**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 upregulate nephrin, suggesting that protein kinase C is part of an intracellular signalling system, which regulates nephrin.

**CHROMOSOMAL LOCATION**

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

**SOURCE**

nephrin (B-12) is a mouse monoclonal antibody raised against a peptide mapping near the N-terminus of nephrin of human origin.

**PRODUCT**

Each vial contains 200 µg IgG2a kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Nephrin (B-12) is available conjugated to agarose (sc-377246 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377246 HR), 200 µg/ml, for WB, HICP, and ELISA; to either phycoerythrin (sc-377246 PE), fluorescein (sc-377246 FITC), Alexa Fluor® 488 (sc-377246 AF488), Alexa Fluor® 546 (sc-377246 AF546), Alexa Fluor® 594 (sc-377246 AF594) or Alexa Fluor® 647 (sc-377246 AF647), 200 µg/ml, for WB (RGB), IF, HICP and FCM; and to either Alexa Fluor® 680 (sc-377246 AF680) or Alexa Fluor® 790 (sc-377246 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-377246 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

**APPLICATIONS**

nephrin (B-12) is recommended for detection of nephrin 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 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: human kidney tissue extract: sc-363764.

**RECOMMENDED SUPPORT REAGENTS**

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGk BP-HRP: sc-516102 or m-IgGk BP-HRP (Cruz Marker); sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker® Molecular Weight Standards: sc-3035, 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-IgGk BP-FITC: sc-516140 or m-IgGk 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**

[Western blot analysis of nephrin expression in human kidney tissue extract.]

**SELECT PRODUCT CITATIONS**


**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.

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