial cell. Kidney Int. 56: 1481-1491.
2. Huber, T.B., et al. 2001. Interaction with podocin facilitates nephrin signaling. J. Biol. Chem. 276: 41543-41546.

CHROMOSOMAL LOCATION

Genetic locus: NPHS1 (human) mapping to 19q13.12; Nphs1 (mouse) mapping to 7 B1.

SOURCE

nephrin (G-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of nephrin 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-32530 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

nephrin (G-20) is recommended for detection of nephrin and nephrin precursor of mouse, rat and 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), immunohistochemistry (including paraffin-embedded sections) (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 nephrin siRNA (h): sc-36030, nephrin siRNA (m): sc-36031, nephrin shRNA Plasmid (h): sc-36030-SH, nephrin shRNA Plasmid (m): sc-36031-SH, nephrin shRNA (h) Lentiviral Particles: sc-36030-V and nephrin shRNA (m) Lentiviral Particles: sc-36031-V.

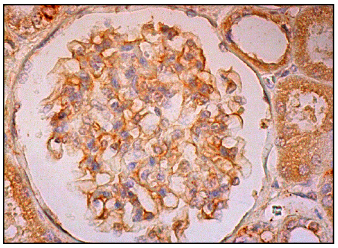
Molecular Weight of nephrin: 185 kDa.

Positive Controls: KNRK whole cell lysate: sc-2214 or human kidney extract: sc-363764.

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. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



nephrin (G-20): sc-32530. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing membrane staining of cells in glomeruli and cytoplasmic staining of cells in tubules.

SELECT PRODUCT CITATIONS

1. Yamauchi, K., et al. 2006. Screening and identification of substances that regulate nephrin gene expression using engineered reporter podocytes. Kidney Int. 70: 892-900.
2. Zhang, B., et al. 2012. The calcineurin-NFAT pathway allows for urokinase receptor-mediated β3 integrin signaling to cause podocyte injury. J. Mol. Med. 90: 1407-1420.
3. Ma, K.L., et al. 2014. Establishment of an inflamed animal model of diabetic nephropathy. Int. J. Biol. Sci. 10: 149-159.

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.