

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse Nephrin in direct ELISAs and Western blots. In direct ELISAs and Western blots, approximately 5% cross-reactivity with recombinant human Nephrin is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse Nephrin Gln37-Thr1049 Accession # NP_062332
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.

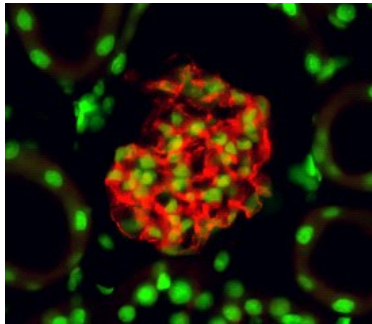
APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	Recommended Concentration	Sample
Western Blot	0.1 µg/mL	Recombinant Mouse Nephrin (Catalog # 3159-NN)
Immunohistochemistry	5-15 µg/mL	See Below

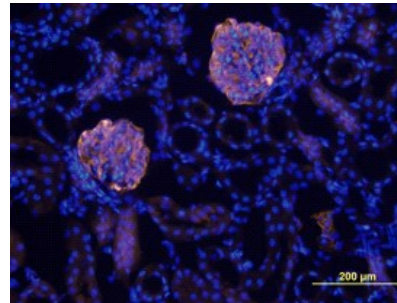
DATA

Immunohistochemistry



Nephrin in Mouse Kidney. Nephrin was detected in perfusion fixed frozen sections of mouse kidney using 10 µg/mL Goat Anti-Mouse Nephrin Antigen Affinity-purified Polyclonal Antibody (Catalog # AF3159) overnight at 4 °C. Tissue was stained with the NorthernLights™ 557-conjugated Anti-Goat IgG Secondary Antibody (red; Catalog # NL001) and counterstained (green). View our protocol for [Fluorescent IHC Staining of Frozen Tissue Sections](#).

Immunohistochemistry



Nephrin in Mouse Kidney. Nephrin was detected in perfusion fixed frozen sections of mouse kidney using Goat Anti-Mouse Nephrin Antigen Affinity-purified Polyclonal Antibody (Catalog # AF3159) at 10 µg/mL overnight at 4 °C. Tissue was stained using the NorthernLights™ 557-conjugated Anti-Goat IgG Secondary Antibody (yellow; Catalog # NL001) and counterstained with DAPI (blue). View our protocol for [Fluorescent IHC Staining of Frozen Tissue Sections](#).

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Nephrin is a 185 kDa type I transmembrane glycoprotein that belongs to the immunoglobulin superfamily (1). Mature mouse Nephrin consists of a 1042 amino acid (aa) extracellular domain (ECD) with eight Ig-like C2-set domains and one fibronectin type III domain, a 22 aa transmembrane segment, and a 156 aa cytoplasmic tail (2, 3). Within the ECD, mouse Nephrin shares 84% and 95% aa sequence identity with human and rat Nephrin, respectively. Usage of the alternate exon 1B results in a distinct N-terminal sequence that lacks a clearly defined signal peptide cleavage site (4). Nephrin is expressed primarily on podocytes in the renal glomerulus and to a lesser extent in the brain and pancreas (3, 5). The 1B isoform is not expressed in the kidney (4). Nephrin localizes to intercellular junctions between podocyte foot processes where it functions as a homophilic adhesion molecule (2, 6). Nephrin is required for formation and maintenance of the slit diaphragm between these processes (7). It associates with Neph1, podicin, P-cadherin, and multiple scaffolding proteins which couple it to the actin cytoskeleton (8-12). Nephrin expression is required for the anti-apoptotic effect of VEGF on podocytes as well as for the ability of podocytes to upregulate Glut1 and Glut4 glucose transporters in response to insulin (13, 14). Nephrin downregulation contributes to diabetic nephropathy, and Nephrin mutations underlie the lethal congenital nephritic syndrome NPHS1 (5, 15).

References:

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