Recombinant Mouse Kirrel1/NEPH1

Catalog Number: 5030-K1

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived Leu48-Leu525, with a C-terminal 6-His tag Accession # Q80W68
N-terminal Sequence Analysis	Leu48
Predicted Molecular Mass	53.1 kDa

SPECIFICATIONS

SDS-PAGE	70-77 kDa, reducing conditions
Activity	Measured by the ability of the immobilized protein to support the adhesion of MS-1 mouse pancreatic islet endothelial cells. When 5 x 10^4 cells/well are added to rmKirrel1 coated plates (30 µg/mL, 100 µg/well), approximately 60%-80% will adhere after 90 minutes at 37° C.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, 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.

BACKGROUND

Kirrel1, also called neph1, is a 90 - 110 kDa type I transmembrane glycoprotein that belongs to the NEPH family of the immunoglobulin superfamily (1 - 4). The 789 amino acid (aa) mouse Kirrel1 contains a 47 aa signal sequence, a 484 aa extracellular domain (ECD) with five C2-type Ig-like domains, a 21 aa transmembrane sequence and a 237 aa cytoplasmic domain (5). An isoform diverges in the cytoplasmic domain and ends at aa 634, prior to four tyrosine phosphorylation sites, a podocin interaction motif, and a C-terminal PDZ motif that are all important for the signaling functions of Kirrel1 (1, 6). If expressed, this isoform would be expected to block homo- and hetero-multimer formation, thus acting as an inhibitor. The ECD also contains a site for FGF/FGF R interaction, and an RGD site that may allow integrin-mediated cell attachment (5). Mouse Kirrel1 shares 99% and 97% aa identity with rat and human Kirrel1, respectively, within the ECD. Kirrel1 expression has been mainly studied in the kidney glomerular slit diaphragm, but its expression with nephrin or other family members has also been reported in central nervous system neurons, pancreas and placenta (3, 4, 7 - 9). Kirrel1 forms *cis* hetero-oligomers with nephrin, which brings together signaling molecules that direct actin polymerization (3, 4, 10). This interaction is essential for barrier function in the slit diaphragm, and mice deleted for Kirrel1 die perinatally due to proteinuria and failure to thrive (2, 3).

References:

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