## DESCRIPTION

**Source**
Mouse myeloma cell line, NS0-derived mouse Nephronectin protein
Asp20-Cys561, with a C-terminal 6-His tag
Accession # AAH68308

**N-terminal Sequence Analysis**
Asp20

**Predicted Molecular Mass**
60.3 kDa

## SPECIFICATIONS

**SDS-PAGE**
80-95 kDa, reducing conditions

**Activity**
Measured by the ability of the immobilized protein to support the adhesion of SVEC4-10 mouse vascular endothelial cells.
When 5 x 10⁴ cells/well are added to rmNephronectin coated plates (10 µg/mL, 100 µL/well), approximately 50-80% will adhere after 1 hour at 37 °C.

**Endotoxin Level**
<0.10 EU per 1 µg of the protein by the LAL method.

**Purity**
>90%, by SDS-PAGE under reducing conditions and visualized by silver stain.

**Formulation**
Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

## PREPARATION AND STORAGE

**Reconstitution**
Reconstitute at 100 µg/mL in sterile 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.
- 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

**Bioactivity**
Recombinant Mouse Nephronectin (Catalog # 4298-NP) supports the adhesion of SVEC4-10 mouse vascular endothelial cells. When 5 x 10⁴ cells/well are added to Recombinant Mouse Nephronectin coated plates (10 µg/mL, 100 µL/well), approximately 50-80% will adhere after 1 hour at 37 °C.

## BACKGROUND

Nephronectin, also named POEM (preosteoblast EGF repeat protein with MAM domain) is a 70 - 90 kDa extracellular matrix protein that is a ligand for integrin α₈β₁ (1, 2). The 561 amino acid (aa) mouse Nephronectin (isoform b) contains a 19 aa signal sequence, a matrilin-type vWA domain, two calcium-binding EGF-like domains, a potential N-linked glycosylation site, a pro/ser/thr-rich mucin-like region, an RGD integrin binding motif, and a MAM domain. These features are often present in matrix proteins that, like Nephronectin, mediate cell adhesion and spreading (1, 2). Isoform a includes a 17 aa insertion between aa 58 and 59 that is missing in isoform b. Mouse Nephronectin shows 88%, 92%, 85% and 77% aa identity with human, rat, bovine and opossum Nephronectin, respectively. It is most highly expressed in developing endocrine organs such as parathyroid, thyroid, hypophysis and pineal organ, and around developing bone, teeth, and muscle (1, 2). Pre-osteoblast cells produce Nephronectin, but downregulate it as they differentiate (1). It is also expressed in the Wolffian duct and ureteric bud basement membranes in the developing kidney, where it is colocalized, and forms an in-vivo complex with integrin α₈β₁ (2). Since deletion of integrin α₈β₁ results in renal agenesis, Nephronectin has been proposed to be a critical integrin α₈β₁ ligand during Nephrogenesis (2, 3).

**References:**