SANTA CRUZ BIOTECHNOLOGY, INC.

NEPH1 (F-6): sc-373787

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

CHROMOSOMAL LOCATION

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

SOURCE

NEPH1 (F-6) is a mouse monoclonal 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_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

NEPH1 (F-6) is available conjugated to agarose (sc-373787 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-373787 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-373787 PE), fluorescein (sc-373787 FITC), Alexa Fluor® 488 (sc-373787 AF488), Alexa Fluor® 546 (sc-373787 AF546), Alexa Fluor® 594 (sc-373787 AF594) or Alexa Fluor® 647 (sc-373787 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-373787 AF680) or Alexa Fluor® 790 (sc-373787 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

NEPH1 (F-6) is recommended for detection of NEPH1 of mouse, rat and 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 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.

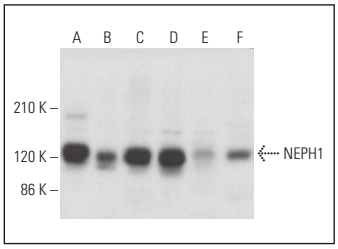
Molecular Weight of NEPH1: 90-110 kDa.

Positive Controls: human placenta extract: sc-363772, MDA-MB-231 cell lysate: sc-2232 or human kidney extract: sc-363764.

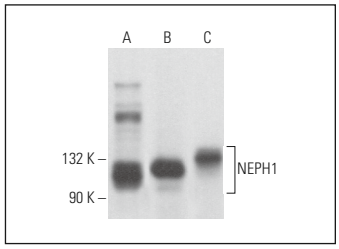
RECOMMENDED SUPPORT REAGENTS

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



NEPH1 (F-6): sc-373787. Western blot analysis of NEPH1 expression in JAR (**A**), 3T3-L1 (**B**), Sol8 (**C**), L6 (**D**), BT-20 (**E**) and Caki-1 (**F**) whole cell lysates.



NEPH1 (F-6): sc-373787. Western blot analysis of NEPH1 expression in MDA-MB-231 whole cell lysate (**A**) and human placenta (**B**) and human kidney (**C**) tissue extracts.

SELECT PRODUCT CITATIONS

1. Garreta, E., et al. 2019. Fine tuning the extracellular environment accelerates the derivation of kidney organoids from human pluripotent stem cells. Nat. Mater. 18: 397-405.
2. Wan, F., et al. 2021. TET2 mediated demethylation is involved in the protective effect of triptolide on podocytes. Am. J. Transl. Res. 13: 1233-1244.
3. Nystrom, S.E., et al. 2022. JAK inhibitor blocks COVID-19-cytokine-induced JAK-STAT-APOL1 signaling in glomerular cells and podocytopathy in human kidney organoids. JCI Insight 7:e157432.
4. Wang, C., et al. 2022. Integrated screens uncover a cell surface tumor suppressor gene KIRREL involved in Hippo pathway. Proc. Natl. Acad. Sci. USA 119: e2121779119.
5. Li, Y., et al. 2022. Npas3 deficiency impairs cortical astrogenesis and induces autistic-like behaviors. Cell Rep. 40: 111289.

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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.