# Recombinant Mouse KIRREL1/NEPH1 Protein (His Tag)

**Catalog Number: PKSM040812**

**Note:** *Centrifuge before opening to ensure complete recovery of vial contents.*

## Description

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|---|---|
| **Species** | Mouse |
| **Source** | HEK293 Cells-derived Mouse KIRREL1/NEPH1 protein Met 1-Leu 525, with an C-terminal His |
| **Calculated MW** | 53.8 kDa |
| **Observed MW** | 65-70 kDa |
| **Accession** | NP_570937.2 |
| **Bio-activity** | Measured by the ability of the immobilized protein to support the adhesion of MS1 mouse pancreatic islet endothelial cells (ATCC: CRL2279). When cells are added to coated plates (30 μg/mL, 100 μL/well), > 40% cells will adhere specifically after 90 minutes at 37 ℃. |

## Properties

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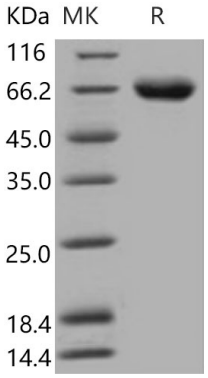
|---|---|
| **Purity** | > 98 % as determined by reducing SDS-PAGE. |
| **Endotoxin** | < 1.0 EU per μg of the protein as determined by the LAL method. |
| **Storage** | Generally, lyophilized proteins are stable for up to 12 months when stored at -20 to -80 ℃. Reconstituted protein solution can be stored at 4-8℃ for 2-7 days. Aliquots of reconstituted samples are stable at < -20℃ for 3 months. |
| **Shipping** | This product is provided as lyophilized powder which is shipped with ice packs. |
| **Formulation** | Lyophilized from sterile PBS, pH 7.4<br>Normally 5% - 8% trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.<br>Please refer to the specific buffer information in the printed manual. |
| **Reconstitution** | Please refer to the printed manual for detailed information. |

## Data




> 98 % as determined by reducing SDS-PAGE.

## Background

NEPH1 (KIRREL1) belongs to a family of three closely related transmembrane proteins of the Ig superfamily with a structure similar to that of nephrin. All three Neph proteins share a conserved podocin-binding motif; mutation of a centrally located tyrosine residue dramatically lowers the affinity of Neph1 for podocin. Neph1 triggers AP-1 activation similarly to nephrin but requires the presence of Tec family kinases for efficient transactivation. Neph1 consists of a signal peptide, five Ig-like C2-type domains with the middle domain overlapping with a PKD-like domain, an RGD sequence, a transmembrane domain and a cytoplasmic tail, which is expressed in slit diaphragm domains of podocytes and in vertebrate and invertebrate nervous systems. Neph1 is abundantly expressed in the kidney, specifically expressed in podocytes of kidney glomeruli, and plays a significant role in the normal development and function of the glomerular permeability. Neph1 interacts with nephrin in vitro and in vivo, and able to stimulate transcriptional activation in a model system, such as the activation the transcription factor AP-1 via the stimulation of a MAPK module. Neph1 is crucial for the integrity of the slit diaphragm, as Neph1 gene knockout mice results in effacement of glomerular podocytes, heavy proteinuria, and early postnatal death.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