

NEPH1 (H-150): sc-33136

BACKGROUND

Glomerular visceral epithelial cells, also known as podocytes, maintain the selective filtration barrier of the renal glomerulus. NEPH1, a member of the immunoglobulin superfamily, plays a critical role in functional barrier development. Loss of NEPH1 expression, like that of its structural relative nephrin, results in nephrotic syndromes and proteinuria leading to perinatal death. NEPH1 associates with nephrin as well as ZO-1 and localizes with them to the glomerular slit diaphragm. Interaction with nephrin occurs via the extracellular domain of NEPH1 and with ZO-1 in a PDZ binding motif of the cytoplasmic tail. Mutation of a putative threonine phosphorylation site within the cytoplasmic domain abrogates interaction with ZO-1, implying that phosphorylation regulates this interaction, and may effect the recruitment of the appropriate signal transduction components to the complex.

REFERENCES

1. Donoviel, D.B., et al. 2001. Proteinuria and perinatal lethality in mice lacking NEPH1, a novel protein with homology to nephrin. *Mol. Cell. Biol.* 21: 4829-1836.
2. Huber, T.B., et al. 2003. The carboxyl terminus of NEPH family members binds to the PDZ domain protein zonula occludens-1. *J. Biol. Chem.* 278: 13417-13421.
3. Barletta, G.M., et al. 2003. Nephrin and NEPH1 co-localize at the podocyte foot process intercellular junction and form *cis* hetero-oligomers. *J. Biol. Chem.* 278: 19266-19271.
4. Liu, G., et al. 2003. NEPH1 and nephrin interaction in the slit diaphragm is an important determinant of glomerular permeability. *J. Clin. Invest.* 112: 209-221.

CHROMOSOMAL LOCATION

Genetic locus: KIRREL (human) mapping to 1q23.1; Kirrel (mouse) mapping to 3 F1.

SOURCE

NEPH1 (H-150) is a rabbit polyclonal antibody raised against amino acids 608-757 mapping within a C-terminal cytoplasmic domain of NEPH1 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.

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.

APPLICATIONS

NEPH1 (H-150) is recommended for detection of NEPH1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

NEPH1 (H-150) is also recommended for detection of NEPH1 in additional species, including equine and porcine.

Suitable for use as control antibody for NEPH1 siRNA (h): sc-44769, NEPH1 siRNA (m): sc-44770, NEPH1 shRNA Plasmid (h): sc-44769-SH, NEPH1 shRNA Plasmid (m): sc-44770-SH, NEPH1 shRNA (h) Lentiviral Particles: sc-44769-V and NEPH1 shRNA (m) Lentiviral Particles: sc-44770-V.

Molecular Weight of NEPH1: 90-110 kDa.

Positive Controls: mouse kidney extract: sc-2255.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Chittiprol, S., et al. 2011. Marker expression, behaviors, and responses vary in different lines of conditionally immortalized cultured podocytes. *Am. J. Physiol. Renal Physiol.* 301: F660-F671.
2. Suvanto, M., et al. 2015. Podocyte proteins in congenital and minimal change nephrotic syndrome. *Clin. Exp. Nephrol.* 19: 481-488.

RESEARCH USE

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



Try **NEPH1 (F-6): sc-373787**, our highly recommended monoclonal alternative to NEPH1 (H-150).