ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

Podocin Antibodies

Cat. # PODO11-P	**Human** Podocin control peptide # 1	**SIZE**: 100 ug
Cat. # PODO11-A	**Rabbit** Anti-Human Podocin IgG # 1 (aff pure)	**SIZE**: 100 ug

Nephrin is encoded by NPHS1 gene (chromosome 19q13.1), the core protein of the interpodocytes slit diaphragm of kidney glomerulus, these podocytes are highly differentiated with characteristic interdigitating foot processes covering the outer glomerular basement membrane, the space between these foot processes is spanned by a tight junction to provide the large surface area for filtration.

The mutated NPHS1 gene in congenital nephrotic syndrome of Finnish type, a human disease that leads to massive proteinuria in utero and nephrosis at birth. Nephrin is a transmembrane protein of immunoglobulin super family with 8 Ig like domains, identified in human (1241aa), rat (1252aa), and mouse (1256aa). Nephrin is found to be specifically expressed in kidney-slit diaphragm, brain and pancreas, the protein plays a crucial role in development and function of kidney filtration barrier, this barrier is crucial for maintaining the water and electrolyte balance without losing circulating proteins into the urine.

Nephrin interacts with podocin and with CD2AP C-terminal domain, It tends to be a signaling molecule that activates canonical protein kinase cascades, which is initiated by three closely related proteins called NEPH proteins (**NEPH1, NEPH2, & NEPH3**), The NEPH proteins share a common domain architecture consisting of 5 extracellular Ig domain followed by transmembrane domain, These proteins bind to C-terminal domain of podocin, which interacts with C-terminal of nephrin and greatly enhances nephrin-induced signaling.

Podocin (Human 383aa, NPHS2 gene on 1q25-q31 chrm; Mouse 385aa, sequence homology is 83.12% between human and mouse) Mutations in NPHS2 gene causes the autosomal recessive form of steroid resistant nephrotic syndrome occurring mainly in children and is characterized by massive proteinuria. The protein has no signal peptide but a transmembrane region exists. Podocin plays a role in regulation of glomerular permeability and interacts with nephrin. Podocin is expressed in kidney, testis, fetal heart and liver.

Source of Antigen and Antibodies

Antigen	16-aa peptide from Human Podocin; **Designation (PODO 11-P, control peptide**) conjugated to KLH; Epitope location ~C-terminus, Cytoplasmic domain
Ab Host/type	Rabbit, Polyclonal Aff pure IgG (**cat # PODO11-A**) supplied in PBS, pH 7.4 (No BSA or azide added)
2-ab	**Goat Anti-rabbit IgG-HRP** cat # 20320 (AP, biotin, FITC conjugates also available)
-ve control	# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as –ve control

Recommended Usage

Western Blotting (1-10 ug/ml for affinity pure antibody using ECL technique).

ELISA: Control peptide can be used to coat ELISA plates at 1 ug/ml and detected with antibodies (0.5-1 ug/ml for affinity pure). **Histochemistry** & Immunofluorescence: Not tested. We recommend the use of aff pure IgG at 2-20 ug/ml.

Specificity & Cross-reactivity

The Human **PODO-11** control peptide is 100% conserved in mouse. and 93% in rat No significant sequence homology is seen with other related family members Antibody cross-reactivity in various species has not been studied. Control peptide, because of its low mol. Wt (<3 kDa), is not suitable for Western. It should be used for ELISA or antibody blocking experiments (use 5-10 ug control peptide per 1 ug of aff pure IgG or 1 ul antiserum) to confirm antibody specificity

General References: Boute N et al (2000) Nat. Genet, 25, 125-125, and Nat Genet. 24 (4) 349-354; Huber, T. B et al (2001) JBC. 276 (45) 41543-41546; Heli Putaala et al (2001) Human Mol. Gen.10, 1-8.

*This product is for In vitro research use only.

(2) Citations of ADI's Antibodies (see web site for updated list)

Sengoelge G 2005 Am J Physiol Renal Physiol. 288, 1290-1300 IHC

Form & Storage of Antibodies/Peptide Control

Affinity pure IgG

100 ug/100ul solution lyophilized powder
Buffer: PBS, pH 7.4
Reconstitute powder in PBS at 1mg/ml

Control/blocking peptide

100 ug/100 ul solution lyophilized powder
Buffer: PBS, pH 7.5 and 0.05% sodium azide
Reconstitute powder in PBS at 1mg/ml

Storage

Short-term: unopened, undiluted vials for less than a week at 4oC.

Long-term: at –20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at –20oC or below.

Shipping: 4oC for solutions and room temp for powder.

Related material available from ADI

Antibodies & Peptides: Nephrin related proteins (NEPH 1-3, Filtrin, Podocin, Podocalyxin).

PODO 11-P-A WO BSA 50808A

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