

# nephrin (B-12): sc-377246



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 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 7 B1.

## SOURCE

nephrin (B-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 55-93 near the N-terminus of nephrin of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2a</sub> 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 HRP), 200 µg/ml, for WB, IHC(P) 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, IHC(P) 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.

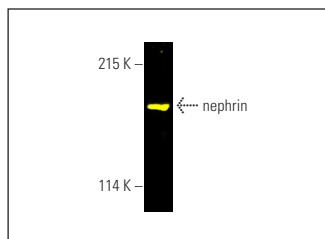
Molecular Weight of nephrin: 185 kDa.

Positive Controls: human kidney extract: sc-363764.

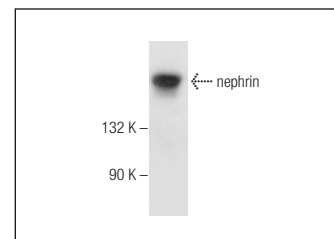
## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## DATA



nephrin (B-12) Alexa Fluor® 488: sc-377246 AF488. Direct fluorescent western blot analysis of nephrin expression in T-47D whole cell lysate. Blocked with UltraCruz® Blocking Reagent: sc-516214.



nephrin (B-12): sc-377246. Western blot analysis of nephrin expression in human kidney tissue extract.

## SELECT PRODUCT CITATIONS

- Lan, X., et al. 2013. Morphine induces albuminuria by compromising podocyte integrity. *PLoS ONE* 8: e55748.
- Ndisang, J.F. and Tiwari, S. 2014. Mechanisms by which heme oxygenase rescue renal dysfunction in obesity. *Redox Biol.* 2: 1029-1037.
- Yang, M., et al. 2014. Connexin 43 is involved in aldosterone-induced podocyte injury. *Cell. Physiol. Biochem.* 34: 1652-1662.
- Zhang, W., et al. 2017. Icaritin improves acute kidney injury and proteinuria in a rat model of pregnancy-induced hypertension. *Mol. Med. Rep.* 16: 7398-7404.
- Majumder, S., et al. 2018. Shifts in podocyte Histone H3K27me3 regulate mouse and human glomerular disease. *J. Clin. Invest.* 128: 483-499.
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- Gong, J., et al. 2019. Krüppel-like factor 4 ameliorates diabetic kidney disease by activating autophagy via the mTOR pathway. *Mol. Med. Rep.* 20: 3240-3248.
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- Arellano-Buendía, A.S., et al. 2020. Effects of allicin on pathophysiological mechanisms during the progression of nephropathy associated to diabetes. *Antioxidants* 9: 1134.

## RESEARCH USE

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

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