

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived Gln23-Thr1029, with a C-terminal 6-His tag Accession # O60500
N-terminal Sequence Analysis	No results obtained. Gln23 inferred from enzymatic pyroglutamate treatment revealing Leu24.
Predicted Molecular Mass	110 kDa

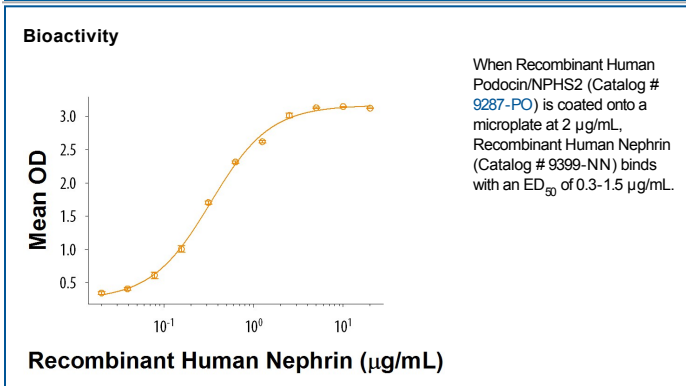
SPECIFICATIONS

SDS-PAGE	119-155 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Human Podocin/NPHS2 (Catalog # 9287-PO) is immobilized at 2 µg/mL, 100 µL/well, the concentration of Recombinant Human Nephrin that produces 50% of the optimal binding response is 0.3-1.5 µg/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>90%, 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 with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
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. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

DATA



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 Nephr1, 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).

References:

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