SANTA CRUZ BIOTECHNOLOGY, INC.

nephrin (E-1): sc-376568

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, eight 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.
3. Liu, L., et al. 2001. Nephrin is an important component of the barrier system in the testis. Acta Med. Okayama 55: 161-165.
4. Simons, M., et al. 2001. Involvement of lipid rafts in nephrin phosphorylation and organization of the glomerular slit diaphragm. Am. J. Pathol. 159: 1069-1077.
5. Wang, S.X., et al. 2001. Nephrin mRNA regulation by protein kinase C. J. Nephrol. 14: 98-103.
6. Online Mendelian Inheritance in Man, OMIM™. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 602716. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: NPHS1 (human) mapping to 19q13.12.

SOURCE

nephrin (E-1) is a mouse monoclonal antibody raised against amino acids 23-322 mapping within an extracellular domain of nephrin of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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 for detailed protocols and support products.

APPLICATIONS

nephrin (E-1) is recommended for detection of nephrin of human 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 nephrin siRNA (h): sc-36030, nephrin shRNA Plasmid (h): sc-36030-SH and nephrin shRNA (h) Lentiviral Particles: sc-36030-V.

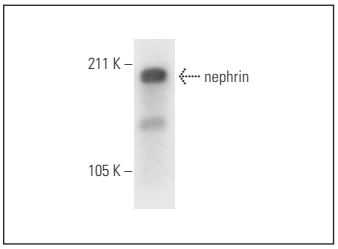
Molecular Weight of nephrin: 185 kDa.

Positive Controls: human kidney extract: sc-363764.

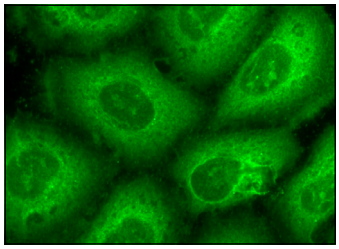
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



nephrin (E-1): sc-376568. Western blot analysis of nephrin expression in human kidney tissue extract.



nephrin (E-1): sc-376568. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

RESEARCH USE

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

CONJUGATES

See **nephrin (G-8): sc-376522** for nephrin antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.