

## Anti-Nephrin/NPHS1 Antibody Picoband®

Catalog Number: A01991

### About NPHS1

NPHS1, also called Nephrin, is mapped to 19q13.12. This gene encodes a member of the immunoglobulin family of cell adhesion molecules that functions in the glomerular filtration barrier in the kidney. Its gene is primarily expressed in renal tissues, and the protein is a type-1 transmembrane protein found at the slit diaphragm of glomerular podocytes. The slit diaphragm is thought to function as an ultrafilter to exclude albumin and other plasma macromolecules in the formation of urine. A defect in the gene for nephrin, NPHS1, is associated with congenital nephrotic syndrome of the Finnish type and causes massive amounts of protein to be leaked into the urine, or proteinuria. NPHS1 is also required for cardiovascular development.

### Overview

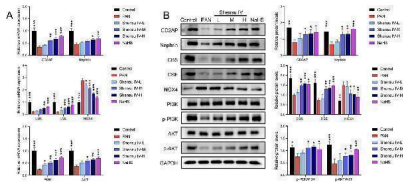
Product Name	Anti-Nephrin/NPHS1 Antibody Picoband®
Reactive Species	Human, Mouse, Rat
Description	Boster Bio Anti-Nephrin/NPHS1 Antibody Picoband® catalog # A01991. Tested in IHC, WB applications. This antibody reacts with Human, Mouse, Rat. The brand Picoband indicates this is a premium antibody that guarantees superior quality, high affinity, and strong signals with minimal background in Western blot applications. Only our best-performing antibodies are designated as Picoband, ensuring unmatched performance.
Application	IHC, WB
Clonality	Polyclonal
Formulation	Each vial contains 4mg Trehalose, 0.9mg NaCl, 0.2mg Na <sub>2</sub> HPO <sub>4</sub> , 0.05mg NaN <sub>3</sub> .
Storage Instructions	Store at -20°C for one year from date of receipt. After reconstitution, at 4°C for one month. It can also be aliquotted and stored frozen at -20°C for six months. Avoid repeated freeze-thaw cycles.
Host	Rabbit
Uniprot ID	O60500

### Technical Details

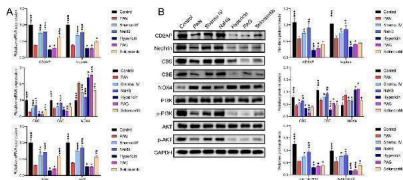
Immunogen	E.coli-derived human Nephrin recombinant protein (Position: V1084-V1241). Human Nephrin shares 79.9% and 75.3% amino acid (aa) sequence identity with mouse and rat Nephrin, respectively.
Recommended Detection Systems	Boster recommends Enhanced Chemiluminescent Kit with anti-Rabbit IgG (EK1002) for Western blot, and HRP Conjugated anti-Rabbit IgG Super Vision Assay Kit (SV0002-1) for IHC(P).
Cross Reactivity	No cross-reactivity with other proteins.
Isotype	Rabbit IgG

Form	Lyophilized
Concentration	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml.
Purification	Immunogen affinity purified.
Suggested Dilutions	Western blot, 0.1-0.5ug/ml, Human, Mouse, Rat Immunohistochemistry (Paraffin-embedded Section), 0.5-1ug/ml, Mouse, Rat, Human

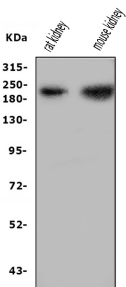
## Anti-Nephrin/NPHS1 Antibody Picoband® (A01991) Images



Shensu IV regulates the PI3K/AKT signaling pathway through H2S. (A) The effects of Shensu IV and NaHS on the mRNA expression of CD2AP, nephrin, CBS, CSE, NOX4, PI3K, and AKT in renal tissue of PAN rats were analyzed by RT-qPCR. (B) Western blot analysis of the effects of Shensu IV and NaHS on the protein levels of CD2AP, nephrin, CBS, CSE, NOX4, PI3K, p-PI3K, AKT, p-AKT in renal tissue of PAN rats. \* P < 0.05, \*\* P < 0.01, \*\*\* P < 0.001. Abbreviations: CD2AP, CD2-associated protein; CBS, Cystathionine beta-synthase; CSE, Cystathionine gamma-lyase; PI3K, Phosphoinositide 3-Kinase; AKT, Protein Kinase B. Index in PubMed under a CC BY license. PMID: 39720588

