

Rat KIRREL3 / NEPH2 Protein (His Tag)

Catalog Number: 80225-R08H



Sino Biological
Biological Solution Specialist

General Information

Gene Name Synonym:

KIRREL3

Protein Construction:

A DNA sequence encoding the rat KIRREL3 (Q09GS6) (Met1-Ala523) was expressed with a polyhistidine tag at the C-terminus.

Source: Rat

Expression Host: HEK293 Cells

QC Testing

Purity: > 95 % as determined by SDS-PAGE

Bio Activity:

Measured by the ability of the immobilized protein to support the adhesion of MS1 mouse pancreatic islet endothelial cells. When cells are added to rat KIRREL3 coated plates (15 µg/mL, 100 µL/well), > 20% will adhere specifically after 90 minutes at 37 °C.

Endotoxin:

< 1.0 EU per µg of the protein as determined by the LAL method

Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

Predicted N terminal: Leu 22

Molecular Mass:

The recombinant rat KIRREL3 comprises 513 amino acids and predicts a molecular mass of 56.4 kDa. The apparent molecular mass of the recombinant protein is approximately 60-64 kDa in SDS-PAGE under reducing conditions due to glycosylation.

Formulation:

Lyophilized from sterile PBS, pH 7.4

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Storage:

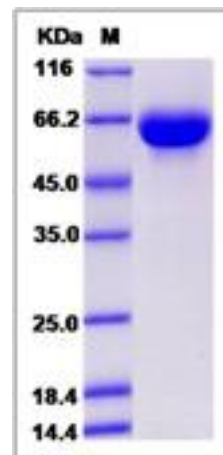
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

Kin of IRRE-like protein 3 (KIRREL3) also known as nin of irregular chiasm-like protein 3 or nephrin-like protein 2 (NEPH2) is a member of the nephrin-like protein family of transmembrane proteins, which includes NEPH1 (KIRREL) and NEPH3 (KIRREL2). KIRREL3/NEPH2 is expressed in fetal and adult brain, and also in podocytes of kidney glomeruli. The cytoplasmic domains of KIRREL3/NEPH2 interact with the C-terminus of podocin, also expressed in the podocytes, cells involved in ensuring size- and charge-selective ultrafiltration. Mutations in KIRREL3/NEPH2 are associated with mental retardation autosomal dominant type 4. KIRREL3/NEPH2 expression is turned on in migrating neurogenesis of the pontine nucleus (PN) neurons only after they enter the presumptive nuclear region. KIRREL3/NEPH2 knockdown disrupted the nuclear organization of PN presumably by changing the migratory behavior of PN neurons inside the nuclear region. Moreover, overexpression of the cytoplasmic region of KIRREL3, which can sequester intracellular signaling of endogenous KIRREL3, resulted in similar phenotypes. Overall, these results suggest KIRREL3 is involved in the neurogenesis of the PN through the control of neuronal migration inside the nucleus.

References

1. Bhalla K, *et al.* (2008) Alterations in CDH15 and KIRREL3 in patients with mild to severe intellectual disability. *Am J Hum Genet.* 83(6): 703-13.
2. Gerke P, *et al.* (2005) NEPH2 is located at the glomerular slit diaphragm, interacts with nephrin and is cleaved from podocytes by metalloproteinases. *J Am Soc Nephrol.* 16(6): 1693-702.
3. Gerke P, *et al.* (2006) Neuronal expression and interaction with the synaptic protein CASK suggest a role for Neph1 and Neph2 in synaptogenesis. *J Comp Neurol.* 498(4): 466-75.

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