Recombinant Human Podocin/NPHS2

Catalog Number: 9287-PO

DESCRIPTION

Source	*E. coli*-derived human Podocin/NPHS2 protein Lys259-Leu383, with an N-terminal Met and a C-terminal 6-His tag Accession # Q9NP85
N-terminal Sequence Analysis	Met
Predicted Molecular Mass	15 kDa

SPECIFICATIONS

SDS-PAGE	13 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When recombinant human Nephrin is immobilized at 1 µg/mL, 100 µL/well, Recombinant Human Podocin/NPHS2 binds with a typical ED_{50} of 0.8-4 µg/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 200 µg/mL in PBS.
Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Podocin, encoded by the NPHS2 gene, is an approximately 50 kDa membrane protein that plays an important role in podocyte function in the kidney. Loss of Podocin function results in albuminuria, hypercholesterolemia, hypertension, and renal failure (1). Human Podocin consists of a 102 amino acid (aa) cytoplasmic domain, a 21 aa intramembrane segment, and a second 262 aa cytoplasmic domain (2, 3). Alternative splicing generates a short isoform with a 68 aa deletion in the second cytoplasmic domain (4, 5). Within aa 259-383 (the region common to both isoforms), human Podocin shares 90% aa sequence identity with mouse and rat Podocin. Podicin localizes to areas of cell-cell contact between podocytes in the renal glomerulus (2, 6, 7). It associates into oligomers and forms complexes with Nephrin, CAR, ZO-1, and the cation ion channel TRPC6 (6-9). It contributes to podocyte function by regulating the activation of TRPC6 and Nephrin mediated signaling (8, 9). Multiple polymorphisms in NPHS2 are associated with steroid-resistant nephrotic syndrome (2).

References:

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