

Code No. 29040

**Anti-Human
Podocin Rabbit IgG Affinity Purify**Volume : 100 µg

Introduction : The kidney is an important organ that maintains a homeostasis of body-fluid and nutrition. The capillary walls of renal glomeruli allow the efficient removal of the metabolic waste (filter) and conservation of essential circulating proteins, such as albumin (barrier). The filtration barriers are composed of three layers: a fenestrated endothelium, the glomerular basement membrane, and the highly specialized epithelial cells, podocytes. The podocytes elaborate numerous cellular processes and the terminal portions, called foot process, cover the outmost surface of the glomerular basement membrane. The neighboring foot processes are aligned in an interdigitating fashion while leaving a filtration slit around 20-50nm in wide that is bridged by an electron dense membrane-like structure, the slit diaphragm. Recent studies with familial nephrotic syndrome and genetically manipulated mice models demonstrated the defects of the slit diaphragm proteins (nephrin, podocin, etc) cause massive proteinuria (nephrotic syndrome), which eventually progresses to the end stage renal diseases. The observations indicate that regulation of the slit diaphragm integrity is crucial for maintenance of the filtration barrier function and podocyte viability.

Podocin has been identified as a disease causing gene responsible for familial steroid-resistant nephrotic syndrome (focal segmental glomerulosclerosis) (ref. 1). It is an integral membrane protein having a hairpin-loop-like intramembrane topology and is exclusively expressed at the base of the podocyte slit diaphragm (ref. 2). Podocin shares functional characteristics with a raft-resident scaffold protein caveolin; including a high affinity to lipid rafts, self-oligomerization, and heteromeric interaction with other proteins. Podocin binds to nephrin, ZO-1, CD2AP and other slit diaphragm proteins. The primary function is presumably to scaffold the slit membrane by sequestering the components and anchoring the complex to actin cytoskeleton.

Antigen : Synthetic peptide of a part of Human Podocin

Purification : Purified with antigen peptide

Form : Lyophilized product from 1 % BSA in PBS containing 0.05 % NaN₃

How to use : Add 1.0 mL deionized water into the product (the conc. comes up 100 µg /mL)

Stability : Lyophilized product, 5 years at 2 – 8 °C : Solution, 2 years at –20 °C

Application : The recommended dilutions are as follows but the optimal concentration should be determined by researcher for each specific application.

For immunohistochemistry, either in a frozen section or in a formalin-fixed paraffin embedded section after autoclave treatment (121°C, 10min), the starting concentration is about 1 - 2 µg/mL.

: For western blotting, the starting concentration is about 0.1 µg /mL.

: For immuno-precipitation, the starting concentration is about 1 - 2 µg /test.

Specificity : Cross-reacts with rat and mouse.

Reference : 1. Boute N, Gribouval O, Roselli S, Benessy F, Lee H, Fuchshuber A, Dahan K, Gubler MC, Niaudet P, Antignac C. *NPHS2*, encoding the glomerular protein podocin, is mutated in autosomal recessive steroid-resistant nephrotic syndrome. *Nat Genet.* 2000 Apr;24(4):349-54.
2. Shono A, Tsukaguchi H, Yaoita E, Nameta M, Kurihara H, Qin XS, Yamamoto T, Doi T. Podocin participates in the assembly of tight junctions between foot processes in nephrotic podocytes. *J Am Soc Nephrol.* 2007 Sep;18(9):2525-33.

For Non-Clinical Research Use Only