# Human Nephrin Alexa Fluor® 532-conjugated Antibody

Monoclonal Rabbit IgG Clone # 2795E
Catalog Number: FAB42693X
100 µg

## DESCRIPTION

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| **Species Reactivity** | Human |
| **Specificity** | Detects human Nephrin in direct ELISAs. |
| **Source** | Monoclonal Rabbit IgG Clone # 2795E |
| **Purification** | Protein A or G purified from cell culture supernatant |
| **Immunogen** | Mouse myeloma cell line NS0-derived human Nephrin protein<br>Gln23-Thr1029<br>Accession # O60500 |
| **Conjugate** | Alexa Fluor 532<br>Excitation Wavelength: 534 nm<br>Emission Wavelength: 553 nm |
| **Formulation** | Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide<br><br>*Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions. |

## 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.*

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| **Immunohistochemistry** | Optimal dilution of this antibody should be experimentally determined. |

## PREPARATION AND STORAGE

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| **Shipping** | The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below. |
| **Stability & Storage** | Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied |

## BACKGROUND

Nephrin is a 180 kDa type I transmembrane glycoprotein that belongs to the immunoglobulin superfamily (1). Mature human Nephrin consists of a 1033 amino acid (aa) extracellular domain (ECD) with eight Ig-like C2-set domains and one fibronectin type III domain, a 21 aa transmembrane segment, and a 165 aa cytoplasmic tail (2, 16). Within the ECD, human Nephrin shares 83% aa sequence identity with both mouse and rat Nephrin (3). 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 up-regulate Glut1 and Glut4 glucose transporters in response to insulin (13, 14). Nephrin down-regulation contributes to diabetic nephropathy, and nephrin mutations underlie the lethal congenital nephritic syndrome NPHS1 (5, 15).

## PRODUCT SPECIFIC NOTICES





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