

# nephrin (G-8): sc-376522

## 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

nephrin (G-8) 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<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

nephrin (G-8) is available conjugated to agarose (sc-376522 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376522 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376522 PE), fluorescein (sc-376522 FITC), Alexa Fluor® 488 (sc-376522 AF488), Alexa Fluor® 546 (sc-376522 AF546), Alexa Fluor® 594 (sc-376522 AF594) or Alexa Fluor® 647 (sc-376522 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376522 AF680) or Alexa Fluor® 790 (sc-376522 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, nephrin (G-8) is available conjugated to biotin (sc-376522 B), 200 µg/ml, for WB, IHC(P) and ELISA.

## APPLICATIONS

nephrin (G-8) 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.

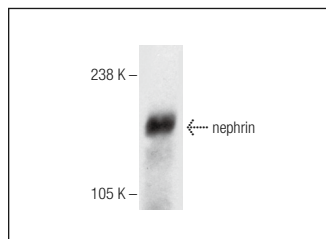
Molecular Weight of nephrin: 185 kDa.

Positive Controls: human kidney extract: sc-363764, rat kidney extract: sc-2394 or KNRK whole cell lysate: sc-2214.

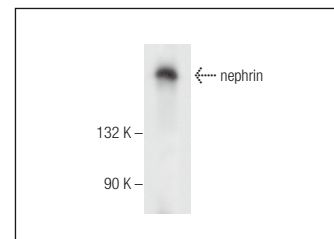
## STORAGE

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

## DATA



nephrin (G-8): sc-376522. Western blot analysis of nephrin expression in rat kidney tissue extract.



nephrin (G-8): sc-376522. Western blot analysis of nephrin expression in human kidney tissue extract.

## SELECT PRODUCT CITATIONS

- Cooper, C.J., et al. 2018. Characterization of a novel disease-associated mutation within NPHS1 and its effects on nephrin phosphorylation and signaling. *PLoS ONE* 13: e0203905.
- Nakuluri, K., et al. 2019. Hypoxia induces ZEB2 in podocytes: implications in the pathogenesis of proteinuria. *J. Cell. Physiol.* 234: 6503-6518.
- Chen, H., et al. 2020. Prenatal ethanol exposure increased the susceptibility of adult offspring rats to glomerulosclerosis. *Toxicol. Lett.* 321: 44-53.
- Yamada, N., et al. 2021. Morphological analyses of nephrin expression in progressive glomerulonephropathy of common marmosets. *J. Toxicol. Pathol.* 34: 83-88.
- Shi, H., et al. 2022. Rapamycin attenuated podocyte apoptosis via up-regulation of nestin in Ang II-induced podocyte injury. *Mol. Biol. Rep.* 49: 2119-2128.
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- Alquraishi, M., et al. 2022. Podocyte specific deletion of PKM2 ameliorates LPS-induced podocyte injury through  $\beta$ -catenin. *Cell Commun. Signal.* 20: 76.
- Sun, H., et al. 2023. Dynein-mediated trafficking: a new mechanism of diabetic podocytopathy. *Kidney* 360 4: 162-176.
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- Nakamichi, R., et al. 2023. DNA-damaged podocyte-CD8 T cell crosstalk exacerbates kidney injury by altering DNA methylation. *Cell Rep.* 42: 112302.

## RESEARCH USE

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

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