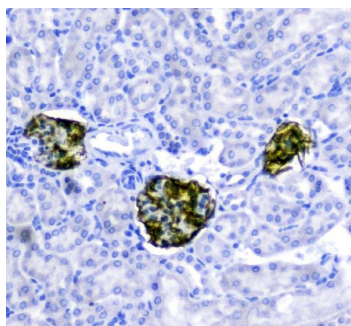


Shensu IV regulates the PI3K/AKT signaling pathway through H2S in podocytes. (A) The effects of Shensu IV and NaHS on the mRNA expression of CD2AP, nephrin, CBS, CSE, NOX4, PI3K, and AKT in podocytes were analyzed by RT-qPCR. (B) Western blot analysis of the effects of Shensu IV and NaHS on the protein levels of CD2AP, nephrin, CBS, CSE, NOX4, PI3K, p-PI3K, AKT, p-AKT in PAN-induced podocytes. \* P < 0.05, \*\* P < 0.01, \*\*\* P < 0.001. Abbreviations: CD2AP, CD2-associated protein; CBS, Cystathionine beta-synthase; CSE, Cystathionine gamma-lyase; PI3K, Phosphoinositide 3-Kinase; AKT, Protein Kinase B. Index in PubMed under a CC BY license. PMID: 39720588

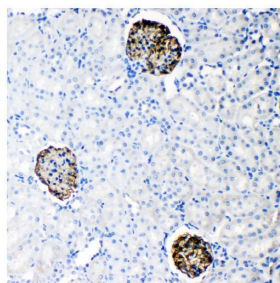


Western blot analysis of Nephrin using anti-Nephrin antibody (A01991). Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions. Lane 1: rat kidney tissue lysates, Lane 2: mouse kidney tissue lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-Nephrin antigen affinity purified polyclonal antibody (Catalog # A01991) at 0.5 ug/mL overnight at 4°C, then washed with TBS-0.1% Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1002) with Tanon 5200 system. A specific band was detected for Nephrin at approximately 185 kDa. The expected band size for Nephrin is at 135 kDa.

IHC analysis of Nephrin using anti-Nephrin antibody (A01991). Nephrin was detected in a paraffin-embedded section of mouse kidney tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2



ug/ml rabbit anti-Nephryn Antibody (A01991) overnight at 4°C. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using HRP Conjugated Rabbit IgG Super Vision Assay Kit (Catalog # SV0002) with DAB as the chromogen.



IHC analysis of Nephryn using anti-Nephryn antibody (A01991). Nephryn was detected in a paraffin-embedded section of rat kidney tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-Nephryn Antibody (A01991) overnight at 4°C. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using HRP Conjugated Rabbit IgG Super Vision Assay Kit (Catalog # SV0003) with DAB as the chromogen.

## 7 Publications Citing This Product

1. PubMed ID: 10.1155/2020/8263598, Protective Effects of Thalidomide on High-Glucose-Induced Podocyte Injury through In Vitro Modulation of Macrophage M1/M2 Differentiation
2. PubMed ID: 31301369, Qiu Y,Zhou J,Zhang H,Zhou H,Tang H,Lei C,Ye C,You C,Chen Y,Wang Y,Xiong J,Su H,Yao G,Zhang C.Rhodojaponin II attenuates kidney injury by regulating TGF-beta1/Smad pathway in mice with adriamycin nephropathy.J Ethnopharmacol.2019 Oct 28;243:112078.doi:10.1016/j.jep.2019.112078.Epub 2019 Jul 10.PMID: 31301369.
3. PubMed ID: 33537831, Zhang X,Zhang L,Chen Z,Li S,Che B, Wang N,Chen J,Xu C,Wei C.Exogenous spermine attenuates diabetic kidney injury in rats by inhibiting AMPK/mTOR signaling pathway.Int J Mol Med.2021 Mar;47(3):27.doi:10.3892/ijmm.2021.4860.Epub 2021 Feb 4.PMID:33537831.

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